

# California Legislature



## Joint Legislative Committee on Emergency Management

Assemblymember Bonnie Lowenthal, Chair  
Senator Christine Kehoe, Vice Chair

**End of Session Report 2010-2012**

### **Committee Membership**

Senator Elaine Alquist • Senator Ellen Corbett • Senator Kevin de León • Senator Bob Dutton •  
Senator Bill Emmerson • Senator Mimi Walters • Assemblymember Katcho Achadjian •  
Assemblymember Beth Gaines • Assemblymember Kevin Jeffries • Assemblymember Holly  
Mitchell • Assemblymember Richard Pan • Assemblymember Bob Wieckowski

## **The Joint Legislative Committee on Emergency Management**

On November 2, 2003, Governor Davis, in consultation with Governor-elect Arnold Schwarzenegger, named a Blue Ribbon Fire Commission to review the effort to fight the state's 2003 wildfires and provide recommendations to prevent destruction from future fires. The first meeting of the Commission was convened on November 13, 2003, in Manhattan Beach.

Broadly representative of the affected communities, firefighting professionals, and other Federal, State, and local stakeholders, the Governor's Blue Ribbon Fire Commission was comprised of representatives from State, county, and city governments; State agencies including the California Department of Forestry and Fire Protection (CDF) and CalEMA (the California Emergency Management Agency, formerly OES); firefighting professionals and associations; members of Congress, and Federal agency representatives from the U.S. Department of Defense, the U.S. Department of Homeland Security's Federal Emergency Management Agency, the U.S. Bureau of Land Management, and the U.S. Forest Service.

After two years of hearings and meetings, the Blue Ribbon Commission issued a report with 49 multi-level recommendations covering the topics of: jurisdictional and operational barriers; training; mutual aid systems; local building, planning, and land use regulations; and communications and interoperability.

A key state recommendation to overcoming jurisdictional and operational barriers was the development of a permanent Joint Legislative Committee on Disaster Response and Homeland Security. As part of the Committee's mandate, the Commission suggested it should have responsibility, in so far as possible, to implement the recommendations of the Blue Ribbon Fire Commission and to provide a public forum for discussion of California's emergency services and homeland security structure. The Commission also saw the Joint Committee as overseeing all relevant rules and regulations to resolve conflicting issues and to help evaluate strategies. The establishment of the Joint Committee was a high priority of the Blue Ribbon Commission.

With this in mind, the Joint Legislative Committee on Emergency Management (formerly Emergency Services and Homeland Security) was established in 2004. The Joint Committee has held 14 hearings – of both an investigatory and research/preparedness nature.

These hearings have consistently covered the topic of wildfires, but have also explored terrorism, natural disasters such as earthquake, tsunami and flood, pandemics, operational security at California's ports, and the maximization of federal homeland security grant monies. The Committee's former Chair and Vice Chair alone have authored 21 pieces of legislation to enhance California's emergency preparedness and response capabilities – including Assembly Bill 38 (Nava, 2008) which merged the Governor's Offices of Emergency Services and Homeland Security into the California Emergency Management Agency. Committee members and staff have also historically served as a conduit for information flow between state and federal emergency management agencies, the Legislature, and the public.

In 2011, the Joint Committee was made permanent, via Assembly Concurrent Resolution 38 (Lowenthal, 2011, Resolution Chapter 31). As a requirement of its continuous status, it was determined that, at the end of each biennial session of the Legislature, a report shall be issued to the Governor and Legislature outlining the Joint Committee's progress, including legislative recommendations relating to the status of services and policies effecting public safety and essential emergency management capabilities in California. That report is encapsulated within the following pages.

## Table of Contents

### Hearings of the Joint Legislative Committee on Emergency Management

• August 12, 2011 ~ <b>Emergency Communications: Who're You Going to Call?</b>	
○ Hearing Summary	1-10
○ Hearing Agenda	11
○ Appendix 1A, Supplemental Materials	12-87
• October 19, 2011 ~ <b>Water Reliability and Seismic Risk</b>	
○ Hearing Summary	88-93
○ Hearing Agenda	94
○ Hearing White Paper	95-104
○ Appendix 2A, Supplemental Materials	105-150
• October 26, 2011 ~ <b>Addressing Grid Vulnerabilities: September 8, 2011 Southwest Power Outage</b>	
○ Hearing Summary	151-160
○ Hearing Agenda	161-162
○ Hearing White Paper	163-172
○ Appendix 3A, Supplemental Materials	173-178
• February 3, 2012 ~ <b>Investigation of December 2011 Southern California Windstorm Outage</b>	
○ Hearing Summary	179-188
○ Hearing Agenda	189
○ Hearing White Paper	190-202
○ Appendix 2A, Supplemental Materials	203-214
• August 6, 2012 ~ <b>Emergency Interoperability: What's Next for California?</b>	
○ Hearing Summary	215-220
○ Hearing Agenda	221
○ Hearing White Paper	222-235
○ Appendix 2A, Supplemental Materials	236-268
Summary of Legislative Recommendations 2010-2012	269-273
Committee Accomplishments 2004-2012	274-278

**Emergency Communications:  
Who're You Going to Call?  
A Legislative Informational Hearing**

Friday, August 12<sup>th</sup> at 2:00pm  
Lakewood City Hall, City Council Chambers

On Friday afternoon, August 12, 2011, the Joint Legislative Committee on Emergency Management held a hearing to discuss the status of California's current emergency alert and warning system and examine technologies that may improve the capabilities of our first responders. The hearing was held in the City Council Chambers at Lakewood City Hall and started at 2:00pm and continued until 5:00pm. Over 50 people attended.

Of the Committee's 14 members, only the Chair, Assemblymember Bonnie Lowenthal, was able to participate.

This report records who spoke at the Committee's hearing (see the white pages) and reprints supplemental materials shared with the Committee by speakers (see the yellow pages). No briefing paper or background paper was issued in advance of this hearing.

The Assembly Speaker's Office of Member Services audio and video-recorded all comments by the legislators and other speakers. That recording is part of the Committee's official records of the August 12<sup>th</sup> hearing.

The Speakers

The Committee's agenda listed nine invited speakers; two other people also spoke to Chairwoman Lowenthal about their concerns and suggestions during the hearing's public comment periods. This section captures the highlights of their comments. The appendix reprints what the speakers gave the Committee (see the yellow pages).

**Chairwoman Lowenthal** began by welcoming everyone to Los Angeles and by offering a moment of silence to remember Lieutenant Commander Jonas Kelsall, one of 22 members of Seal Team 6 killed in Afghanistan the weekend prior. He was the son of Teri and John Kelsall, President and CEO of the Lakewood Chamber of Commerce and a member of the Lakewood Rotary.

Chairwoman Lowenthal then introduced the Joint Legislative Committee on Emergency Management to those in attendance. She proceeded to inform the audience that the importance of the hearing's topic was highlighted via the terror incidents in July 2011 (the month preceding the hearing) in Oslo and Utoya, Norway – both of which included numerous and tragic communications errors by emergency response officials.

### Setting the Stage

The California Emergency Management Agency's (CalEMA) Acting Secretary, **Mike Dayton**, began by outlining the structure of both our national and state warning systems. He explained that the National Weather System feeds information into the California State Warning Center, which receives hundreds of thousands of alerts annually. These alerts are filtered by staff and those deemed to be of the utmost importance and to have the largest impacts to people and property are communicated in an emergency notification using the state's Emergency Alert System (EAS) and the Emergency Digital Information Service (EDIS; a subscription-only system, limited for public communication). Per the state's Emergency Plan and operating protocols, a conference call is then scheduled with any affected local governments, who then make determinations about evacuation orders, if necessary. In many cases, these counties would then also utilize their reverse notification systems, if applicable, to notify residents of evacuations, shelter locations, and other pertinent information.

Dayton added that the Personal Localized Alerting Network (PLAN) represents the next generation in the federal government's effort to enhance their emergency alert capabilities. This system, also often referred to as the Commercial Mobile Alert System (CMAS) would allow for alerts to be issued to the public at-large or those in targeted areas using cell phone technology.

Dayton noted that the main drawback to the current federal and state systems is that, while they are robust with information and successful in coordinating with local partners and subscribers, federal, state, and local emergency managers lack the ability to notify all affected persons before, during, or after an emergency. He added that there are tsunami sirens in use along the coast, and broadcast television capabilities in most areas across the state, but stressed that these tools remain limited in their applications.

**Chairwoman Lowenthal** inquired about outreach to non-English speakers. Dayton noted that non-English speakers are not currently accounted for in PLAN, but that they will be taken into account as the program is rolled out over the next several years. CalEMA is currently working with the University of California, Davis' Telemedicine Program for translation services. He added that California was, however, the beta testing ground for PLAN's use by the hearing and visually impaired community.

**Chairwoman Lowenthal** then asked what was needed on the part of California to further the application of PLAN. Dayton responded that federal homeland security funds can be used to build out our state's infrastructure and that we should also be seeking to leverage private companies and social media outlets as avenues to educate the public about this system.

**Chairwoman Lowenthal** also asked how many alerts can currently be issued per hour. Dayton replied that this is no limitation.

### State Perspective

The Deputy Director of the California Technology Agency (CTA), **Karen Wong**, then gave an overview of the state's 9-1-1 system. Wong began by explaining that California is about to engage with Next Generation 9-1-1 (Next Gen 9-1-1), an IP-based network for 9-1-1 calls. The state's current system can become congested, and Next Generation 9-1-1 seeks to provide efficiencies in this arena.

Wong noted that CTA adopted a Strategic Plan for Next Gen 9-1-1 in July 2010, with a Roadmap issued in December 2010. She explained that public meetings were then held across the state throughout February and March of 2011 and that a report of these meetings was currently being written.

Wong added that concurrently, Next Gen 9-1-1 is being piloted in four areas of the state – three in Southern California and one in Mendocino by different carriers and vendors for feedback.

Wong went on to explain that Next Gen 9-1-1 is a multi-data system including voice, data, and audio platforms. The system currently incorporates 91 different languages, but will eventually include 150.

By way of background, she explained that federal funds were received in 2009 to be distributed to 13 counties in Northern California. These funds were used to help those local emergency operations and dispatch centers determine call origination by latitude and longitude, using an x, y routing system. At the same time, internet protocol (IP) infrastructure in those counties was also enhanced. She noted that there has been talk about using this new “backbone” to implement an updated EAS system and Next Gen 9-1-1. She says it may be possible down the road, but that Next Gen 9-1-1 is currently operated by contract via Verizon (as the provider) and Entrado (for the IP equipment). By contrast, our current 9-1-1 system is operated by Verizon and AT&T. It could be different companies operating this contract moving forward. CTA and the state are engaging in conversations with all partners and are hoping for a public-private partnership to facilitate implementation and reduce costs.

In regards to timing, Wong stated that California is anticipating a 3-year roll out of Next Gen 9-1-1, due primarily, to infrastructure concerns. She added that the funding in the state’s Emergency Telephone Account will not quite meet the costs of this roll-out. CTA recognizes this as an obstacle, but she noted that the Administration is looking to federal grants to make up the remaining costs. Wong added that California is ahead of most states in upgrading our 9-1-1 technology, considering the Federal Communications Commission (FCC) had just issued their Guidance to States document in the past week. She also noted that local government costs for 9-1-1 will not differ from those currently imposed.

Wong then discussed the California Highway Patrol’s (CHP) Routing on Empirical Data (RED) Project which is nearing closure after three years of implementation. This project was the state’s response to data showing that in 2007, 42% of the 11.6 million wireless calls received in California were not being answered due to an overwhelming number of wireless 9-1-1 calls (72%) being routed to CHP 9-1-1 call centers. She explained that, to combat this problem, the RED Project takes data and re-routes wireless calls to their appropriate local call centers. This has resulted in a dramatic decrease in unanswered wireless calls – from 42% in 2007 to less than 4.5% unanswered calls in 2011.

**Chairwoman Lowenthal** inquired as to whether any legislation would be needed to facilitate the roll-out of Next Gen 9-1-1. Wong answered that the state’s current 9-1-1 system was established by the Warren Act in the 1970s and that yes, legislative changes were due and would hopefully be drafted within the next month. She added that a portion of this statute includes funding for public awareness, and that CTA anticipates continuing that funding to educate Californians as Next Gen 9-1-1 is established.

#### Public Comment

**Carolyn Tate** with the Congress of California Seniors expressed some concern that CTA anticipates launching a public awareness campaign within the next six months – yet the system may not roll-out for 1-2 years. She also wondered if free phones would continue to be made available to the portion of California’s population that falls into certain income categories. Wong promised to take these issues into consideration.

### Local Perspective

**Laura Hernández**, the Assistant Director of the Ventura County Sheriff's Office of Emergency Services, was the first to present a local government perspective. She began by explaining the unique characteristics of Ventura County's population. In particular, she noted that there are over 20,000 Mixtec Indians who call the county home – many of whom are farmworkers or live in agricultural colonies. She added that within just this population, 11 different dialects are spoken and that there is no written language.

With this in mind, Hernández explained that Ventura County's "reverse 9-1-1" – in use for both health and public safety concerns – has been implemented throughout the bulk of the county, including seven out of ten cities. Hernández added that under the county's prior system, operated by WebEOC, the county only had 700 registered users. As a result, the county went in search of another vendor to operate their reverse emergency alert system and eventually, chose a company called Everbridge to operate a new system called VC Alert.

Hernández explained that the county's new system allows for residents to self-register and is both hosted and accessible via the Internet. She added that this is dramatically different than the county's experience with WebEOC and Reverse 9-1-1, which was costly to maintain. As a result, she is trying to get all of the area's cities on board the new platform. As an added benefit, VC Alert allows for manual reporting and includes the ability of cities to issue alerts for different types of events (with residents being given the opportunity to opt-in for non-emergency alerts). The system then issues simultaneous text, voice, and e-mail alerts to registered users during an event. She noted that with Reverse 9-1-1, county administrators had received numerous complaints about the "scary voice" issuing directions to residents. VC Alert eliminates this complaint entirely. Hernández added that the county and Everbridge utilize a 24-hour operator for tech support and that she anticipated full-scale launch of the new system at the start of 2012.

In regards to the state's emergency alert system and components, Hernández noted that the tsunami warning signs along Ventura County's stretch of coastline came accompanied with a strong awareness campaign – but that still not enough is known by residents. She believes the state can use homeland security funds to enhance the public's knowledge of this tool, and she will be recommending that Ventura County itself apply for funds for this purpose in 2012.

**Chairwoman Lowenthal** asked about the challenges that have been experienced by Ventura County in regards to their partnership with Everbridge and their implementation of VC Alert. Hernández answered that she believes Everbridge is looking to begin charging cities and users for ongoing maintenance of the system. She noted, however, that Ventura County used a public-private partnership to implement the area's tsunami signs, and she believes the same model could be used to fund Everbridge and continuation of VC Alert.

**Ron Lane**, the Director of San Diego County's Office of Emergency Services, also gave a presentation to illustrate his county's experience with alert and warning. Lane began by noting that during the wildfires of 2007, 515,000 people were evacuated within San Diego County alone. He explained that the county uses Reverse 9-1-1, but also has an internet-based notification system that was developed separately. He noted that this secondary system is not overly costly and that it was developed in response to challenges experienced during the 2007 wildfires.

In response to Chairwoman Lowenthal's earlier question about applications for different languages within Reverse 9-1-1, Lane responded that because time is critical – and was in 2007 – the county employed English-only alerts. He added, however, that when a Reverse 9-1-1 call is received in someone's house, that person's caller ID says "emergency" and that this word is very close to the same word in Spanish, "emergencia." Lane also stated that with non-time-sensitive calls, a second language is often used.

Lane continued to note that currently 17% of homes in San Diego County do not have a land line installed. For emergency operations within San Diego County, Reverse 9-1-1 alerts are supplemented with media and door-to-door communications. Consequently, though, in his opinion, Reverse 9-1-1 is becoming a less and less valuable tool. Additionally, the wildfires experienced throughout the county in 2007 knocked out power, which rendered cordless phones (of which now most land-lines are hooked up to) useless.

Because of the county's experiences in 2007, it was selected as a beta test site for PLAN several years ago by the federal government. Lane mentioned that currently, the county cannot call cell phones because of privacy concerns, but that PLAN will solve this problem, as all new phones will come equipped with chips installed (voluntarily included upon agreement by all major cell phone manufacturers). Anyone purchasing a phone beginning during the 2011 holiday season and beyond will receive the ability to opt-in or opt-out of alerts issued via PLAN. Because of this, a public awareness campaign is vital to maximizing participation. Lane noted that one complication to the system has been the limitation to 90-characters in a message. He added that it took some practice on the part of emergency managers, but that in general, they found they could communicate alerts with this limitation with little problem.

Lane continued to say that his After Action Report, written after the conclusion of the PLAN beta test in San Diego, includes a number of different findings. One of these pertains to the geographic targeting of the population. He noted that this feature worked better in outlying areas, but that, for example, when the County attempted to notify people at PetCo Park, the alert actually picked up a much larger population.

To his knowledge, PLAN will roll-out to a greater audience in the Spring of 2012. The bonus to PLAN is that it is federally funded. This stands in contrast to Reverse 9-1-1 which costs the county \$.09 per call. Lane concluded by noting that, in his opinion, PLAN is the future of emergency alerting and it is vital that it be implemented. That said, he believes it is also imperative to utilize Reverse 9-1-1 technologies and PLAN concurrently, to maximize outreach, while PLAN is being implemented.

Los Angeles County Sheriff **Lee Baca** concluded the local government perspective panel. He began by noting that the public seems to be generally uninterested and uninvolved in emergency planning; that perhaps 1% of people are aware of what the county is doing to prepare for, and prevent emergencies.

Baca then explained that there are eight mutual aid regions in California – with the Los Angeles/Orange County area composing Region 1. He is the mutual aid region coordinator for Region 1. He then added that under Unified Command Structure, the county fire chief, though, is actually the mutual aid coordinator. Additionally, California's Region 1 is the Federal Emergency Management Agency (FEMA)'s "number one client" in the United States because of the threat of both fires and earthquakes.

Baca further explained that Los Angeles' Emergency Department is an entity under the jurisdiction of the County Board of Supervisors. Additionally, each community has its own Emergency Operations System – to which all police departments and sheriff's offices are connected.

Sheriff Baca continued to explain that Alert LA County is the area's version of Reverse 9-1-1. During major events and emergencies, the County also actively utilizes the Emergency Alert System, which is broadcast-based; a system called Nixle, which sends email and text messages; social networking systems; and agency websites. He asked the question, "is this enough?" and then responded, "no." In his experience, the public is responsive to instructions, but that no one system will guarantee everything. One problem in particular, that the county needs to be aware of, is that of unofficial messages. To this extent, he has always been an advocate for a dedicated channel on television for emergencies – to be used either locally or nationally. He believes this would help to streamline messaging during incidents instead of allowing bifurcated or wrong messages to be delivered by the media.

In regards to interoperability, Sheriff Baca believes that the county is 4-5 weeks away from issuing a new Request for Proposal (RFP) for their proposed Los Angeles Regional Interoperable Communications System (LA-RICS). LA-RICS will ensure voice and data compatibility between first responders and other local partners during a disaster. He added that the county is doing their best to avoid a lawsuit by voiding their first RFP for this system. He has plans to travel to Washington, DC next week for meetings with both the Federal Communications Commission (FCC) and the Department of Transportation to seek guidance on how best to move LA-RICS forward. Sheriff Baca noted that LA-RICS itself is the equivalent of an entire state's system in another part of the country, which makes this issue incredibly complicated.

Sheriff Baca changed gears somewhat to note that during the wildfires of 2007, cell phones in the region basically became dysfunctional as the system collapsed in the face of 800,000 calls being received at the same time. He has had numerous conversations with the wireless companies throughout Los Angeles and has been assured that this problem has been fixed. He has also been assured that public safety phones, which operate on a different bandwidth from regular cell phones, will be maintained during a crisis and will not contribute to the overcrowding of the system during an emergency. He concluded by noting that the Emergency Alert System in Los Angeles is tested weekly and that text messaging capabilities are tested monthly.

Sheriff Baca then invited Chairwoman Lowenthal and any other legislator to tour the Sheriff's Communications Center for a better perspective of this integrated system, noting that this center is the only one in the country tied directly to our federal operations center.

**Chairwoman Lowenthal** inquired as to whether Sheriff Baca believed that legislative action was needed for anything. He answered that there may be an opportunity to study the gaps, strengths, and weaknesses within the system – and he noted that he felt this would be valuable information to policy makers and emergency managers alike.

### Private Perspective

**Don Boland**, Executive Director of the California Utilities Emergency Association, was listed as a speaker for this hearing but chose, instead, to moderate the fourth panel.

**Brad Gaunt**, a Product Manager for Enterprise and Emergency Messaging for Sprint/Nextel was the first panelist to discuss the industry's role in emergency messaging and alerting. He began by noting that there are challenges to using SMS (short message service) technologies for full-scale alerting. This is because SMS technology generates individual transactions at any given moment – which could mean that a large-scale group message could take hours to be received and seen by everyone. Additionally, a message of this sort could sufficiently tie-up networks and block voice calls. Moreover, Gaunt noted that there is no way to deliver SMS messages by the location of the recipient. There is also no way to alert a user that an “emergency alert” text has been received, instead of a standard text message. Finally, he explained that with SMS technologies, there is no public assurance that the text is being generated and issued from a public safety entity.

Because of these many problems, Gaunt believes that PLAN/CMAS is a great step forward in terms of large scale emergency alert messaging. In regards to the capacity of networks, PLAN is great because one message is issued – which is no problem. It also allows for geographic targeting: if you are in a location that needs evacuating, you get a message. There is no need for the county to maintain a list of people, and someone who lives in the evacuation area but who may be out of town will not unnecessarily receive emergency messages. Gaunt also noted that PLAN is an opt-out, not opt-in service. Consequently, all users with new cell phones will receive messages – unless they specifically opt-out of receiving them. This will maximize alerting capabilities. According to Gaunt, Sprint/Nextel claims that it can alert every Sprint device in the nation within six minutes (but privately, it's closer to three minutes).

Gaunt continued to explain that PLAN/CMAS is a single gateway. FEMA will offer the gateway and host it, and provide emergency managers with secure access. Sprint's PLAN capabilities currently allow for a 160-character emergency alert message, but the company is hoping to allow for 500 characters in the future. He also explained that under PLAN, four different types of alerts could be issued:

- 1) A Presidential Alert (no opt-out option for consumers)
- 2) An Extreme Alert
- 3) A Severe Alert
- 4) An Amber Alert
- 5) A Monthly Test

Gaunt noted that Sprint/Nextel's PLAN chip has been in production since October 2010 and that they were the providers who completed the successful beta test with San Diego County. The company believes that it will be nationwide and network-ready by the end of 2012, but California-ready by the end of August 2012. Additionally, San Diego County's system remains in place and functioning after the completion of the PLAN beta test.

According to Gaunt, public education will be the main issue. People will need to have a new device in their hands. And the public will need to understand that every new device has this capability unless the client turns it off.

Gaunt also noted that the federal government assured cell companies that they would be ready to launch PLAN in October 2012. As a result, companies believed that the web enterprise component to this system would be available by then. However, they have recently learned that the federal government will not be developing this technology and that software will need to be developed by someone and purchased by all counties and local governments. This is a major issue.

The second presentation on the Private Perspective panel was given jointly by **Kent Ames** and **Peter White**, both with AT&T. Ames' specialty is E-9-1-1 public safety solutions and he concurred with much of Karen Wong's testimony. He added that the benefits to Next Gen 9-1-1 are that: a) there will be no single point of failure; b) it will be geographically diverse and be tailored to the needs of different regions; and c) the system will dynamically re-route calls if one call center becomes burdened.

Ames added that there is an issue with "warm lines." Specifically, current legislation mandates removing a warm dial tone from homes that do not use land lines. This results in a savings to the state. CTA is also pushing this because it results in non-emergency calls to 9-1-1 when a phone is then connected. As a result, AT&T has decided to offer an alternative package to its users that allows for just emergency calls for \$4/month.

**Peter White** concurred with much of what was said by Brad Gaunt in regards to PLAN/CMAS. He added that a key question is "what do locals need to do and/or spend to connect to with the FEMA gateway?" He also concurred that they were under the impression that FEMA would be doing much more outreach to local governments on this specific issue. Of particular concern is the fact that the alert originator needs to go through a FEMA-credentialing process so they know how to appropriately use PLAN. In his opinion, it makes no sense for everyone to have put the amount of effort into creating this system only for it to then not be readily accessible by emergency managers. He believes we need better communication and ongoing emergency manager outreach in regards to this matter. Additionally, he noted that there will be local agency costs and that we should strive to ensure that PLAN does not become the victim of an unfunded mandate.

White added that AT&T is rolling out new phones with PLAN technologies in 2012, as well. They are currently being tested and hope to make the phones available to the public in early 2012 with all connected to PLAN and FEMA by the end of 2012.

In regards to the issue of multiple languages, White noted that there has been a lot of work done on this front with PLAN. He does not believe that the system is optimized yet on this front, but notes that additional work is continuing.

White then returned to the issue of 9-1-1 calls. And noted that SMS messaging was never meant to be used for emergency communications; it was meant for chit chat between teenagers and short messages between friends and family. Additionally, pranks to 9-1-1 are and will be easier via text message. These issues must be addressed as the state prepares to roll out Next Gen 9-1-1 and utilize these new technologies. He added, as an example, that in a recent European trial, it took a dispatcher 14 minutes to handle a text 9-1-1 message. This is not optimal for either the dispatcher, or the person in trouble.

White concluded by asking the Committee to be mindful of three things:

- 1) Any cellular communications technology or service will necessitate a conversation about the siting of towers.
- 2) Liability protection – cellular companies want the same liability protection that exists under current 9-1-1 rules.
- 3) The government (both at the state and local levels) will need to communicate with the public regarding the general realities of these new technologies. There will never be enough network capacity to handle everyone calling a loved one during a disaster.

The final presentation on the fourth panel was given by **Jerome Candelaria**, Vice President and Counsel for the California Cable & Telecommunications Association (CCTA). Candelaria began by explaining that the networks that exist in California and across the country that bring communications to consumers were not built with government subsidies – they were built with at-risk capital from Wall Street. Additionally, Candelaria noted that the EAS system operates on cable and television networks on a voluntary basis via agreement with the major providers.

In regards to outstanding bandwidth questions with the FCC, Candelaria noted that he knows that CalEMA is working very closely with the federal government to resolve these issues. He also added that, in regards to Ron Lane’s comments about land lines becoming inoperable during power outages, that CCTA has worked with its member companies and encouraged them to provide back-up battery power with their devices to avoid this situation in the future. The same is true of cell towers and other network infrastructure during an emergency – back-up power must remain a priority.

In response to Sheriff Baca’s suggestion of a single television channel for use during emergencies, Candelaria noted that CCTA runs the California Channel which reaches more homes in California than any other. He likened it to the California version of C-SPAN.

In regards to Chairwoman Lowenthal’s concerns about reaching deaf and blind populations and those speaking other languages, Candelaria noted that he thinks that we still need more standardization from FEMA and guidance from the federal government in respect to this issue. He also believes that the originator of an alert message should be responsible for a message’s translation as cable is just a pass-through – this responsibility should not become that of the cable provider, for example.

Candelaria also warned the Committee against overregulating electric infrastructure in the name of “safety.” He added that public safety communications use approximately 86% of the state’s broadband and network infrastructure for messaging currently.

#### Public Comment

A resident of Palos Verdes inquired about fiber optic pipelines. He noted that amplifiers have back-up batteries that last for 12 hours. But he wondered what the standard was in regards to this back-up life. “Can cable monitor battery life remotely, and then send people out to repair batteries when they expire?” Candelaria responded that when fiber-optic cable burns, communications are able to be re-routed because of built-in redundancy in the system.

### Legislative Solutions/Follow-Up Items

- 1) The state should be seeking to leverage private companies and social media outlets as avenues to educate the public about PLAN.
- 2) Updates to the code will be needed to facilitate the Next Generation 9-1-1 system.
- 3) CTA should engage seniors groups, like the Congress of California Seniors, in an effort to meet their needs in a public information campaign about Next Generation 9-1-1.
- 4) The state should look into using homeland security grant funding to better educate coastal area residents about tsunami warning signs and tsunami warning protocols.
- 5) Anyone purchasing a phone beginning during the 2011 holiday season and beyond will receive the ability to opt-in or opt-out of alerts issued via PLAN. Because of this, a public awareness campaign is vital to maximizing participation.
- 6) To alleviate the possibility of “unofficial” emergency messages being delivered to the public, the state should explore the possibility of creating a dedicated channel on television for emergencies.
- 7) The state could study the gaps, strengths, and weaknesses within the state’s emergency alert system to further educate our policy-making process moving forward.
- 8) Web enterprise technology and software to support PLAN will need to be developed by someone and purchased by all counties and local governments. It is unclear who will be responsible for development, but funding will be needed for local governments to purchase access to this system.
- 9) The Legislature should be prepared, moving forward, to engage in a conversation about the siting of towers for cellular communications technology – especially for the use of public safety communications.
- 10) Conversations and/or legislation may be needed in regard to liability protection for cellular companies employing PLAN. Most are hoping for the same liability protection that exists under current 9-1-1 rules.
- 11) Ongoing communication is needed on the part of governments (both state and local) with Californians in regards to messaging during a disaster. With the increased use of cellular technology, there will never be enough network capacity to handle everyone calling a loved one during a disaster.

Assemblymember Bonnie Lowenthal, Chair  
Senator Christine Kehoe, Vice Chair  
Assemblymember Katcho Achadjian  
Assemblymember Beth Gaines  
Assemblymember Kevin Jeffries  
Assemblymember Holly Mitchell  
Assemblymember Richard Pan  
Assemblymember Bob Wieckowski  
Senator Elaine Alquist  
Senator Ellen Corbett  
Senator Kevin de León  
Senator Bob Dutton  
Senator Bill Emmerson  
Senator Mimi Walters

## CALIFORNIA LEGISLATURE



State Capitol, Room 3152  
Sacramento, CA 95814  
(916) 319-2054  
Fax: (916) 319-2154

### Joint Legislative Committee on Emergency Management

Assemblymember Bonnie Lowenthal, Chair

#### Emergency Communications: Who're You Going to Call?

Friday, August 12<sup>th</sup> at 2:00pm

Lakewood City Hall, City Council Chambers

##### Opening

- Honorable Bonnie Lowenthal - *Chair, Joint Legislative Committee on Emergency Management*

##### Setting the Stage

- Mike Dayton – *Acting Secretary, California Emergency Management Agency (CalEMA)*

##### State Perspective

- Karen Wong – *Deputy Director, California Technology Agency*

##### Local Perspective

- Lee Baca – *Sheriff, Los Angeles County*
- Laura Hernandez – *Assistant Director, Sheriff's Office of Emergency Services, Ventura County*
- Ron Lane – *Director, County of San Diego's Office of Emergency Services*

##### Private Perspective

- Don Boland – *Executive Director, California Utilities Emergency Association*
- Brad Gaunt – *Product Manager, Enterprise and Emergency Messaging Sprint/Nextel*
- Kent Ames – *AT&T E-9-1-1 Public Safety Solutions* and Peter White – *AT&T Global Public Policy*
- Jerome Candelaria – *Vice President and Counsel, Regulatory Affairs, California Cable & Telecommunications Association*



**Testimony of**

**MIKE DAYTON**

**Acting Secretary, California Emergency Management Agency**

**Before the Joint Legislative Committee on Emergency Management  
Lakewood City Hall, City Council Chambers**

**Hearing:**

**“Emergency Communications: Who’re You Going to Call?”**

**August 12, 2011**

Madam Chair and members of the Committee, thank you for the opportunity to provide testimony on the California Emergency Management Agency’s (Cal EMA) efforts, accomplishments and future goals in providing emergency alerts and warnings to the public.

As Acting Secretary of Cal EMA, I have the overarching responsibility to ensure that our efforts work to prevent, prepare for, respond to, and quickly recover from man-made and naturally occurring disasters that may impact California. Cal EMA coordinates homeland security and emergency activities to save lives and reduce property losses during disasters and works to expedite recovery from the effects of disasters. On a day-to-day basis, Cal EMA provides the leadership, assistance, and support to state and local public safety agencies in planning and preparing for the most effective use of federal, state, local, and private sector resources during times of emergencies.

When disasters strike, whether they are natural, accidental, or man-made, it has always been vital that alerts and warnings be reported accurately and in a timely fashion to those who may be in danger. Cal EMA’s role in alerts and warnings is multifaceted. The Agency is responsible for monitoring, informing, communicating and alerting of any natural or man-made

emergencies through the California State Warning Center (CSWC). We are also responsible for developing and implementing the California State Emergency Plan, which, in part, supports local government with alert and warning procedures and protocols. Finally, Cal EMA coordinates and provides guidance for broadcasters and cable industry through the California Emergency Alert System Plan.

Each jurisdiction within the State is responsible for preparing for a disaster, including establishing methods for alerting and warning the public. The CSWC is the official state level point of contact for emergency notifications. Operating 24 hours a day, 365 days a year, the CSWC has multiple communication methods for contacting local and state government emergency agencies that are directly responsible for the safety of people living in all 58 counties and receives over 570,000 notifications a year from local jurisdictions. Warning Center personnel maintain contact with County Warning Points, state agencies, federal agencies and the National Warning Center in Berryville, Virginia.

The State Emergency Plan outlines a state-level strategy to support local government efforts during a large-scale emergency. The plan provides methods for carrying out emergency operations; the process for rendering mutual aid; an overview of emergency services of governmental agencies; a description of how resources are mobilized; procedures for the dissemination of emergency public information; and how continuity of government will be maintained.

The Emergency Alert System (EAS) Plan is mandated by the Federal Communications Commission (FCC) and serves two basic purposes:

- 1) Describe how the Governor can provide emergency messages affecting a large area, multiple areas, or the entire area of the state.
- 2) Provide guidance for the broadcast and cable industry in the use of EAS, both voluntarily and in the event of a national alert from the President of the United States.

The EAS, jointly administered by the FCC, Federal Emergency Management Agency (FEMA), and National Weather Service (NWS), is a nationwide alert and warning system using media broadcasters. The EAS is a system for national, state or local emergency warnings to the public, and provides a means of distributing emergency information quickly by radio stations, television stations and cable entities and then to the general public. EAS does not, however, utilize other forms of communication, such as mobile phones or the internet.

EAS is built on a structure conceived in the 1950s when over the air broadcasting was the best available technology for widely disseminating emergency alerts to the public. The advent of new media has brought a significant shift in how the public consumes information. Given the highly mobile nature of the population and the diverse communication needs of the public, alerting systems must be modernized.

The State's equivalent of EAS is the Emergency Digital Information Service (EDIS), which is a statewide alerting system that supplements the National EAS. Developed soon after the 1989 Loma Prieta Earthquake, EDIS allows the public to subscribe to receive notifications and provides email and internet warnings with audio and pictures to the public. The system is the backbone of many county emergency systems and is available without charge to local, state, and federal agencies serving within the State. EDIS has provided 20 years of reliable service, but is in need of modernization.

The Integrated Public Alert and Warning System (IPAWS) is the nation's next-generation infrastructure of alert and warning networks. IPAWS will expand upon the traditional audio-only radio and television EAS by providing one message over more devices to more people before, during, and after a crisis so they may take mitigating actions to save lives and reduce damage to property. IPAWS will develop interoperable standards and interfaces to ensure disparate messages can travel many paths, such as through mobile devices or over the internet, in order to reach the American public.

Many communities also rely on an automatic calling notification plan, often referred to as “Reverse 9-1-1,” although REVERSE 9-1-1 is actually a trademark of Cassidian Communications, which develops public safety communication systems. The system requires citizens to register their phone numbers (land-lines and cellular) to receive emergency notifications, allowing public safety organizations to notify its citizens of emergency events occurring in a specific area. Various third party vendors provide this capability to public safety organizations for a fee, but individuals are not charged to receive emergency notifications. The system does have drawbacks in that individuals must register to receive alerts and non-residents visiting the impacted area will not receive alerts.

The Personal Localized Alerting Network (PLAN) is an alerting system designed to transmit emergency alerts to mobile devices, and is the result of a unique public private partnership between the FCC, FEMA, and the wireless industry. In 2008, the FCC adopted rules allowing wireless carriers to transmit text-like emergency alerts to mobile devices. PLAN Messages will use new technology and will not be impacted by network congestion. Alerts will be accompanied by a unique audio signal and vibration cadence for hearing and visually impaired citizens.

In October 2010, Cal EMA conducted the nation’s first test of PLAN with San Diego County and Sprint/Nextel in a four week trial with the goal to validate real time use cases, determine system performance and identify shortfalls. During the trial, they transmitted over 50 alerts simulating large & small scale disasters from tsunamis to hazardous spills. The system performed as designed and expected. T-Mobile, AT&T, Sprint Nextel and Verizon have committed to making PLAN available to the public by the Federal Communication Commission deadline of April 7, 2012.

PLAN differs from a reverse 9-1-1 system in that messages can be targeted to a location rather than relying on users to sign up and indicate the areas about which they are interested. Cellular customers will automatically be enrolled in PLAN at no additional cost, but can opt-out of receiving the alerts. There is also no charge to public safety organizations for delivery of the emergency alerts, where traditional reverse 9-1-1 systems can costs thousands in annual fees.

AB 2231 (Pavley, Chapter 764, Statutes of 2006) required the Director of the former Office of Emergency Services (now Cal EMA) to convene a working group, as specified, to make recommendations on a system for the transmission of emergency alerts to the public through a public-private partnership, and report the working group's findings and recommendations to the Legislature. Pursuant to the legislation, Cal EMA convened the Alert and Warning Working Group (AWWG), consisting of broadcasters, wireless service providers, emergency services, public safety officials, and academia.

The AWWG met throughout 2008 to review the current state of alert and warning messaging, technology, protocols, and identified four key areas of concern: (1) technical issues, (2) social issues, (3) standardization, and (4) funding, legal, and liability issues. This effort culminated in the "Alert and Warning Report to the California Legislature" that addressed current trends in alert and warning, including significant national initiatives in the process of being implemented, identified associated issues in California, and made a series of recommendations for development, maintenance, and operation of an integrated Alert and Warning system in California. In late 2009, Cal EMA reconvened the workgroup to begin implementing the recommendations of the report. The workgroup proposed addressing 13 key deliverables that address most of the 33 recommendations contained in the Report, including:

- Standards & Protocols
- Liability
- Technical Capabilities
- Accessibility for hearing and visually impaired citizens
- Training
- Costs

To date we have met 15 of the 33 recommendations from the Report; however, many of the recommendations are dependent on the adoption of federal standards and deployment of IPAWS. Others are not feasible at this time due to the need for more advanced technology or excessive cost.

So where do we go from here? Cal EMA is working to leverage new technology to reach the largest number of people. The future of alert and warnings in California includes earthquake early warning systems; using social media; and, Next Generation 9-1-1.

**Earthquake Early Warning:** This system will allow us to send warning messages to emergency responders, utilities and transportation agencies, providing 10 to 15 seconds of warning after a no-notice earthquake. This system will be accomplished in partnership with the U.S. Geological Survey (USGS) and the California Integrated Seismic Network (CISN).

**Social Media:** For over two years Cal EMA has leveraged social media resources to reach wider audiences with messages of emergency preparedness, response, and recovery in support of the agency's mission. Using Facebook, Twitter, YouTube, Wordpress, and Flickr, Cal EMA has been able to effectively communicate real-time information about several emergency incidents and events, as well as provide timely preparedness information related to potential seasonal hazards such as fires and severe weather. For example, Cal EMA utilized social media to monitor media reports and questions from the public regarding incidents such as the Haiti earthquake, San Bruno gas explosion, and Japan Earthquake. Social media has allowed for direct communication with the public, enabling them to see how the State is responding to emergencies.

**Next Generation 9-1-1:** The next generation of 9-1-1 systems will be capable of handling video, photos and text, and will have the ability to transfer 9-1-1 calls among communication centers. My colleague, Karen Wong from the California Technology Agency, will provide a more detailed overview of Next Generation 9-1-1.

As modes of communication continue to evolve, Cal EMA is committed to preserving lives and property by harnessing all technological avenues to ensure people are notified of an impending emergency in the most timely manner. Thank you again for bringing attention to this vital issue. I look forward to a continued partnership with this Committee in addressing critical emergency management issues and am happy to answer any questions you may have.

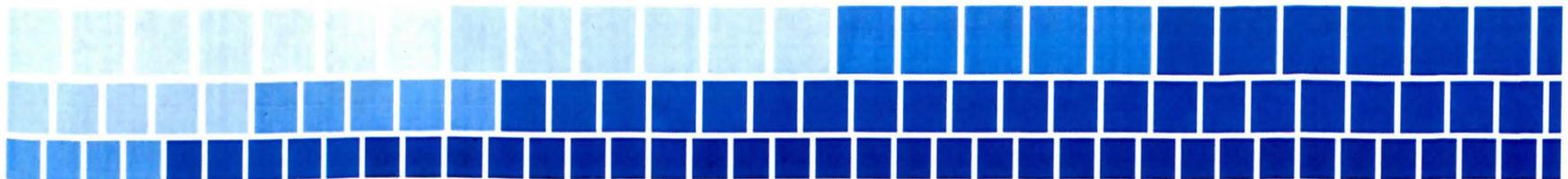
CalEMA's "Alert & Warning – Report to the California State Legislature" was included in Committee members' packets and copies were provided to the public.

The report may be accessed via the following link:  
<http://www.calema.ca.gov/TechnologyOperations/Pages/EAS.aspx> listed under "EAS Documents."



# Next Generation 9-1-1 Briefing

Karen Wong, Deputy Director  
Public Safety Communications Office



# NEXT GENERATION 9-1-1 (NG9-1-1)

## What is NG9-1-1?

- NG9-1-1 is best described as an open-standard-based, robust system of systems, that allows the public to use **any device** to request help or send information to the appropriate public safety agency
- NG9-1-1 is often considered a network, but it doesn't stop there – It's more than just technology!
- It contains all of the functions of the legacy 9-1-1 system while allowing for greater interoperability, convergence and better utilization of financial and human resources, in a secure environment

## What do we have to address in NG9-1-1?



# THE FUTURE OF NG9-1-1 IN CA

<b>Today's 9-1-1</b>	<b>Next Generation 9-1-1 in CA</b>
Virtually all calls are voice callers via telephones over analog lines	Voice, text, or video information, from many types of communication devices, sent over IP networks
Limited data is available	Advanced data sharing is available
Callers routed through legacy selective routers/limited forwarding and backup ability	Callers routed automatically based on location of individual, forwarding capabilities extend beyond local geographic boundaries, enhanced backup abilities.
Limited ability to handle overflow situations/callers could receive a busy signal	PSAPs able to control call congestion treatment, including dynamically rerouting of callers.

## NG9-1-1 IN CALIFORNIA

### Description:

The Next Generation 9-1-1 is an IP based system that will lay the groundwork necessary for expanded capabilities including advanced call routing, geographically independent call access, transferring, and call back up among and between Public Safety Answering Points (PSAPs). In addition, IP technology will enable the 9-1-1 network to support other new and non-voice technologies such as text Message, images, data sets and video in the future.

### Background:

For more than forty years Californians have been served by a capable 9-1-1 system. In 2010, the CA 9-1-1 system handled 23.8 million 9-1-1 calls alone. However, while the current 9-1-1 system has functioned efficiently for many decades, the core infrastructure is built on a legacy telephony-based platform unable to support new demands and capabilities.

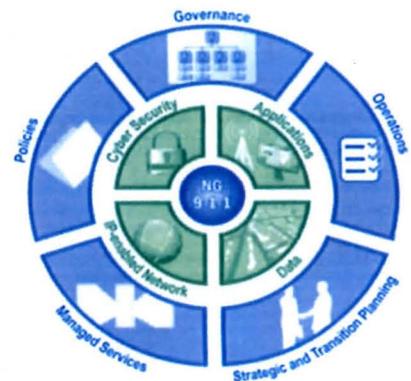
The wide spread adoption of rapidly advancing technologies like, text, video, Voice over Internet Protocol (VoIP) and the saturation of high-speed broadband access has raised the expectation of 9-1-1 services for Californians. Improvements are needed to support new requirements and expectations. To that end, California, along with other parts of the country, is migrating to Next Generation 9-1-1 (NG9-1-1).

### NG9-1-1 Projects:

- Enhanced 9-1-1 Grant Project
- Imperial County Hosted Solution
- Ventura County Hosted Solution
- Pasadena Regional Integrated Next Generation (RING) Project
- Mendocino County Hosted Solution

### Key Information:

- 2008 California pursued and won a Federal Grant to implement an IP based NG9-1-1 system in Northeastern California
- July 2010 - Published CA 9-1-1 Strategic Plan
  - Next Generation 9-1-1
  - Collaboration with Stakeholders
  - Public Outreach and Education
- December 2010 - Conducted Statewide PSAP NG9-1-1 Survey
- December 2010 - Published Proposed CA NG9-1-1 Roadmap
- February/March 2011 - Conducted 6 Public Meetings on NG9-1-1



© Copyrighted by L.R. Kimball

## ENHANCED 9-1-1 GRANT PROJECT

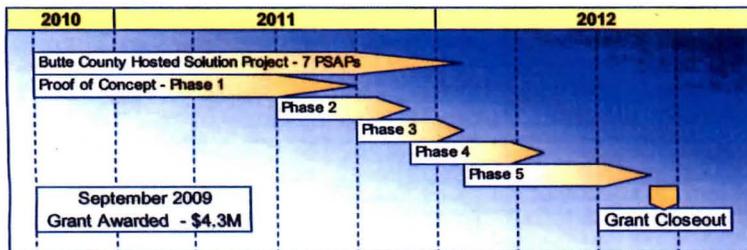
### Description:

California received a \$4.3 million dollar Federal grant from the US Department of Commerce's National Telecommunications and Information Administration (NTIA) and the US Department of Transportation's National Highway Traffic Safety Administration (NHTSA). There is an additional \$4.3 million dollars in State matching funds. The Federal grant is for the implementation and operation of Enhanced 9-1-1 Phase II services or migration to an Internet Protocol (IP) -enabled emergency network.

### Background:

An IP-enabled network has been identified by the Federal Government and private organizations, such as the National Emergency Number Association (NENA), as the foundation for Next Generation 9-1-1. IP technology will lay the groundwork necessary for expanded capabilities including advanced call routing, geographically independent call access, transferring, and back-up among and between Public Safety Answering Points (PSAPs). In addition, IP technology will enable the 9-1-1 network to support other new and non-voice technologies such as text message, images, data sets, and video in the future.

### Timeline:



### Project Goal:

To route wireless 9-1-1 calls as quickly and efficiently as possible to the correct PSAP the first time based on geographic coordinates of latitude and longitude.

### Key Information:

- The Enhanced 9-1-1 Grant Project consists of five (5) deployment phases.
- The geographical area for the grant covers Northeastern California, which encompasses thirteen (13) counties and thirty-seven (37) PSAPs.
- The thirteen (13) counties are: Butte, Colusa, Glenn, Lassen, Modoc, Plumas, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, and Yuba.
- This project will allow for the ability to route wireless calls utilizing wireless E9-1-1 Phase II location.

# NEXT STEPS



• Adopt Proposed CA NG 9-1-1 Roadmap

- Confirm with new Administration

• Convene Focus Groups of SMEs

- Telematics
- Applications
- Emergency Notification
- Security

• Conduct additional public meetings

- Opportunity to engage the public

• Complete pilot projects

- Complete Enhanced 9-1-1 Grant Project
- Complete other NG 9-1-1 Pilot Projects

• Modify Legislation & Regulation

- Enforcement & compliance authority
- NG 9-1-1 elements

• Transition to NG 9-1-1

- Implement a statewide system capable of voice, data, and video transmission from different types of communication devices into PSAPs and on to emergency responder networks.

California Next Generation 9-1-1 Focus Group Stakeholders





# WHAT ARE OTHER STATES DOING?

## Texas

- Statewide NG9-1-1 Master Plan for CSEC
  - Define the functional requirements of NG9-1-1 and the configuration of ESInets within Texas
- Regional ESInets
  - ESInets to support individual Council of Governments
  - Strategically aligned with the Master Plan to ensure that interconnectivity can be achieved
  - Ground up to support the State wide initiative
  - Areas of consideration
    - Governance
    - Policy
    - Technical and functional requirements

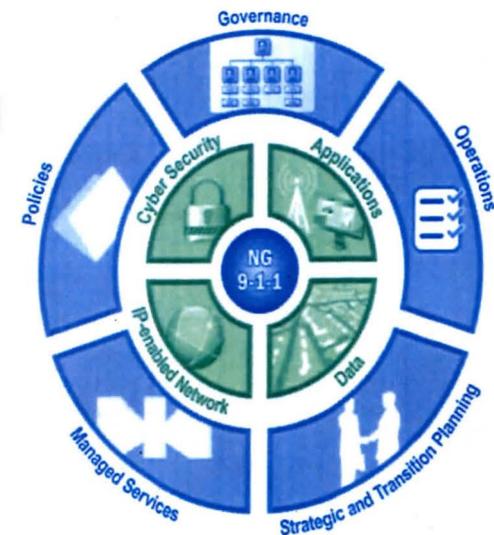
## Michigan

- Conducted research on current 9-1-1 State-wide network
  - Assessment of current Telephony, Policy, Legislation and Funding
  - Development of a long-term strategy
- Functional Requirements
  - Transition to NG9-1-1 capable network
  - Adherence to standards (i3, DOT, etc):
- Developed cost study to determine economic conditions
- Completed strategic report on the desired technical capabilities, functional requirements and cost benefit of an NG9-1-1 capable system
  - Governance
  - Funding
  - Policy
  - Technical and functional requirements

\*\*Reflects best available data at time of presentation

## SAMPLE OF ADDITIONAL STATEWIDE NG9-1-1 EFFORTS

- State of Minnesota
  - IP enabled network
- State of Tennessee
  - Integrating with the State Information Resources network to include functional requirements for 9-1-1 and IP enabled services
- State of Massachusetts
  - Starting Planning Process
- Maryland
  - Completed a similar report as Michigan working Statewide IP enabled network
- State of Colorado
  - Starting Planning Process
- State of Kansas
  - Starting Planning Process
- State of Washington
  - Completed planning, beginning pilot(s)



\*\*Reflects best available data at time of presentation

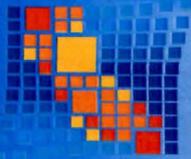
# REFERENCES

## ■ CA 9-1-1 STRATEGIC PLAN

- [http://www.cio.ca.gov/PSCD/911/pdf/911\\_Strategic\\_Plan.pdf](http://www.cio.ca.gov/PSCD/911/pdf/911_Strategic_Plan.pdf)

## ■ PROPOSED CA NG9-1-1 ROADMAP

- <http://www.cio.ca.gov/Government/Publications>
  - Proposed\_State\_of\_CA\_NG9\_1-1\_Roadmap.pdf
  - Report on Next Generation 9-1-1 in California  
Public Meetings (coming soon)



## ROUTING ON EMPIRICAL DATA (RED) PROJECT

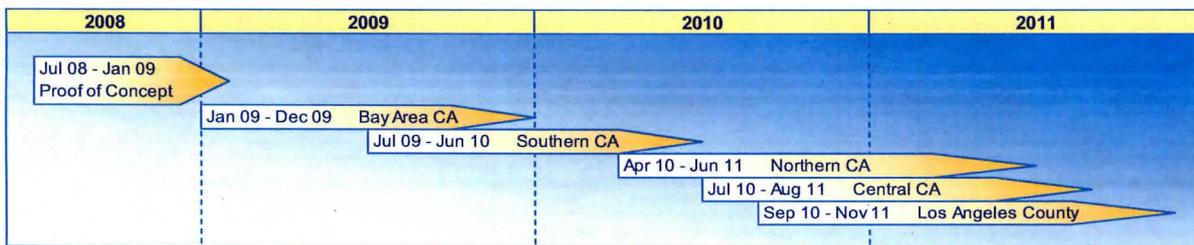
### Description:

The Routing on Empirical Data (RED) Project analyzes historical empirical call data by cell sector to determine the most efficient delivery of wireless 9-1-1 calls.

### Background:

In 2007, the CA 9-1-1 Division identified that 42.4% of the 11.6 million wireless 9-1-1 calls made in California received busy signals or failed to go through the system.

### Timeline:



### Project Goal:

Enhance the efficiency of routing wireless 9-1-1 calls to shorten emergency response time and improve the delivery of wireless 9-1-1 calls. Shaving time...saving lives!

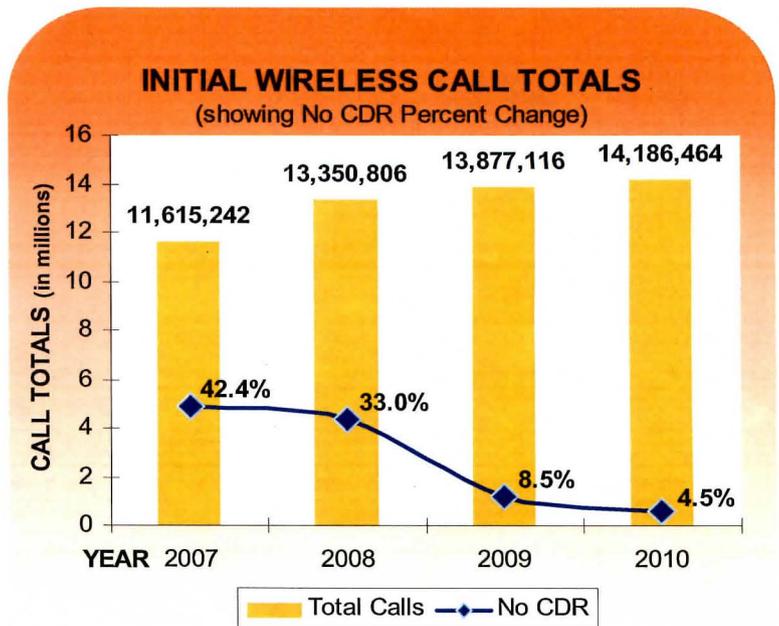
### Key Information:

In 2010, the number of initial wireless 9-1-1 calls receiving a busy signal or failing to be delivered to Public Safety Answering Points (PSAPs) for various reasons decreased from 4.9 million or 42.4% in 2007 to 639 thousand or 4.5% in 2010.

The total number of initial wireless 9-1-1 calls went from 11.6 million in 2007 to 14.2 million in 2010.

The project has assisted the California Highway Patrol (CHP) in increasing their call taking ability from 3.5 million calls in 2007 to 6.9 million calls in 2010 by reducing call transfers and sending more wireless 9-1-1 calls directly to the appropriate local PSAPs.

In 2007, local PSAPs processed 3.1 million initial wireless 9-1-1 calls and have now more than double their call volume to 6.6 million in 2010.



\*No Call Data Record (CDR) calls reflect the number of calls received by the LECs where no corresponding ALI record was found to show that the calls were answered.

Ron Lane  
Director, County of San Diego Office of Emergency Services

TESTIMONY  
Before the

Joint Legislative Committee on Emergency Services and Homeland Security

ON

The County of San Diego's Experiences with Emergency Notification and Alert Systems

August 12, 2011

**Introduction**

Thank you Chairwoman Lowenthal, and distinguished members of the Committee, for inviting me here today to provide you with information about San Diego's extensive experience with mass notification and alerting systems. I am Ron Lane, Director of the County of San Diego Office of Emergency Services.

My comments will be focused on two aspects of alert and warning. The first will be the County's experience during the 2007 firestorm. Second, I will discuss the pilot project we conducted 10 months ago with CalEMA and Sprint to test the new cell phone alert system.

**2007 Wildfires in San Diego County**

At the height of the firestorm in late October 2007, there were seven separate fires burning in San Diego County. Our community was, quite literally, burning in every direction. In total, the flames consumed nearly 369,000 acres or about 13% of the total land mass of the County of San Diego. The ability to utilize sophisticated alert and warning systems was critical to our ability to protect our residents from these fast-moving fires.

From the moment the first fire began at 9:35 a.m. on Sunday, October 21, 2007, communication with the public became one of our primary responsibilities. As the fires expanded, and we were engaged in battling 5 out-of-control fires, our ability to alert and notify residents of fire danger became a life-and-death race against time.

In the end, we evacuated approximately 515,000 people, and although not without some problems, these evacuations were conducted in an efficient and effective manner. Undoubtedly, the outstanding work of the Sheriff's department and other law enforcement agencies to get residents out of the way of these fast moving fires, saved countless lives.

Our alert process began at the incident command (we actually had five separate incident commands due to the five separate fires). The incident command teams identified

communities that were at risk and needed to be evacuated. This information was relayed to our Emergency Operations Center (EOC) and the Sheriff Department's Operations Center.

The Sheriff then conducted a mass notification to homes in the evacuation area, through one of our two mass notification systems, Reverse 911 or AlertSanDiego. In addition, Sheriff and law enforcement officers in the community were notified, so that they could go door to door, or use loudspeakers, as necessary, to make sure the community was notified of the evacuation order.

Meanwhile, in the County's EOC, the evacuation information was entered into our emergency management software, WebEOC, so that all agencies knew of the evacuation. Our Joint Information Center (JIC), located at our EOC, was immediately notified and the JIC put the evacuation notice out immediately to the media via press release. (We sent out over 200 press releases during the fire and posted real time information on the County's emergency website.)

Two-way communication with our residents during an emergency is equally important. After the 2003 Cedar Fire, the County established a partnership with 2-1-1, a private non-profit organization that, on a day-to-day basis, provides health and human service information to callers. Thanks to our partnership with the organization, San Diego County residents can now dial this simple toll-free number for current information during a disaster. 2-1-1 operators answered nearly 109,000 calls during the first week of the 2007 fires, from residents seeking information about evacuations, shelters and other fire concerns. These non-emergency calls may have otherwise clogged our emergency 911 call centers. 2-1-1 also had a liaison in our Joint Information Center, so the information was immediately relayed to the 2-1-1 operators as well.

During the 2007 fires, we conducted over 70 separate evacuation alerts through the process I just described. We made over 377,000 calls using the Reverse 911 system, and 172,000 calls using the AlertSanDiego system.

Our largest evacuations were for the communities of Fallbrook and Ramona (both communities have over 30,000 residents), where we also issued an Emergency Alert System (EAS) messages for those communities.

Both of these systems worked as designed, and to our knowledge, this was the largest use of mass notification systems ever in this country.

Clearly, the ability to call residents and tell them when and how to evacuate, individually, allowed for a more timely and efficient evacuation. We take pride in the fact that, unlike in the 2003 fires, no evacuees were trapped or killed by fire while evacuating. Additionally, since the 2007 fires, we have added the ability for residents to register their cell phones to receive AlertSanDiego messages. Currently, we have over 300,000 cell phones registered.

As a result of our extensive use of mass notification systems in 2007 and in subsequent emergencies, we have identified some observations and recommendations:

1. Mass notification systems are an invaluable tool for communities to communicate with the public during emergencies. However, it is also important to note that no agency should rely strictly on mass notification systems as their only means of communication during an emergency. It must always be used in conjunction with the other communication means, including the media and door-to-door.
2. The data in the mass notification system is only as good as the data provided by the phone companies, as part of the 911 database. Problems with the database, such as misspelled street names, will cause problems when the database is geo-coded onto the map system that is used to send the alerts. It is important to scrub the 911 database to fix as many of these complications as possible.
3. Landline phones are quickly becoming replaced by cell phones and Voice-Over-IP phone systems. Some residents do not have landline phones, only cell phones, thus are not in the 911 database. This issue should be resolved with national implementation of the Commercial Mobile Alert System (CMAS).
4. If communities lose power prior to the notice, the average home's cordless phone system is inoperative. We encourage all residents to have at least one phone that does not use electricity in their homes, so they can receive emergency calls even when they have no power.

In summary, the San Diego Association of Governments (SANDAG) calculated that 515,000 county residents received a voluntary or mandatory evacuation notice during the fires, making it the largest fire evacuation in the nation's history. The success of the overall evacuation effort is directly related to the use of our Reverse 911 and AlertSanDiego mass notification systems. There is incredible value in the ability to quickly reach large numbers of people at home, any time of day or night, to communicate risk and provide instructions.

### **Test Pilot of the Commercial Mobile Alert System (CMAS)**

While mass notification systems targeting home landline phones is currently the most effective means to alert and warn communities, the future is clearly aligned with cell phone technology. However, unlike landline phones, cell phones cannot be geo-coded and privacy laws and other factors make notification to cell phones a challenge. FEMA has been working on a national effort to develop a new cell phone alert system. The County of San Diego and Sprint with assistance from the California Emergency Management Agency partnered to test Sprint's capability to provide emergency notifications based on cell tower locations. The key aspect of this new system is that this new Personal Localized Alert Network (PLAN) does not use voice or text messages. Alerts will not have to be opened like SMS text messages, but will "pop up" on the device's screen. PLAN alerts are transmitted using a new technology that is separate and different from voice calls and SMS text messages. This new technology ensures that emergency alerts will not get stuck in highly congested user areas, which can happen with standard mobile voice and texting services.

PLAN is a new public safety system that allows customers who own an enabled mobile device to receive geographically-targeted, text-like messages alerting them of imminent threats to safety in their area. PLAN enables government officials to target emergency alerts to specific geographic areas through cell towers which pushes the information to dedicated receivers in PLAN-enabled mobile devices.

Nearly one year ago the County of San Diego's Office of Emergency Services was involved in the first major trial of this new PLAN system. We were honored to have a role in the testing of this important system and it was encouraging that we, among others, were able to contribute to the ongoing development of this technology.

For the trial, over 50 alerts were generated to 120 PLAN equipped mobile phones. We simulated large and small scale emergencies ranging from earthquake and tsunamis to hazardous materials spills and quarantines. Our trial was conducted during the fall of 2010.

There were two key focus areas of our test pilot. The first was to determine if the 90 character limit of PLAN would inhibit our ability to communicate our message. The second key focus area was to understand the effects of the overlapping cell phone tower system configuration, and how that would affect our ability to target specific locations.

### 90 Character Limit

On the 90 character text field to communicate an alert, we anticipated correctly that fitting a well scripted alert message that included the type of disaster, the area affected, a call to action, and advice to monitor the media, into such a small space would be a challenge. We were both surprised and encouraged by the fact that many of our messages fit within the limitation.

Some examples of the messages we crafted were "Wild fire in the Julian and Santa Ysabel area. Evacuate now. Monitor media for more info" and "Toxic air quality near Mission Bay. Remain indoors. Turn off AC. Monitor local news." It took some creativity to make a sensible message fit into the 90 character space, but it was possible.

During our trial, we realized that fitting AMBER alerts into the 90 character limit was very difficult. AMBER Alert calls which could include such things as victim description, suspect description, vehicle and license plate number proved to be a greater challenge.

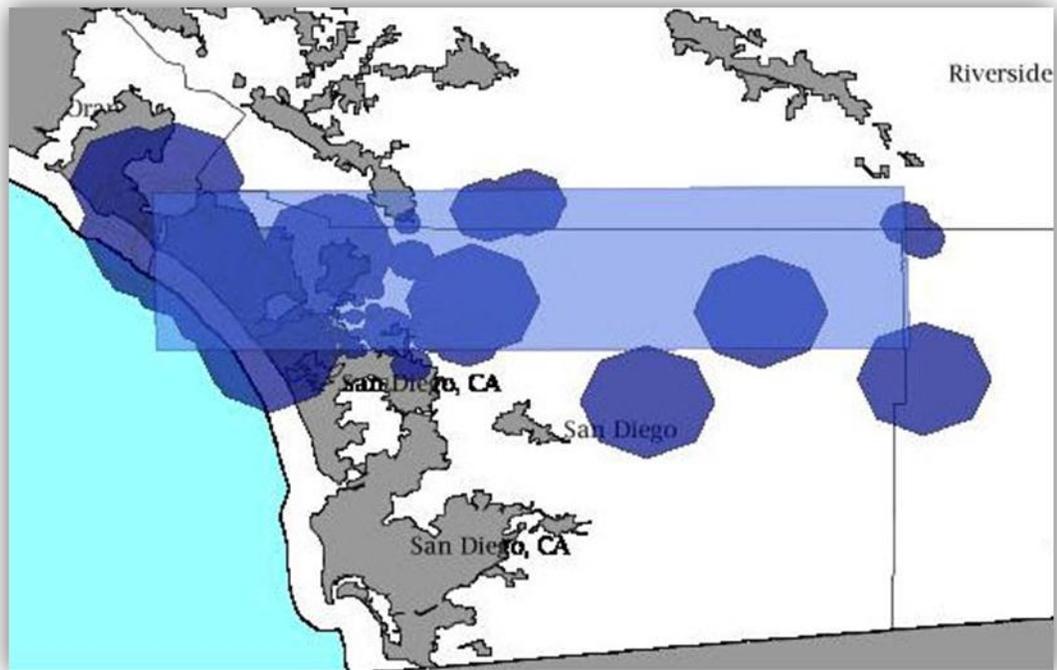
Our tests concluded that the 90 character limitation for PLAN broadcasts was viable and work well as an initial alert platform and could be used to encourage people to seek more information; but did not work if PLAN was to be the only source for detailed emergency notifications. As PLAN continues to be developed, working to increase the 90 character limit should be an early objective.

### Targeting specific locations using PLAN

A second focus of our test was to identify how specific we could target messages to specified geographic areas. As San Diego County is roughly the same size as Connecticut, our trial attempted to target a more granular level. Our best accuracy was in the East County, since cell towers there were spread-out, and we could get an accuracy of about 5 mile around a cell tower.

During our trial we discovered that the broadest targeting occurred on the coast. Due to the large concentration of overlapping cell towers and the wide coverage area of each individual tower, the notification area was large. For example, we attempted to target Petco Park, San Diego's major league baseball stadium. However, the alert resulted in cell towers activating from the border to La Jolla, and deep inland. Ultimately, cell towers in a 25 mile wide circle around the park were activated. Our trials suggested that using PLAN for spot notifications would not work as well as for larger geographic areas. We concluded that, as an emergency notification tool, PLAN targeting lies somewhere between the broad range of our Emergency Alert System and the neighborhood targeting capability of AlertSanDiego, our reverse 911 system, for geographic accuracy.

The map below shows a PLAN polygon set to alert a section of San Diego's North County. The PLAN polygon in this example is light blue and the range of the cell towers that activated are shown in dark blue.



Ultimately, we believe that the PLAN technology is an important part of any future alert and warning strategy. Clearly, cell phones are going to be the best and primary way to communicate with the public for many years to come, and it is critical for the emergency management community to quickly establish mechanisms to reach cell phones with alert and warnings.

## **Conclusion**

As a result of the 2007 wildfires, and our involvement in the development of the new cell phone alert technology, the County of San Diego has learned much about public alert and warning. I appreciate opportunities, like this one, to share and exchange ideas. Thank you for your interest and support of disaster preparation and response activities. I am happy to answer any questions that you may have.

This page is a placeholder for the following supplemental materials, which collectively represent pages 36-87 of this report.

- **Sprint “Emergency Management Overview” PowerPoint Presentation**
- **AT&T “E911 Public Safety” PowerPoint Presentation**
- **AT&T “SMS to 911” PowerPoint Presentation**
- **AT&T “Wireless Alerts & Warnings” PowerPoint Presentation**

A copy of each of these documents can be obtained by contacting the Sacramento office of

Assemblymember Bonnie Lowenthal  
P.O. Box 942849  
Room 3152  
Sacramento, CA 94249-0070  
(916) 319-2070

## **Water Reliability and Seismic Risk**

### **A Legislative Informational Hearing**

Wednesday, October 19<sup>th</sup> at 2:00pm  
Metropolitan Water District of Southern California, Board Hearing Room

On Wednesday afternoon, October 19, 2011, the Joint Legislative Committee on Emergency Management and the Assembly Select Committee on Regional Approaches to Addressing the State's Water Crisis jointly held a hearing on water reliability and seismic risk in California. This hearing focused on the risks of large-scale levee failure in the Sacramento-San Joaquin Delta (Delta), which provides water to 2/3 of Californians in both Northern and Southern California. The hearing was held at the Metropolitan Water District of Southern California and started at 2:00pm and continued until 5:00pm. Over 50 people attended the hearing.

Of the committees' combined 28 members, only the chairs, Assemblymembers Bonnie Lowenthal and Jose Solorio, and Assemblymember Mariko Yamada were able to attend the hearing.

This report records who spoke at the hearing (see the white pages), reprints the Committee staff's briefing paper (see the blue pages), and reproduces the written materials provided by the speakers and others (see the yellow pages).

The Assembly Speaker's Office of Member Services recorded both video and audio of this hearing, including comments by the legislators and other speakers. That recording is part of the Committees' official records of the October 19<sup>th</sup> hearing.

#### The Speakers

The hearing's agenda listed nine invited speakers, although one speaker was unable to appear. Two other people also spoke to the legislators about their concerns. This section captures the highlights of their comments. The appendix reprints what the speakers gave the Committees (see the yellow pages).

**Assemblymember Bonnie Lowenthal**, Chair of the Joint Legislative Committee on Emergency Management, spoke first and welcomed everyone to Los Angeles. She then proceeded to inform the audience that the importance of the hearing's topic was highlighted – at least for the Joint Committee – by Japan's 9.3 Tohoku Earthquake and corresponding tsunami earlier in the year. She noted that the Committees hoped to receive an update from the multitude of agencies working to maintain California's water supply during a massive earthquake, and learn what emergency management plans have been put into place to prevent the chaos that occurred during the collapse of the Jones Tract Levee in the Delta in 2004.

**Assemblymember Jose Solorio**, Chair of the Assembly Select Committee on Regional Approaches to Addressing the State's Water Crisis, then delivered his introductory remarks on the importance of public awareness of the connection between seismic risk and water supply.

### Overview of California's Water Delivery System and Seismic Risk

**Professor Jeffrey Mount**, with the University of California Davis' Watershed Science Center, opened the hearing with a comprehensive and compelling Power Point presentation showing an interactive map of the Delta and projected scenarios for flooding and levee collapse in the event of massive Northern California earthquake.

Dr. Mount's presentation effectively showed the gap in history between large earthquakes in California and noted that, given the timing of our last major earthquake (Northridge, 1994), the state was "very overdue" for a large-scale seismic event. He noted that 2/3 of the state's water supply would be at risk of disruption due to massive seismic activity in or near the Delta. Dr. Mount added that, in most cases, emergency managers and water professionals would worry about the damage to water facilities in general during a seismic event – not necessarily the source of that water. The Delta, however, needs greater statewide attention for seismic risk to water supply. A seismic event in this region could disrupt both the source of water and its corresponding water-delivery network. Part of this, he explained, was the use of poor materials during construction of the Delta's levees and weak foundations which make the Delta's network of levees highly prone to liquefaction and susceptible to damage. If several levees fail, then seawater would rush in to fill the vacuum, making Delta water too salty for export to Southern California.

According to Dr. Mount, the best way to combat this threat is to build a more robust levee and water delivery system in Northern California. He quickly added that emergency response efforts (like those used in the aftermath of the Jones Tract Levee failure in 2004) will not achieve these goals. Quite simply, emergency managers are concerned with saving lives and abating flooding – it is not within their mission to achieve these tasks while focusing on long-term sustainability and structure. And, in some cases, emergency management "stop-gap" efforts could exacerbate structural weaknesses within the Delta.

Dr. Mount noted that the best possible way to ensure both seismic safety and the protection of the state's water supply would be to build some kind of conveyance of water from the Sacramento River to the export pumps in the South Delta and to add-in redundancy. He believes these efforts will mitigate the seismic risk while diversifying the portfolios of California's water stakeholders. He added that Southern California is doing an excellent job of conserving water and that Northern California needed to take similar actions to mitigate future disasters.

Dr. Mount concluded by noting that those who state that there is "no problem" in the Delta have never been able to back-up that statement by any objective study.

### Assessment of Seismic Risk in the California Delta

The second presentation was delivered by **Keith Knudsen** with the United States Geological Survey's (USGS) Earthquake Science Center. Knudsen noted that he participates on a working group that meets on this subject in Northern California every five years.

Knudsen began by stating that the Hayward Fault has produced a magnitude 7.0 earthquake on an average of every 150 years. It's last such earthquake was in 1868 (143 years ago). He added that the Green Valley fault (in the same general geographic area) has produced a similarly-large earthquake roughly every 200 years.

**Scott Brandenburg** with the University of California, Los Angeles' (UCLA) Civil and Environmental Engineering Department, followed Knudsen. He outlined the experiments currently being conducted by a team of engineers at UCLA in the Delta with an earthquake simulator that they have designed. The team recently simulated a 6.0 earthquake in the Delta on an isolated mound of peat (simulating a Delta levee) to achieve a ground-level strength that is similar to that of liquefied sand. While he was unable to share any comprehensive results yet with the committees, early indications seem to show little damage under the stresses of this top-down shaking machine. Brandenburg, however, cautioned that results were preliminary and did not necessarily reflect all conditions in the Delta. His team was hoping to re-test their experiment in May of 2012 using a new test condition – that of liquefied peat (which would more-accurately portray the conditions of the Delta).

The final presentation in the Seismic Risk panel was delivered by **Scott Neudeck**, an engineer with the Stockton-based firm of Kjeldsen, Sinnock & Neudeck. Neudeck began by acknowledging the experiments of Brandenburg's team using peat and noting that his firm has recommended the construction of "set-back" levees that will account for rises in sea-level, using mineral-type soils shown to be seepage resistant (like clay).

Neudeck stated that he does not believe that earthquakes are a high-risk in the Delta. He believes the higher risk is that associated with a massive flood. He cited compliance with federal Public Law 84-99 (Army Corps of Engineers levee standards) as a way to ensure Delta levee stability. Specifically, Neudeck noted that PL 84-99 states that levees should be 1.5 feet above the 100-year flood level in their area. With this in mind, his firm has estimated that \$600 million to \$1.2 billion in additional funds are needed in the Delta to bring the levees up to flood standards. This is complicated by the fact that only about \$30-\$40 million exists for these sorts of efforts currently as part of the levee subvention monies contained in 2006's statewide water bond package. He added that the local governments in the Delta are doing their fair share to contribute to these efforts.

**Assemblymember Lowenthal** added that she is concerned about the use of equipment and materials during the type of flood described by Neudeck. She noted that this type of resource-sharing needs to be coordinated by all possible stakeholders, including the Metropolitan Water District (MWD) and that plans should be developed with everyone in agreement. The response to floods or earthquakes should always be regional in nature and shouldn't lie solely on the backs of the cities and towns directly impacted.

#### Recent State Action Addressing Seismic Risk in the Delta

**Mike Dayton**, the Acting Secretary for the California Emergency Management Agency (CalEMA), was the first presenter in this third panel. He began his comments by urging legislators and the public not to underestimate the seismic risk in the Delta.

The white paper accompanying this hearing questioned the progress of recommendations included in Senate Bill 27 (2008, Simitian). In regards to this item, Acting Secretary Dayton responded that they will be completed by the end of the month. He added that they will include the following proposals:

- 1) The implementation of a unified command structure in the Delta to adequately and efficiently address emergencies;
- 2) The establishment of a multi-agency task force to further examine emergency management issues;

- 3) The creation of a Delta-specific multi-hazards catastrophic plan that will cover evacuation and interoperability and communications procedures (Dayton suggested that CalEMA hoped to finalize this plan within the next year and then begin training and exercising using its principals regularly); and
- 4) A justification for increased funding.

**Gary Bardini**, Deputy Director for the California Department of Water Resources (DWR) presented next. He explained that the Department operates under the philosophy that “what can go wrong, will go wrong.” He also added that DWR local assistance grants will be available to local governments in the following few weeks in an effort to encourage cities and counties to begin thinking about their emergency response and planning processes in regards to the Delta.

**Ron Baldwin**, the retired director of the San Joaquin County Office of Emergency Services (OES) was the final presenter on this panel. He explained his philosophy that any question that merits a response of “I don’t know” is a good basis for contingency planning. In his experience as Director of San Joaquin’s OES, he noted that they had limited resources with which to work – quite simply, there were never enough resources for everything. With this in mind, the Office and its officials “play the odds” and concentrate on those things that will help the most regardless of risk. He concluded by saying that, in his opinion, the Delta Protection Council is trying to unify everything and with the DWR grants moving forward, the situation is beginning to look up – getting the local agencies together on this issue is “half the battle.”

#### Looking to the Future: What Now?

**Debra Mann** with MWD began this panel by explaining that MWD must operate with business continuity in mind. She noted that disasters don’t occur as modeled; typically, they are much more extreme. In this vein, MWD is taking action to manage the most extreme earthquakes. The agency has spent \$123 million in the past 10 years to fortify their system. This is under the absolute certainty on MWD’s part that a maximum-level earthquake combined with the salinity of the San Francisco Bay’s water, will negatively affect the reliability of water in Southern California.

On the disaster response front, MWD expects to use both rocks and barges to fortify an emergency freshwater “pathway” should levees collapse. MWD is also looking to conveyance alignment as a solution.

Mann added that the bottom line is that MWD would experience a loss of upwards of \$40 billion and 230,000 jobs with a major catastrophe along the lines of what has been discussed. The agency believes that by implementing a fee of \$3 per month per household, they will be able to fund the solutions to be able to maintain their portion of the state’s water supply. Under this proposal, MWD would invest in this infrastructure ahead of time and then ask their beneficiaries to pay the costs over time.

Mann did note, however, that one of their members – the San Diego County Water Authority – has questioned their ability to pay for these costs because of ongoing litigation on their end regarding their water rate structure. That said, 26 MWD member agencies do support moving forward, and MWD as an agency believes they cannot wait for a massive failure to occur.

**Phil Isenberg**, Chair of the Delta Stewardship Council (DSC), concluded the hearing's presentations. He began by stating that in his experience, the committees would benefit with some suggestions. He noted that he expected the DSC's final report and plan to be released within the next year, and that this report would include a full list of detailed legislative suggestions. That said, he did offer five to the committees:

- 1) Narrow the focus. He explained to the committees that the Bay Delta Conservation Plan should be finalized in 2013 and that construction would not be finished until 2015 at the earliest. At this point, most current legislators would no longer be in office as a result of term limits. Isenberg suggested asking a simpler question, "What can we do now?"
- 2) Reduce the risks by:
  - a) Discouraging urban development. Isenberg suggested the legislative encouragement of setback levees right away and the support of flood plains protection. He added, however, that after prioritizing these policies, the legislature must work diligently to resist the many different people or agencies who would then ask for exceptions.
  - b) Protecting the existing water system. Isenberg noted that they are going to ask locals what their plans are for the next 15 years. The Legislature should similarly require agencies to have up-to-date catastrophic emergency plans and to update those plans every three years.
  - c) Encouraging DWR to accelerate funds for maintenance and repair of the State Water Project. Isenberg believes they can double or triple what they are currently slated to do over the next five years. This will require no General Fund money as it has already been provided and earmarked via bond measures.
- 3) Ask the owners of energy infrastructure crossing the Delta to pay their fair share. Isenberg noted that currently, owners are under no legal obligation to pay one dime. That said, the Public Utilities Commission has the authority to require owners to pay their fair share, and the Legislature should encourage this action.
- 4) Continue the Levee Subvention Program as a discretionary program, not a mandatory program. He believes that there may be some liability issues accompanying this proposal but believes that it is important as the Levee Subvention Program is currently voluntary – and that making it mandatory would turn it into an entitlement.
- 5) Create a five Delta county emergency response authority with fee assessment capabilities. Isenberg underscored that this type of authority would be ineffective without the ability to levy fees. He added that the reclamation districts and Boards of Supervisors throughout the Delta will all have "issues" with this proposal, and that someone in the Legislature with extensive knowledge of local government law would be needed to accomplish this task. That said, Isenberg noted that Ron Baldwin (prior presenter) was the only person able to make San Joaquin County prepare a Delta-specific emergency plan and that it is now the only county to have such a plan in place. This is unacceptable and should be a major priority of the new agency he proposes.

#### Public Comment

**Jerry Sprague**, a resident of the Los Angeles area informed the committees that his company has developed a flexible emergency fabric pipeline that, he believes, could be extremely useful in the Delta during a catastrophic disaster. He noted that he has submitted a study to both DWR and MWD and has support from Ray Seed, a professor of engineering at the University of California, Berkeley.

**Martin Radosevich**, a staff member with Senator Rubio's office, informed the committees that he was in attendance on behalf of Senator Rubio who could not be there but remains very concerned about this issue.

#### Legislative Solutions/Follow-Up Items

- 1) The state's water stakeholders should coordinate, in advance, resource-sharing and the use of equipment and materials during a disaster, particularly within the Delta.
- 2) A unified command structure should be implemented within in the Delta region to adequately and efficiently address emergencies.
- 3) A multi-agency task force should be established within the Delta region to further examine emergency management issues.
- 4) A Delta-specific multi-hazards catastrophic plan should be created to detail evacuation and interoperability and communications procedures during an incident.
- 5) The Legislature should encourage the building of setback levees and flood plains protection within the Delta.
- 6) The Legislature should require agencies within the Delta to have up-to-date catastrophic emergency plans and to update those plans every three years. DWR local assistance monies could be used to further this activity.
- 7) The Legislature could encourage DWR to accelerate funds for maintenance and repair of the State Water Project. This will require no General Fund money as it has already been provided and earmarked via bond measures.
- 8) The Legislature could encourage the California Public Utilities Commission to ask the owners of energy infrastructure crossing the Delta to pay their fair share of maintenance and upgrades.
- 9) The Legislature should continue the Levee Subvention Program as a discretionary program, not a mandatory program.
- 10) The Legislature could create a five Delta county emergency response authority with fee assessment capabilities.



## **Joint Legislative Committee on Emergency Management**

### **Assembly Select Committee on Regional Approaches to Addressing the State's Water Crisis**

#### **Informational Hearing: *Water Reliability and Seismic Risk***

**October 19, 2011 – 2 p.m.  
Metropolitan Water District of Southern California  
700 North Alameda, Los Angeles, California**

- I. Welcome and Introductions
- II. Overview of California Water Delivery System and Seismic Risk
  - Professor Jeff Mount, UC Davis, Watershed Science Center
- III. Assessment of Seismic Risk in California Delta
  - Keith Knudsen
    - United States Geological Survey, Earthquake Science Center
  - Scott Brandenburg and Jonathan Stewart
    - UCLA, Civil and Environmental Engineering Department
  - Christopher Neudeck
    - Kjeldsen, Sinnock & Neudeck (Stockton)
- IV. Recent State Action Addressing Seismic Risk in the Delta
  - Mike Dayton
    - California Emergency Management Agency
  - Gary Bardini
    - California Department of Water Resources
  - Ron Baldwin
    - San Joaquin County Office of Emergency Services (Retired)
- V. Looking to the Future: What Now?
  - Debra Man
    - Metropolitan Water District of Southern California
  - Phil Isenberg
    - Delta Stewardship Council
- VI. Public Comment
- VII. Closing Remarks



## **Joint Legislative Committee on Emergency Management**

### **Assembly Select Committee on Regional Approaches to Addressing the State's Water Crisis**

#### **Informational Hearing: *Water Reliability and Seismic Risk***

**October 19, 2011 – 2 p.m.**

#### **Background Paper**

### **I. Introduction**

California has a long history of experience with earthquakes and long distance, water supply projects, but they are not often connected, at least in the view of the public. Yet, that connection is very real, and presents a substantial challenge in ensuring water supply reliability, especially for Southern California, if a major earthquake should occur. Most of Southern California's water canals cross the San Andreas Fault, where an earthquake could take one or more canals out of service. Although inconvenient, water agencies could move to alternative conveyance facilities, and rapid repair work could possibly return those canals to service within days or weeks.

That said, the Sacramento-San Joaquin Delta (Delta) presents a more serious seismic challenge. The Delta forms the heart of the California water system, by transferring fresh water from Northern California to the San Francisco Bay Area, San Joaquin Valley and Southern California. In fact, this region receives about one-third of its water supply from the Delta via the State Water Project. The Delta is a labyrinth of islands and water channels created by levees built over the last 150 years. Those levees, which endure under a range of conditions, provide a critical – and tenuous – link to Southern California's water supply.

It is a very real possibility that, after a major earthquake in or near the Delta, multiple levees and the water conveyance system that relies on them could fail. Recovery of these levees and the Delta would be much more complicated than canal repairs. It could take years to complete levee repairs – or build an alternative conveyance system (*e.g.* pipeline or canal) – and fully restore water exports to Southern California.

Since one Delta levee failed on a clear June day in 2004, the State has focused more attention on the water supply risks of Delta levee failures. That 2004 levee break at Upper Jones Tract caused the state and federal water projects to reduce exports for weeks, requiring Southern California to rely on water reserves in storage. The State spent \$45 million to repair the levee and pump out the island.

Hurricane Katrina's destruction of New Orleans' levees created new concerns over Delta levees, especially after estimates of a 62% chance that the Delta region would suffer a serious earthquake in the next 30 years. The collapse of the Delta ecosystem put water and the environment at the center of legislative debate in 2009. The Legislature adopted a new plan for the Delta that addressed, in part, Delta levee stability. Despite all the State's efforts to address Delta water supply risks, the seismic risk – and an uncertain emergency response – remains.

## II. Southern California Water Supply System

With a Mediterranean climate, Southern California's development has depended on development of its water supply. Spanish settlers located the City of Los Angeles on its namesake river. As the region grew, farmers and developers drew water from other streams and from groundwater. A significant part of Southern California still relies on groundwater, at least to some extent. Native supplies, however, are not sufficient to support a large urban community. Groundwater managers therefore rely on imports to recharge groundwater aquifers.

This limitation on water supply led early visionary leaders to search for water far from Los Angeles. The City of Los Angeles went to the Owens Valley, starting deliveries in 1913. In 1928, 13 cities created the Metropolitan Water District of Southern California (MWD), to deliver water from the Colorado River via the Colorado River Aqueduct, which began deliveries in 1941. In 1960, MWD signed a contract with the California Department of Water Resources (DWR) to deliver more than half of the water from the State Water Project (SWP), which stores water in Lake Oroville on the Feather River and then moves it south, through the Delta, to export pumps and the California Aqueduct to Southern California.



All of these water import systems cross seismic faults, and may be subject to interruption due to an earthquake. Those interruptions, however, may arise out of isolated breaks in the conveyance system, which may be repaired relatively quickly. The most vulnerable to a long-term outage

would be the SWP, which relies on water conveyance through the Delta. The Delta is subject to collapse of multiple levees. Without the levees, the streams that convey SWP water south disappear. A multi-levee collapse in the Delta may cause an interruption in Southern California water supply of many months or even years. This hearing therefore focuses on the seismic risks to water supply flowing through the Delta.

### **III. The Sacramento San Joaquin Delta**

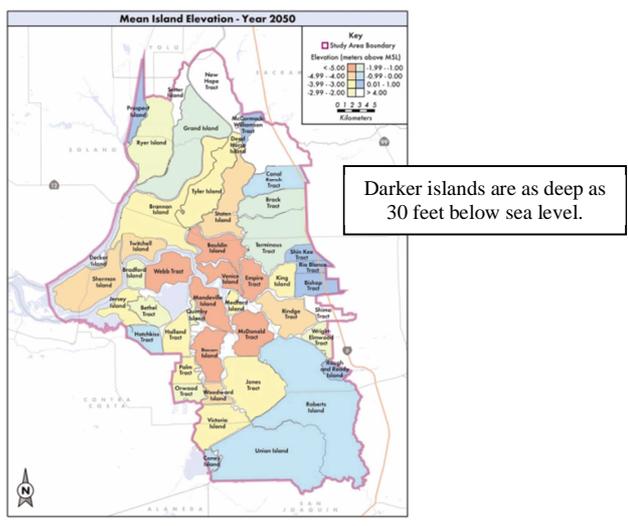
The Delta ecosystem is the most valuable estuary ecosystem on the west coast of North or South America, and a natural resource of hemispheric importance. Created by the confluence of the Sacramento and San Joaquin rivers as they flow into San Francisco Bay from the north and south, respectively, the estuary is a maze of tributaries, sloughs, and islands. It contains the largest brackish estuarine marsh on the West Coast. The Delta ecosystem, the largest wetland habitat in the western United States, supports more than 750 wildlife species and more than 120 species of fish, as well as one of the state's largest commercial and recreational fisheries. The Delta estuary also provides migration corridors for two-thirds of the state's salmon and nearly half of the waterfowl and shorebirds along the Pacific flyway.

The Delta also serves as the heart and critical crossroad of California's water supply and delivery structure. California's precipitation falls predominantly north and upstream of the Delta, whereas much of the state's urban and agricultural water uses occur south of the Delta. The state's two major water projects, the federal Central Valley Project (CVP) and California's State Water Project (SWP), store water in major reservoirs upstream of the Delta, convey water through the Delta, and export the Delta's water south from project pumps in the south Delta. As the water flows from the Sierra toward the Delta, cities and farms draw water from the system.

#### **A. Delta's Origin and Development: Shallow Wetland to Deep, Leveed Islands**

The Delta developed at the confluence of California's two largest rivers the Sacramento and the San Joaquin, as sediment came downstream over thousands of years and was trapped behind the Carquinez Strait leading to San Francisco Bay. When Americans arrived during the Gold Rush, they found a "swamp" that they traversed on their way to Sacramento. This large wetland was shallow, and during the summer, some islands would emerge, protected by small natural levees. Two weeks after California became a state, Congress passed the "Swamp Lands Act" to transfer certain swamplands to the states, including the Everglades to Florida and the Delta to California. A decade later, the State Legislature passed legislation to allow anyone to buy Delta lands for \$1 per acre, provided they built a levee around the land to keep it dry year around. That began the development of the Delta as we know it today – islands surrounded by levees with small streams, called sloughs, between the islands. In the 20<sup>th</sup> Century, landowners formed "reclamation districts" to maintain the levees around each island, in an effort to prevent levee failures.

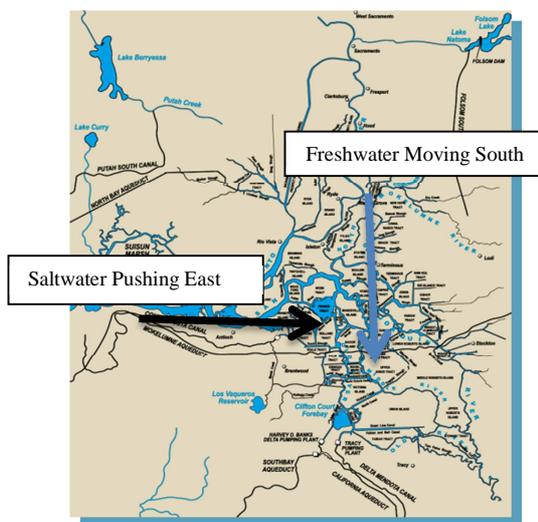
In the 150 years since Delta levees and their islands began developing, Delta islands have suffered substantial subsidence. The natural peat, resulting from thousands of years of deposits of organic material, oxidized and compacted when plowed, leading to some islands lying as much as 30 feet below the adjacent water level. This 24/7 water pressure on the levees make the levees more vulnerable to failure. The map on the next page illustrates the depth of Delta lands below sea-level.



**B. Delta Water Supply Infrastructure: Sacramento River Water Exports**

The design of the Delta began to change more dramatically with the Legislature’s adoption of the California Water Plan in 1933. The federal CVP, which Congress authorized in 1935, moved water from large reservoirs in the Sacramento River basin south through the Delta to export pumps for users in the San Joaquin Valley. San Joaquin River water was shipped south to the Kern and Tulare basins, where it does not return to the Delta. Then the federal Bureau of Reclamation built the “Delta Cross-Channel” (DCC), which puts fresh Sacramento River water into the eastern part of the Delta so it can flow toward the Delta export pumps and not out to the ocean.

These developments formed, in effect, a “hydraulic barrier” to saltwater intrusion from San Francisco Bay. Instead of fluctuating freshwater flows during the annual winter/summer cycle, fresh Sacramento River water now traveled south consistently, even in the middle of the summer. The narrow stream channels created by Delta levees now guided water through the Central Delta and South Delta to the CVP and SWP water export pumps. The saltwater would not break through that barrier in most years, allowing farmers in the Central Delta and the state and federal water projects to enjoy freshwater year-around. Those Delta levees became a critical part of California’s water infrastructure.



### **C. Wake-up Call on Delta Emergency Response: Collapse of Jones Tract**

The debate over CVP/SWP reliance on Delta levees emerged more forcefully on a beautiful summer day in June 2004, with the sudden and unexpected collapse of the levee surrounding Upper Jones Tract (a Delta island). The Delta debate, especially during consideration of the proposed Peripheral Canal in the 1970s and 1980s, had long included discussion about the importance of Delta levees to the state and federal water projects. At that time, however, the debate about seismic risks did not arise, as the advocacy for the Peripheral Canal focused on expanding exports from the Delta. The Peripheral Canal would allow conveyance of more water more directly to the export pumps, without the circuitous movement through sloughs and channels and across the San Joaquin River. The CVP and SWP would not have to rely on levees that could fail during Delta flood conditions.

The Jones Tract levee failure, however, raised a different concern – levee collapse during warm summer months when conveyance was most critical. Over the more than two decades since the Peripheral Canal debate, the Delta had changed. Due to subsidence, Central Delta islands had become 3-4 feet deeper. The Delta reclamation districts had improved some levees, but the cause of their failure could be unpredictable. Even the best built levees could fail unexpectedly, due to causes such as animal burrowing or unrecognized levee seepage. When Jones Tract failed, neither the local reclamation district nor the State was prepared for the emergency. The federal Army Corps of Engineers provided some assistance by fighting the immediate risk of flooding nearby islands, but it had no responsibility for repairing the levee and recovering the island. Most Delta levees are not federal levees and fail to meet federal levee standards that might allow some federal assistance.

When the Jones Tract levee collapsed, DWR planned to only cap the breach and then determine whether there were sufficient State interests in rebuilding the levee and restoring the island. Former Governor Arnold Schwarzenegger, however, arrived by helicopter and, after hearing the pleas of local landowners, decided that the State would use State taxpayer funds to fix the levee. The total costs of restoring the island eventually totaled \$45 million, for an island whose land value was approximately \$42 million. The island included a state highway, the Burlington Northern Santa Fe railroad tracks, and the East Bay MUD water aqueduct. Following the State's repair of the levee, multiple parties, including those responsible for maintaining the levee, sued the State to recover their costs, alleging inadequate State oversight of local levee maintenance. This conflict over who pays for Delta levee failures continues today, simultaneous with debate over how to prepare for future levee failures.

## **IV. Seismic Risks to Water Supply from the Delta**

The seismic risks in the Delta remain the most significant disaster risk to Southern California water supply reliability. While all water import conveyance facilities cross earthquake faults, a single failure at some point along a canal may be fixed relatively quickly. Southern California also enjoys multiple water import sources, which would allow for redundant systems to temporarily substitute water supply or alternative conveyance structures, when one system fails. Multiple levee failures in the Delta, however, could require months or even years to restore the water quality and conveyance system to deliver water to the San Francisco Bay Area, San Joaquin Valley and Southern California. Or, the current Delta water conveyance system may never be restored and the water projects would need to build an alternative water conveyance facility that does not rely on Delta levees and channels.

## A. Seismic Risks in the Delta

The Delta suffers from multiple seismic risks. There is at least one small fault in the Delta, but the more significant risks are the major faults nearby. Faults in the East Bay pose the greatest risk to the Delta, including the Hayward, Calaveras, Greenville, Concord-Green Valley and Mount Diablo faults. In January 2011, the United States Geological Survey (USGS) gave a presentation on Delta earthquake risks to the Delta Stewardship Council (Council) suggesting that the Delta earthquake risk may be more significant than previously estimated. In a follow-up letter, USGS agreed with DWR conclusions that seismic hazard in the Delta is “high.” The letter from USGS explained the uncertainty:

*[T]here remains considerable uncertainty in any characterization of hazards due to our community’s limited understanding of: (1) the potential seismic sources in the East Bay and beneath the Delta; (2) the effects that peat and soft soils will have on earthquake energy as it is transmitted to the ground surface; and (3) the deeper three-dimensional geology of this part of the Central Valley and the presence of thick, soft basin materials.*

After hearing several presentations on seismic risks to Delta levees, the Council’s latest draft Delta Plan concludes: “Levee failures and flooding can **and will** place human life and property in danger, and can have potentially significant implications for the State’s water supply and infrastructure and the health of the Delta ecosystem” (emphasis added).

### 1. Implications of Delta Earthquake Risks

The Council’s conclusion only hints at the substantial implications of a Delta earthquake and multiple levee failures. The damage would be broad, deep and multi-faceted. Because of the depth below water level of the Central Delta levees, DWR projects many of the levee failures in that part of the Delta, which is where Sacramento River water flows toward the South Delta export pumps. Failures in that region would affect multiple resources in the Delta:

- *Water Quality.* Inundation of these deep islands would act like a vacuum, drawing salt water from San Francisco Bay deep into the Delta. A west-east saltwater flow would replace the north-south “hydraulic barrier.” Substantial upstream reservoir releases of freshwater could push the saltwater back out toward the Golden Gate, but those massive supplies may not be available. The depth of these islands – and therefore the water inundating them – also may create a sump for contaminants coming downstream from the San Joaquin and Sacramento Rivers. These contaminants, from upstream urban and agricultural runoff, would flow toward the Delta and settle at the bottom of a deep “inland sea.” Tidal action would have less effect on moving the contaminants out to the ocean.
- *Water Supply.* The collapse of levees and inundation of saltwater would immediately cut off water project exports. First, the saline water would not meet water quality standards required for export. When Jones Tract failed, higher salinity forced the federal and state water projects to substantially reduce export pumping from the Delta. Second, upstream federal/state project supplies of freshwater would be needed for pushing the saltwater back out of the Delta, so the projects may not have sufficient additional storage. Finally, the narrow channels that move Sacramento River water relatively quickly to the South Delta export pumps would be gone, making it difficult for the projects to move upstream reservoir water toward the Delta pumps.
- *Delta Ecosystem.* With a multiple levee failure, the Delta ecosystem would change in an instant. The mix of fresh and salt water typical of a riverine estuary would be replaced by a deep inland sea. Riverine habitat along the many stream channels would disappear.

- *Delta Agriculture.* Delta agriculture on the subsided and then-inundated islands would cease. According to a recent Delta Protection Commission report, agriculture in the five Delta counties leads to about \$1 billion annually in total economic output. The cost to restore multiple islands would be substantial, possibly not justifying restoration of agricultural lands. The saltwater inundation, for example, may be difficult to eliminate from the soils, even if the levees were repaired and the salt water pumped out.
- *Infrastructure.* The Delta supports more than water conveyance and an ecosystem. A wide range of infrastructure crosses the Delta – electrical power lines, natural gas pipelines, railroads, and state highways. All of these assets would be at risk in a Delta collapse.

## 2. Debate Regarding Responsibility for Delta Levees

Debate as to the responsibility for maintaining and rebuilding Delta levees has continued for decades. A 2003 ruling in the *Paterno v. State of California* lawsuit held that the State had liability for a breach on an upstream state-federal flood control project levee does not apply to levees in the Delta, where the State has never accepted responsibility for levee maintenance and operation. Others argue, however, that because the State relies on those levees to convey SWP water to its pumps, it has a responsibility to protect the Delta levee system for conveyance purposes.

Delta property rights were established based on the landowner's responsibility to build and maintain levees to "reclaim" the land from the swamp and keep it dry. A state appellate court held that a landowner whose levees failed at Frank's Tract lost his property rights to the State's public trust interests. If he rebuilt his levees, he could reclaim his property rights, but in the meantime, he had no right to exclude fisherman in boats from the water covering "his" island.

While Delta land ownership remains contingent on the landowners (or their reclamation district) maintaining the levees surrounding their land, the State has provided funding for Delta levee maintenance since 1983. The Department of Water Resources (DWR) operates two programs to help with maintaining Delta levees – the Delta Levee Subventions Program and the Special Projects Program. DWR provides financial "subventions" to Delta landowners and their reclamation districts to maintain their levees. DWR funds its own Delta levee "special projects" to protect certain state interests, including the SWP interest to move water through the Delta. While Delta levees failed on many occasions in the 20<sup>th</sup> Century, the levee failures have been far less since the State started providing levee maintenance funding.

As shown in the Jones Tract litigation, however, this funding has led some to claim that the State has responsibility for maintaining all Delta levees. The argument is that the State is liable for failing to oversee how the Delta landowners use State money to invest in maintaining their levees. Others have suggested that once the State started investing in Delta levees, it could no longer pull out that investment or deny any landowner funding for its levee by applying the State's own priorities for limited Delta levee funding. Senate Bill 1 X7 (Simitian) of the 2009 Delta/Water Legislation, however, requires that the new Delta Plan, currently under development by the Delta Stewardship Council, recommend priorities for State investments in Delta levees, and explicitly rejected any suggestion that Delta landowners' property rights include the right to State funding. The debate about State responsibility nevertheless continues.

## **V. State Emergency Management Programs for the Delta**

Since the Jones Tract failure – and more importantly Hurricane Katrina – the State has paid increasing attention to emergency response to levee failure in the Delta. A California Senate subcommittee on the Delta, chaired by then-Senator Mike Machado, held the first Delta emergency response hearing in October 2005, just after Hurricane Katrina. At that hearing, DWR unveiled its projected scenario of multiple levee failure. Then-San Joaquin County emergency services director, Ron Baldwin, testified that the Delta Counties, who are responsible for the first level of emergency response, had not prepared a Delta emergency response plan. The Counties had considered various emergency response scenarios for multiple hazards for their counties generally, but had not focused on the risks of multiple levee failures in the Delta. These County plans fit within the framework of the larger State Emergency Management System.

### **A. State Emergency Management System**

The Standardized Emergency Management System (SEMS), developed as a result of the 1991 East Bay Hills Fire, is California’s system for managing emergencies. SEMS provides a consistent template to enable State, tribal and local governments, nongovernmental organizations, and the private sector to protect against, respond to, and recover from all emergencies and disasters regardless of scope, cause, location, or complexity. It is a core set of doctrines, concepts, principles, terminology, and organizational processes that enables effective, efficient, and collaborative incident management. This framework forms the substructure for interoperability and enables diverse agencies and organizations to conduct coordinated and efficient incident response operations.

All state government agencies must use SEMS when responding to multi-jurisdictional or multi-agency emergencies. All local government agencies must use SEMS in multi-jurisdictional or multi-agency emergency responses to be eligible for state reimbursement of response-related personnel costs.

Similarly, the National Incident Management System (NIMS) was established via Homeland Security Presidential Directive in 2004 to establish a systematic, proactive approach by which to guide governments and agencies (including the federal government) at all levels to work seamlessly during a disaster. Together, SEMS and NIMS provide the basis of California’s Emergency Response System.

That said, incidents typically begin and end locally, and are managed on a daily basis at the lowest possible geographical, organizational, and jurisdictional level. For this reason, every county is responsible for the development of its own Emergency Operations Plan, utilizing SEMS and NIMS, which takes into account each local government’s resources and unique hazards and terrain. Should an earthquake or other such disaster occur in the Delta, it is expected that first responders will adhere to SEMS and NIMS and respond accordingly – thereby seeking regional, state and federal assistance as needed.

### **B. Senate Bill 27 (Simitian/2008) & Cal EMA**

In 2006, legislation to address the Delta-specific risk of levee failure impacting water supply began developing. Assembly Bill 1200 (Laird) required DWR to evaluate the potential impacts on water supplies from any combination of risks, including earthquakes. The bill also required DWR to report to the Legislature on a comparison of options for addressing those risks. That report, which DWR already had proposed to prepare, was intended to assess the risk of levee failures and provide options for minimizing those risks. DWR named the program the “Delta

Risk Management Strategy” (DRMS or “Dreams”). AB 1200 was the first of several bills to address the mounting crisis in the Delta. The risk of Delta levee failure and emergency response to such failure continued to draw the attention of the Legislature in the years that followed.

In response specifically to the seismic risk of mass levee failure in the Delta, Senator Simitian introduced legislation to develop a Delta emergency response plan in 2008. SB 27 (Simitian) originally proposed to require the Delta Protection Commission (DPC) to develop a unified Delta emergency response plan. Interested agencies and stakeholders in the Delta argued over who should lead development of the plan. The Delta Counties and DWR had opposing ideas about what the emergency might be – an occasional levee breach or a mass failure. DWR did not want to take over the counties’ duty to provide the first response to emergencies. The Governor’s Office of Emergency Services (OES) indicated it relied on DWR for Delta emergency response.

DPC staff tried to manage all the Delta interests, but ultimately the bill put responsibility to lead a task force with OES. [Later that same year, OES and the Office of Homeland Security became the California Emergency Management Agency (CalEMA), as a result of Assembly Bill 38 (Nava, 2008)]. Water Code Section 12994.5 requires CalEMA to submit the report by the beginning of this year. Subsequent legislation maintained the 2011 deadline, but allowed the task force to continue in operation until 2013 unless the report was submitted. According to other State agencies, CalEMA completed the report earlier this year, but has not released the report publicly. It is unclear why CalEMA has refused to release the report, although recent reports indicate that the acting CalEMA secretary has asked to reconvene the task force.

### **C. Department of Water Resources**

While CalEMA chaired the “Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force” and developed its report, DWR continued working on DRMS as required by AB 1200. DRMS provides information on the risk and advises on strategies to address those risks. DWR issued Phase 1 of DRMS in February 2009, which received substantial criticism as to its assessment of the risk, particularly from in-Delta interests. DWR has continued working on its DRMS study, with a worldwide consulting firm, URS, taking the lead.

In 2006, voters approved general obligation bonds for flood protection, including Delta emergency preparedness. DWR used those bond funds, as well as funding from its SWP contractors (*e.g.* MWD), to acquire and store emergency response supplies, such as rock to repair failed Delta levees. Over the years, there has been some dispute as to who can access those supplies in case of a local emergency.

DWR also is currently developing an emergency response plan for Delta floods. DWR expects to complete a “Delta Flood Emergency Preparedness, Response and Recovery Program” by March 2012. In recent months, DWR has reported its progress on this Delta emergency response plan to the Delta Stewardship Council. DWR’s presentation in September suggested that at least some who work on the flood emergency plan may have little knowledge of SWP operations and how water supply operations would be affected. The flood emergency response planning seemed disconnected to water supply issues.

### **D. Delta Protection Commission and the Delta Counties**

The Delta Counties also have continued their efforts to prepare for a Delta emergency. The 2009 Delta/Water Legislation reformed the Delta Protection Commission (DPC) to make it more clearly the voice of the Delta Counties. DPC hired former Senator Mike Machado as its Executive Officer. State bond also provided funding for the Delta Counties to acquire a unified

emergency communication system for the Delta. In the last year, DPC has made some effort to help lead all local agencies in the Delta in developing a coordinated emergency response plan. San Joaquin County's former director of emergency services, Ron Baldwin, retired in 2011 and is working with the DPC to coordinate a unified application to DWR for federal FEMA funding for a regional emergency response plan.

#### **E. Delta Stewardship Council "Delta Plan"**

The 2009 Delta/Water Legislation addressed several issues related to Delta levee investment and emergency response. The "Sacramento-San Joaquin Delta Reform Act of 2009," in SB 1 X7 (Simitian), Cal. Water Code § 85000 *et seq.*, addressed a number of issues related to earthquake and levee risks in the Delta:

- Stated a legislative finding that Delta "property ownership, and the exercise of associated rights, continue to depend on the landowners' maintenance of those nonproject levees and do not include any right to state funding of levee maintenance or repair."
- Set a State policy objective of reducing risks to people, property, and state interests in the Delta by effective emergency preparedness, appropriate land uses, and investments in flood protection.
- Required the Delta Plan, which is due at the end of this year, to "attempt to reduce risks to people, property and state interests in the Delta by promoting effective emergency preparedness, appropriate land uses, and strategic levee investments."
- Allowed the Delta Stewardship Council to incorporate the emergency response and preparedness strategies in the SB 27 report into Delta Plan.
- Required the separate Bay-Delta Conservation Plan to consider the "resilience and recovery of Delta Conveyance alternatives in the event of catastrophic loss caused by earthquake or flood or other natural disaster."

The Delta Stewardship Council is on track to adopt the Delta Plan by the deadline, January 1, 2012. The current Fifth Draft Delta Plan includes no enforceable regulatory requirements for a unified State emergency response plan, but does recommend that DWR work with CalEMA to prepare one consistent with CalEMA's SB 27 report. The Council has not made this an enforceable policy due to lack of clarity in its authority to require another State agency to take a particular action. The 2009 Delta/Water Legislation gave the Council authority to review state and local agency actions in the Delta for "consistency" with the Council's Delta Plan. That bill, however, withheld authority to affirmatively direct other State agency actions. The statute creating the Council, however, would allow them to adopt a policy requiring a unified State plan for emergency response and then find other DWR actions inconsistent with that policy.

## **VI. Conclusion**

The Legislature has focused California's attention on the seismic risks to water supply reliability in the Delta, with several bills addressing the issue in the last five years. The State continues to develop information and plans for emergency response to earthquakes and multiple Delta levee failures. With the failures of Hurricane Katrina still on much of the nation's mind, the Legislature must work to ensure that these multiple plans coincide with each other. Additionally, it is crucial that the diverse agencies and organizations that comprise the Delta governance structure communicate and coordinate with each other to adequately prepare for, manage, and respond to a disaster of any kind. Finally, the proposals for improved infrastructure and water conveyance in the Delta are numerous. It is clear that, while considering all of these plans in the future, the Legislature and people of California must do so through a filter of emergency management and drinking water safety.

JOINT LEGISLATIVE COMMITTEE ON EMERGENCY MANAGEMENT  
AT METROPOLITAN WATER DISTRICT OF SO. CAL

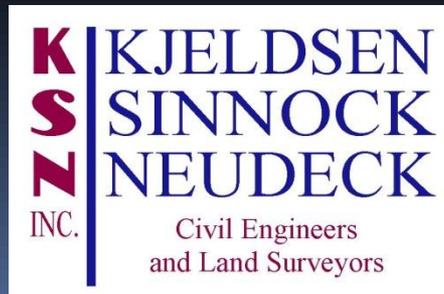
# WATER RELIABILITY AND SEISMIC RISK

LOCAL'S PERSPECTIVE OF DELTA LEVEES

OCTOBER 19, 2011

**PRESENTED BY:**

**CHRISTOPHER H. NEUDECK**



# PERCEIVED ENVIRONMENTAL LEVEL RISKS

## CRITICAL LEVEL ELEMENTS

- SUBSIDENCE
- SEEPAGE
- SEA LEVEL RISE
- EROSION
- SEISMIC EVENTS
- RODENTS
- INCREASED PEAK FRESH WATER FLOWS
- CRITICAL FAILURE SURFACES  
DURING PERIODS OF HEAVY RAIN

# LEVEE FAILURE FACTS

Per “Final Draft” of the Delta Risk Management Strategy for the Levees in the Sacramento San Joaquin-Delta aka: Comprehensive Program Evaluation CPE  
During the Last Century, there have been 162 Delta Levee Failures leading to Island Inundations.

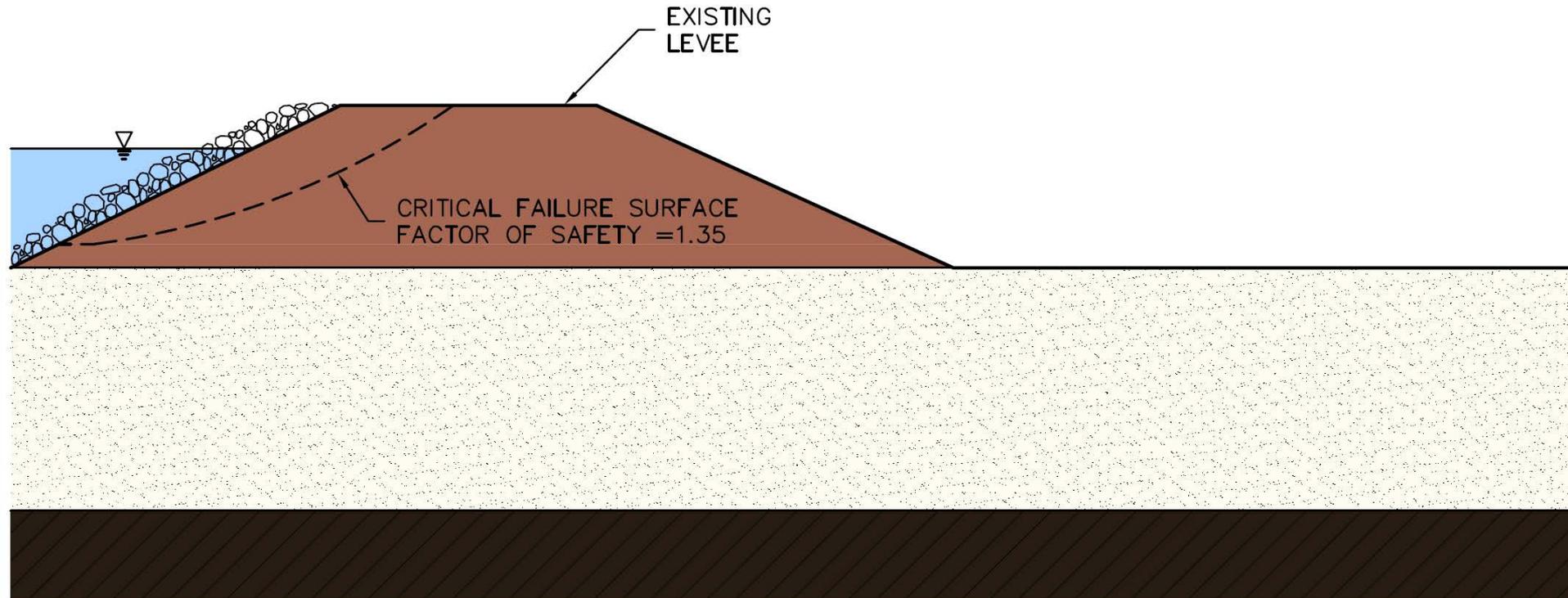
“ This sounds overwhelming”

Whereas when you consider the more recent History (post 1980), after the introduction of the State Levee Subvention Program, there has been less than a dozen Levee Failures on major islands within the Delta, excluding those levees that are designed to overtop and are in designated floodways.

“ Still devastating but more realistic”

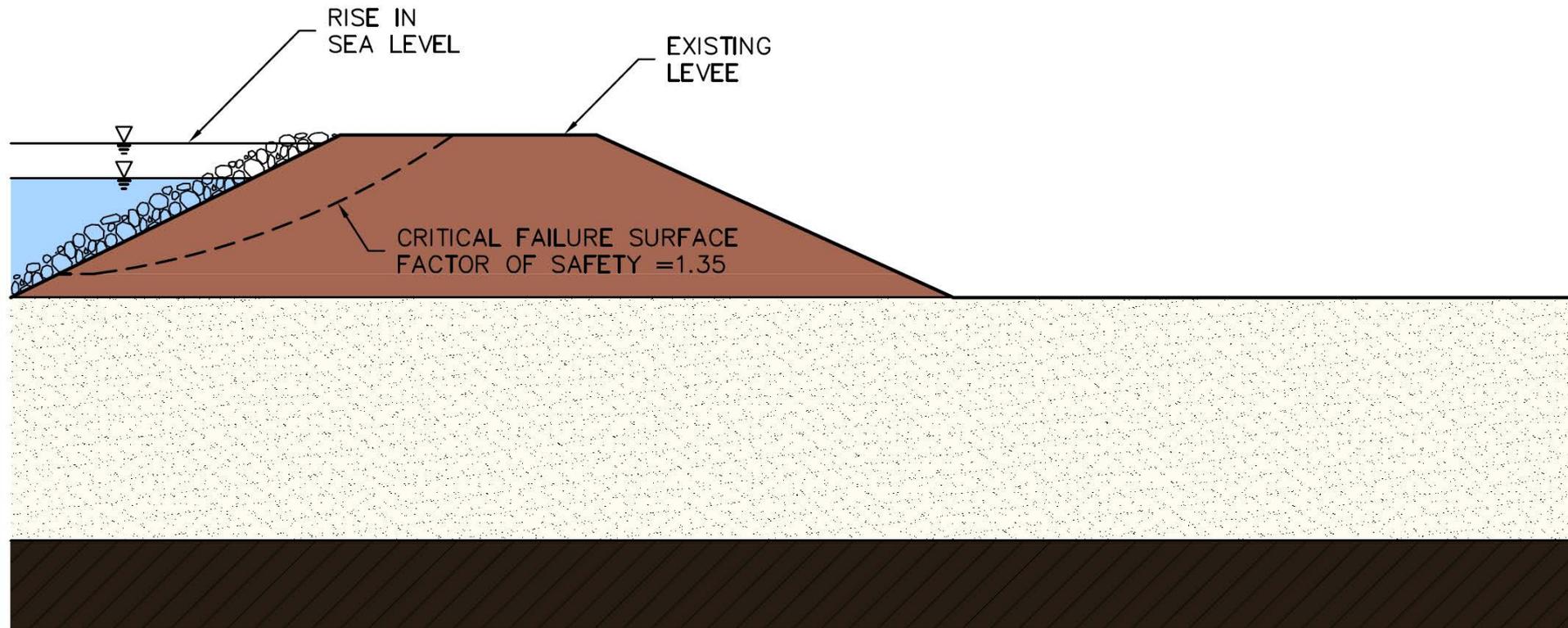
# WATERSIDE FAILURE MODE

## EXISTING LEVEL



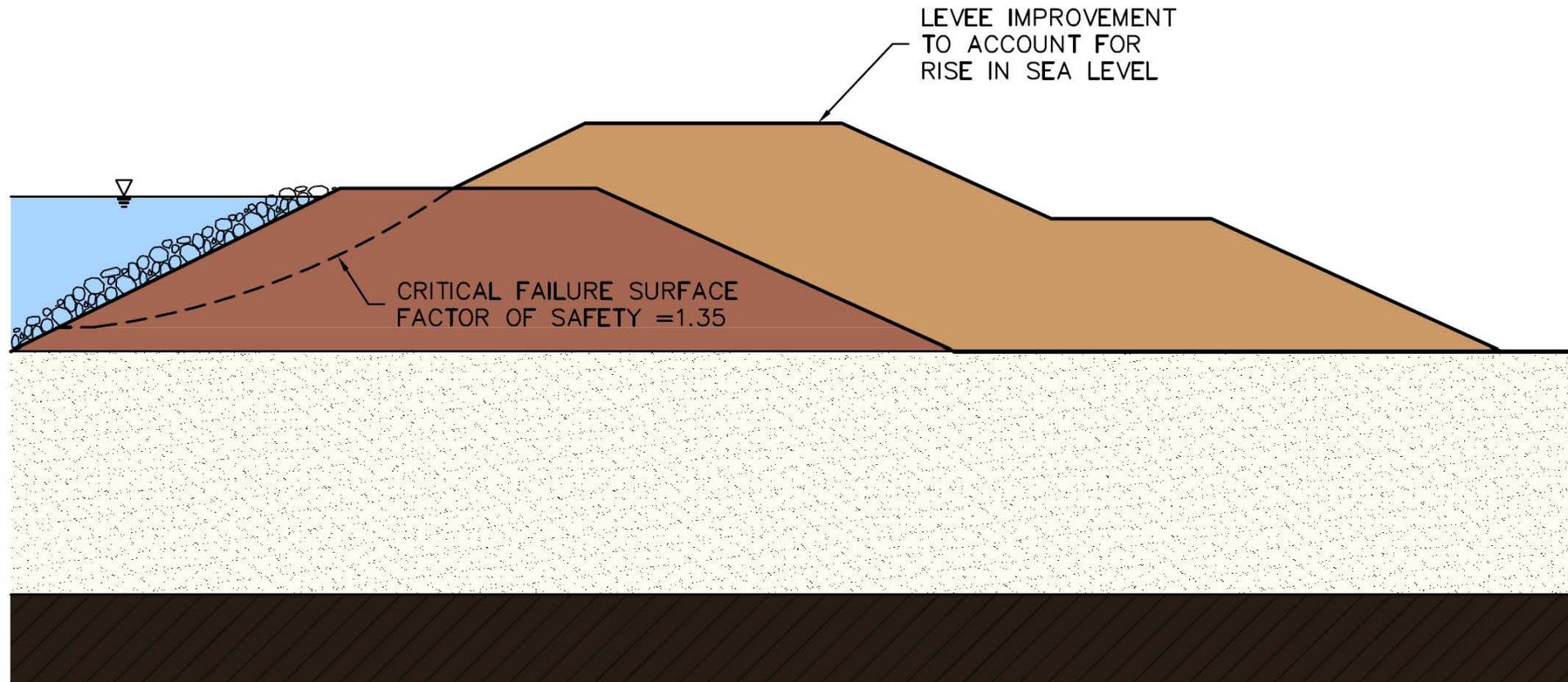
# WATERSIDE FAILURE MODE

## SEA LEVEL RISE



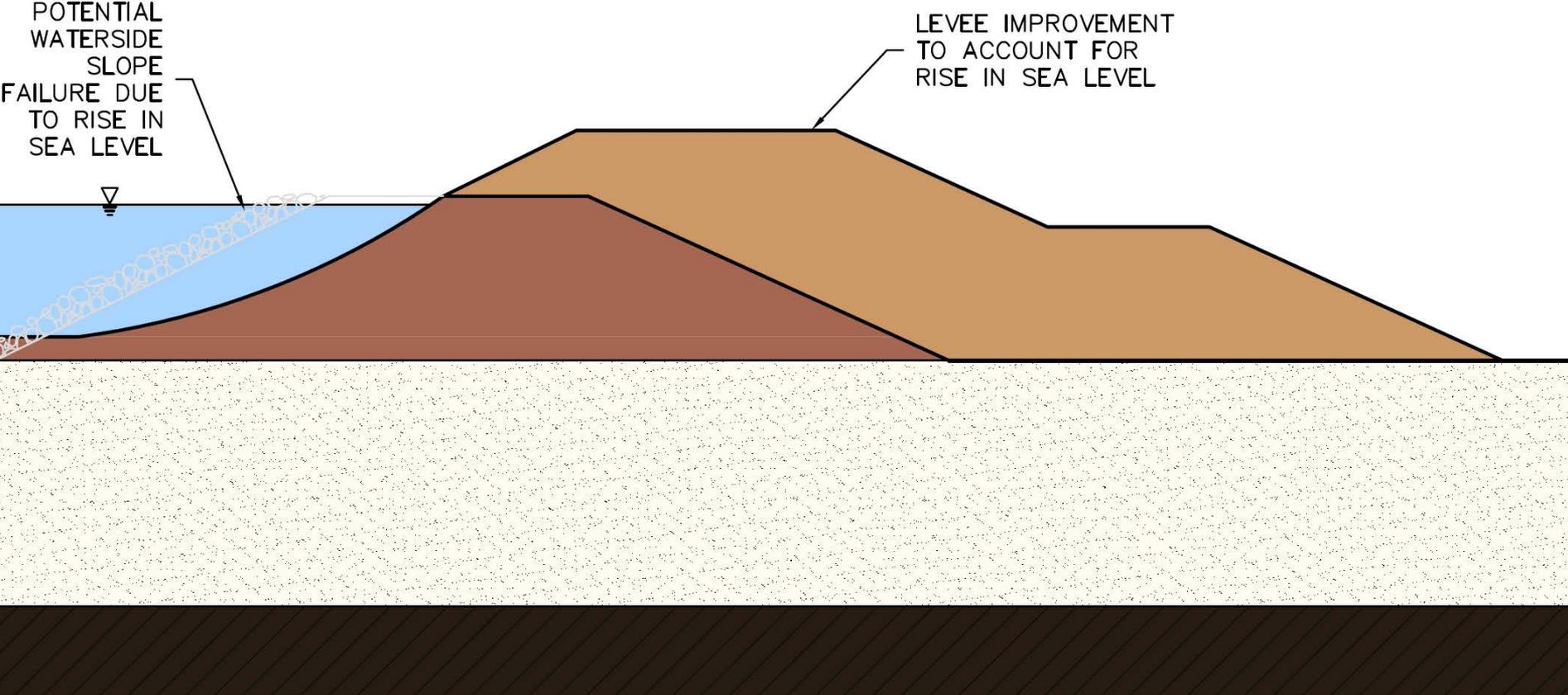
# WATERSIDE FAILURE MODE

## SEA LEVEL RISE IMPROVEMENTS



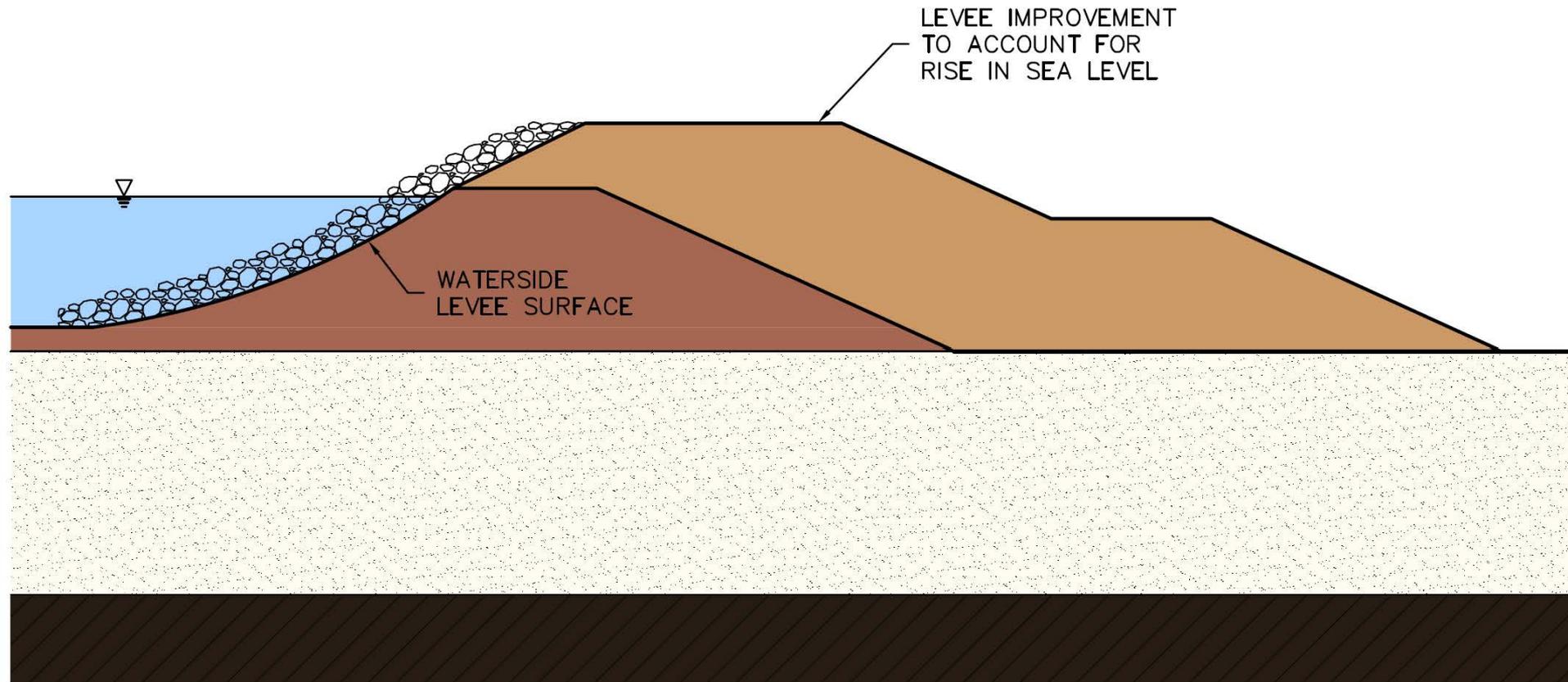
# WATERSIDE FAILURE MODE

## WATERSIDE SLOPE FAILURE



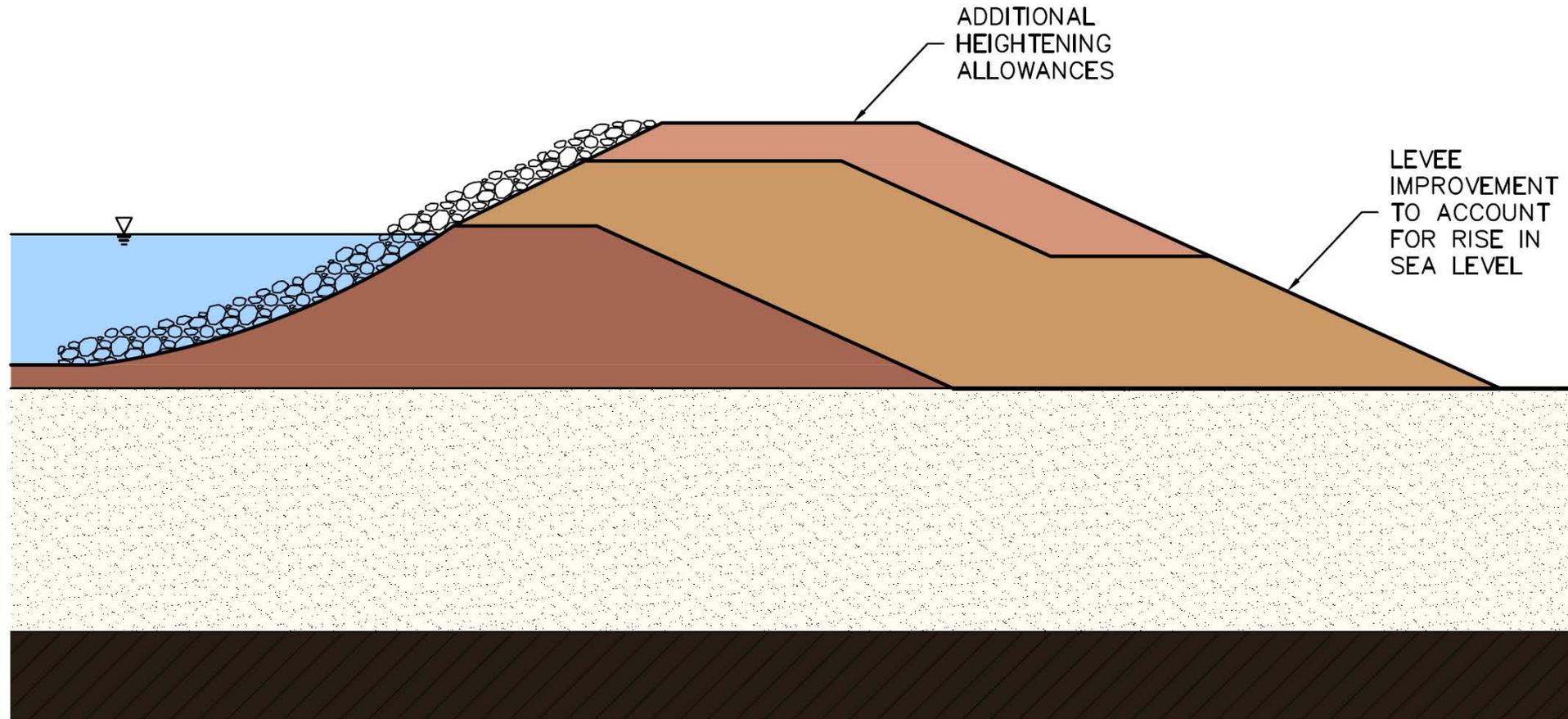
# WATERSIDE FAILURE MODE

## WATERSIDE SLOPE FAILURE

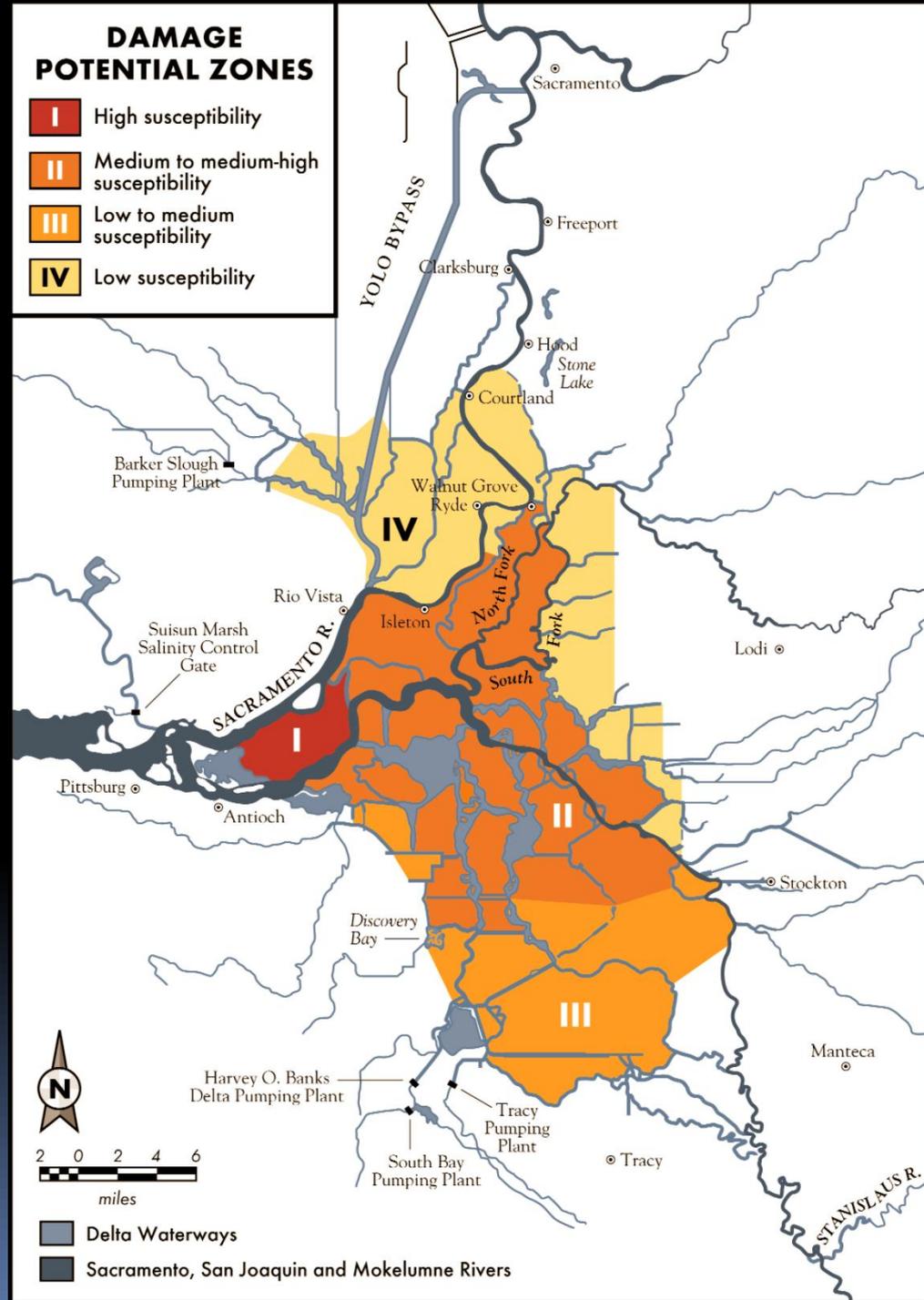


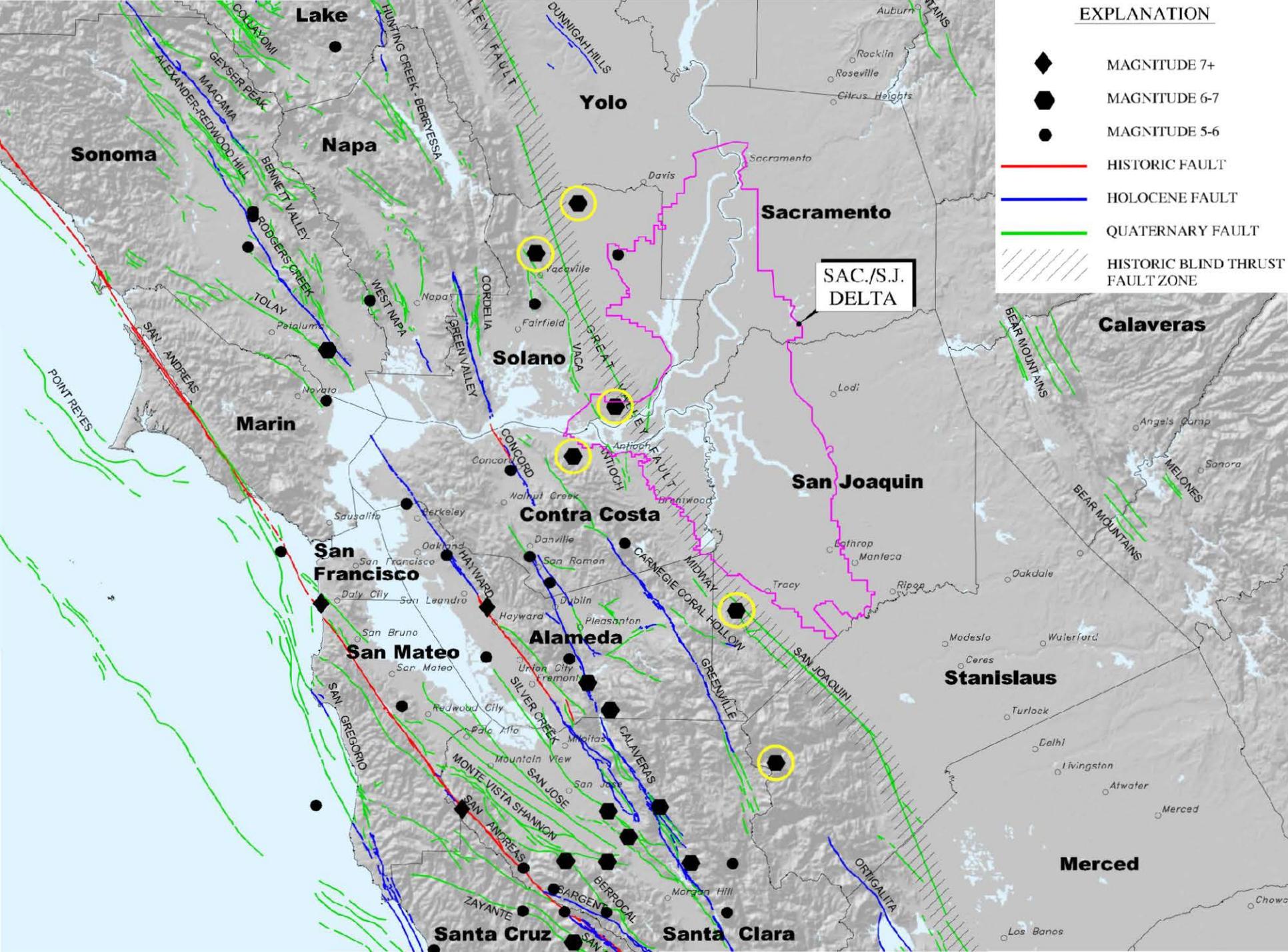
# WATERSIDE FAILURE MODE

## WATERSIDE SLOPE FAILURE IMPROVEMENTS



# ZONES OF VARYING POTENTIAL DAMAGE DUE TO SEISMICALLY-INDUCED LIQUEFACTION AND LEVEE COLLAPSE





**EXPLANATION**

- MAGNITUDE 7+
- MAGNITUDE 6-7
- MAGNITUDE 5-6
- HISTORIC FAULT
- HOLOCENE FAULT
- QUATERNARY FAULT
- HISTORIC BLIND THRUST FAULT ZONE

SAC./S.J. DELTA

Sonoma

Lake

Napa

Yolo

Sacramento

Solano

Calaveras

Marin

San Joaquin

San Francisco

Contra Costa

Stanislaus

San Mateo

Alameda

Merced

Santa Cruz

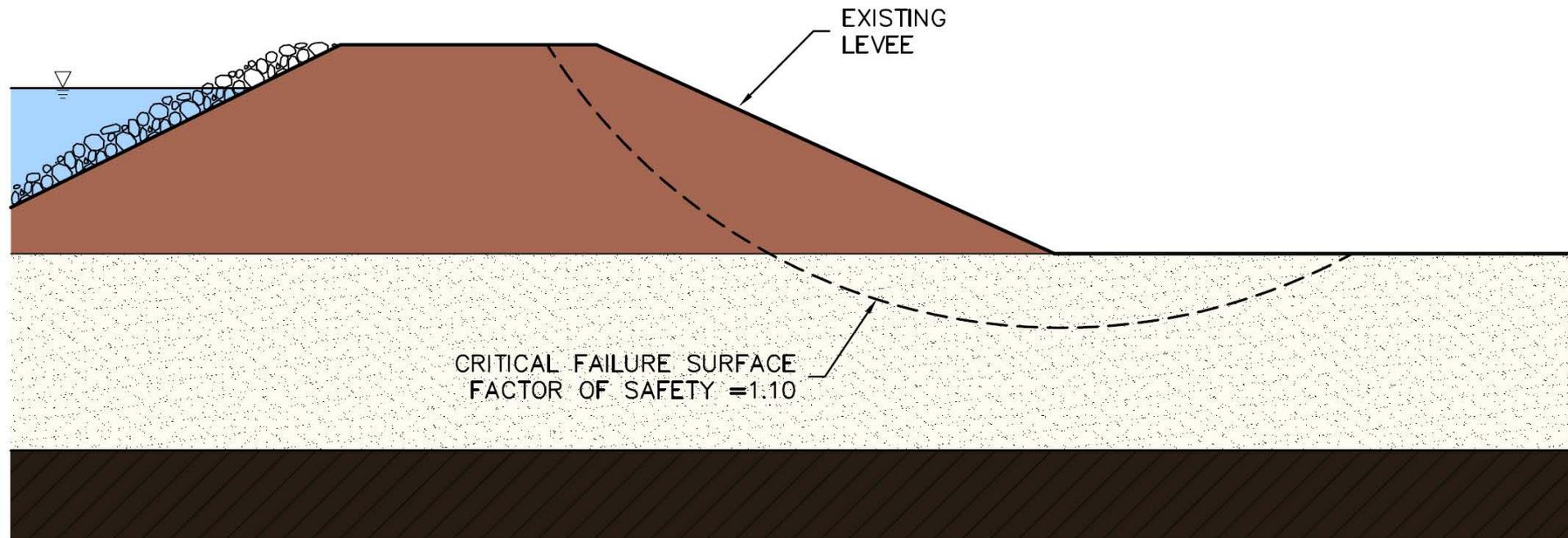
Santa Clara

## USACE (5/23/07) DRMS comments:

- "Seismic fragility curves need to be re-evaluated and corrected"
- "Prediction of levee failures not credible..."
- "Flood numbers outside the bonds of credibility..."
- "Major omission of map of areas subject to liquefaction..."
- "Extraordinarily short return periods for failures..."
- "Extreme level of risk appears grossly discordant with recent historical experience..."
- "Given that the observed number of seismic failures in the past 100 + years is 0 these estimates seem simply extremely high"

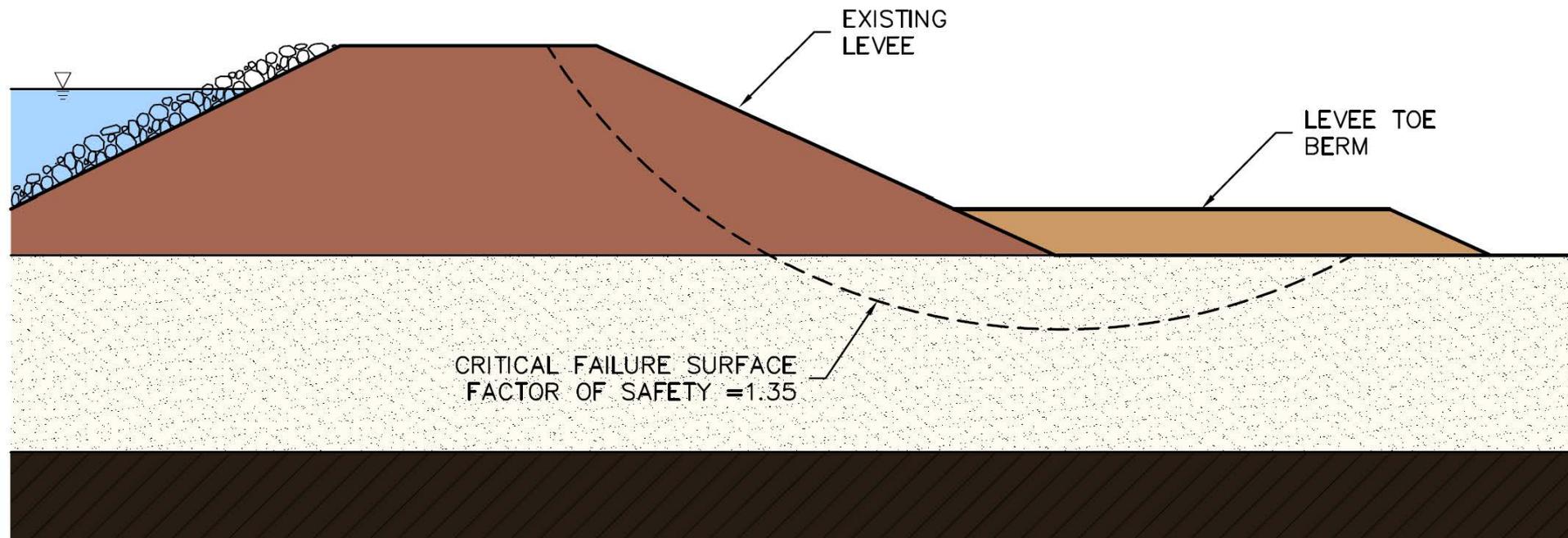
# LANDSIDE FAILURE MODE

## EXISTING LEVEL



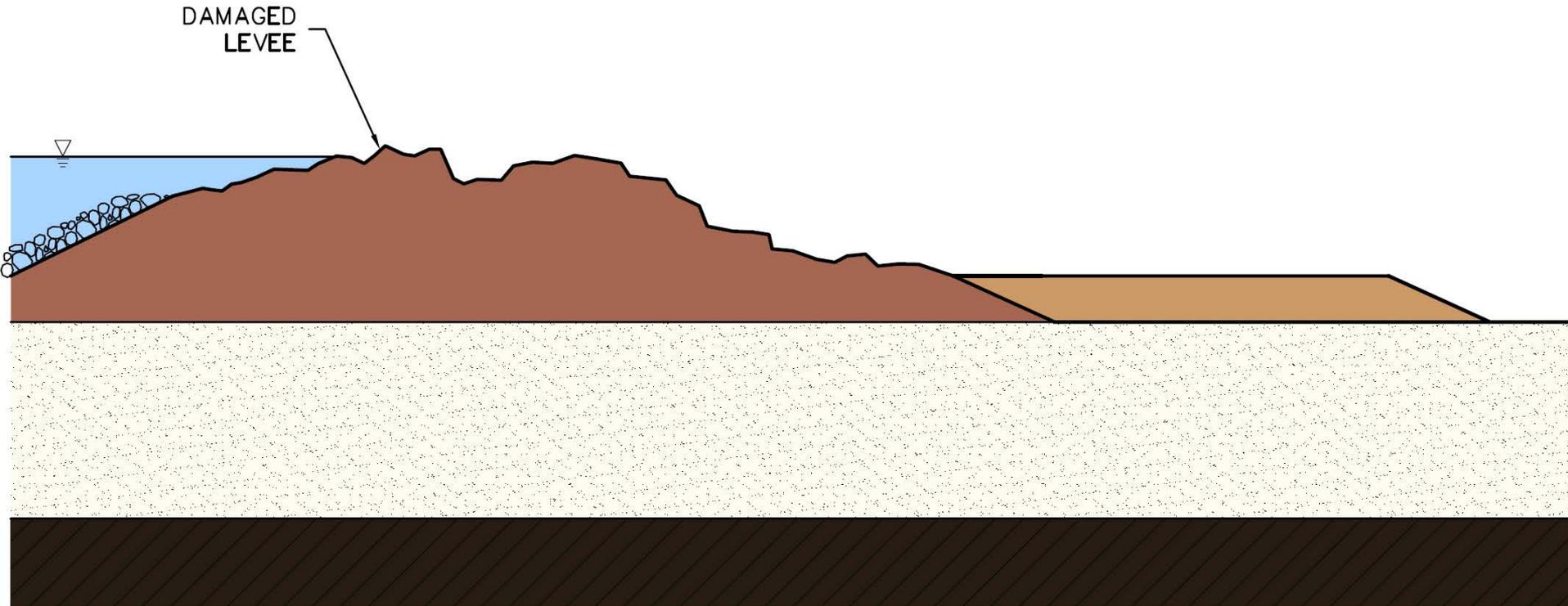
# LANDSIDE FAILURE MODE

## EXISTING LEVEE WITH TOE BERM



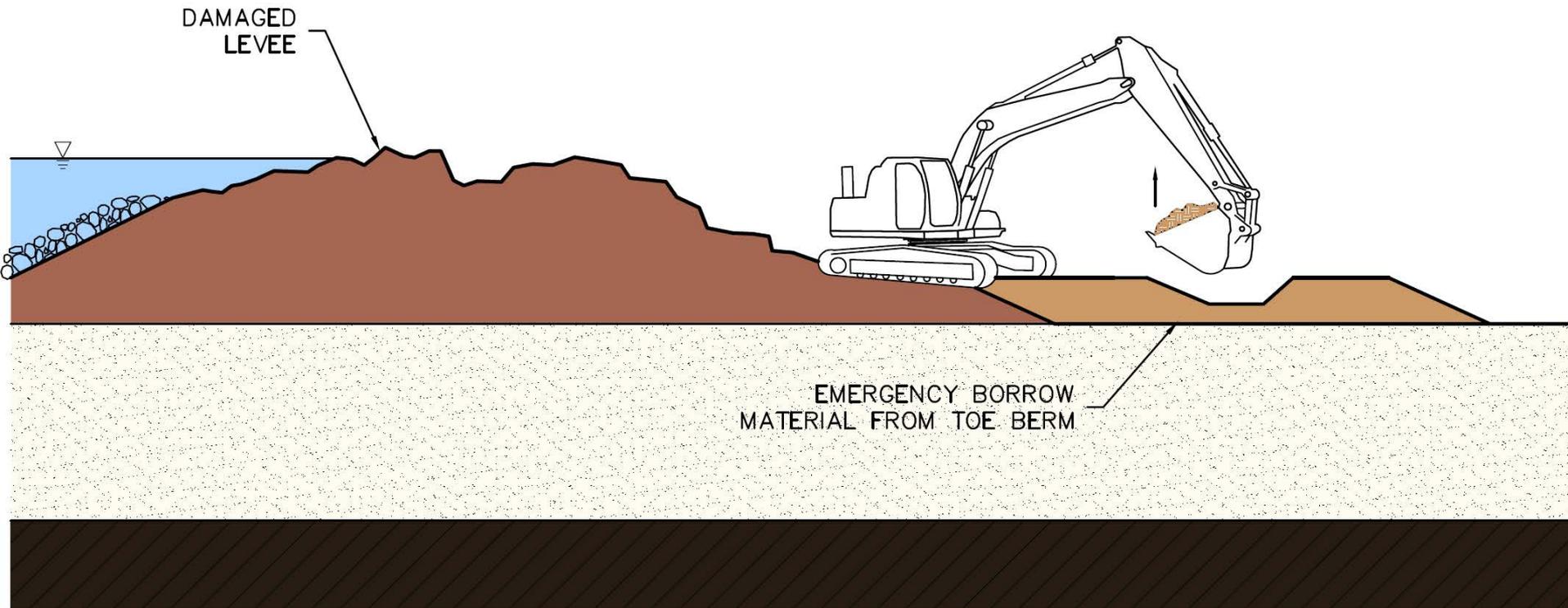
# LANDSIDE FAILURE MODE

## SEISMIC EVENT



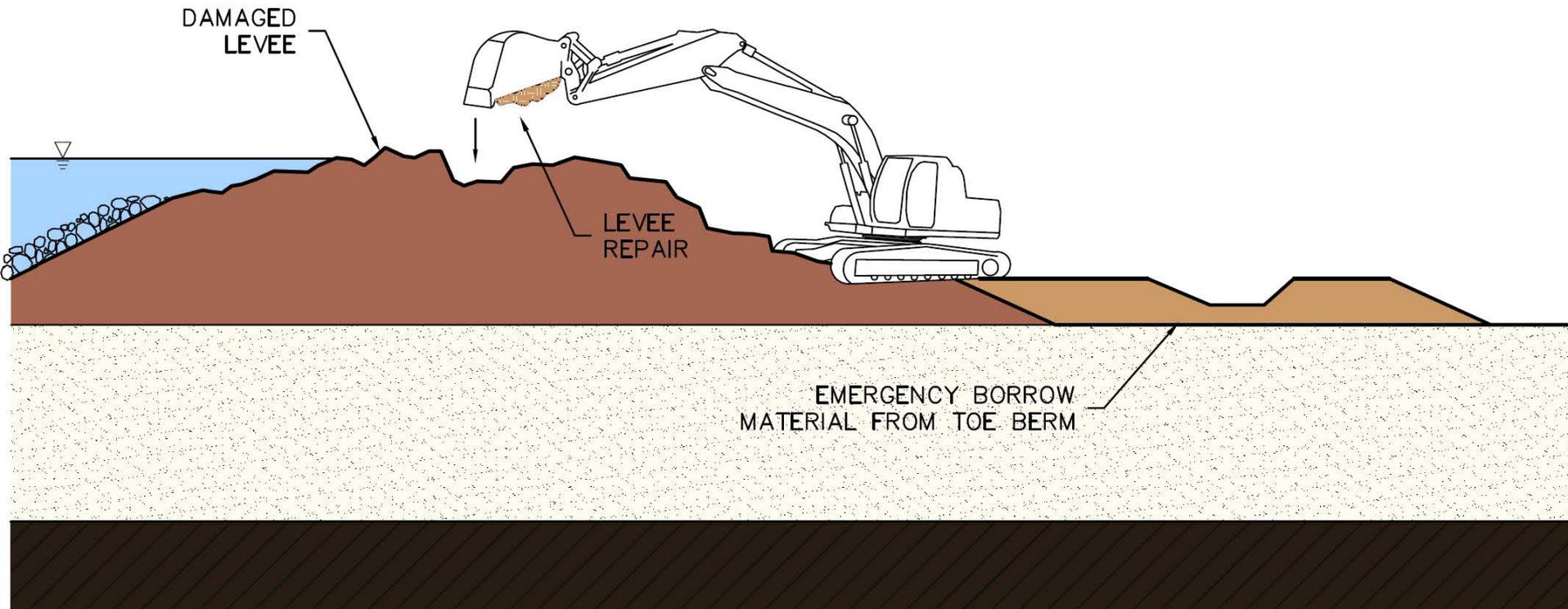
# LANDSIDE FAILURE MODE

## SEISMIC REPAIR



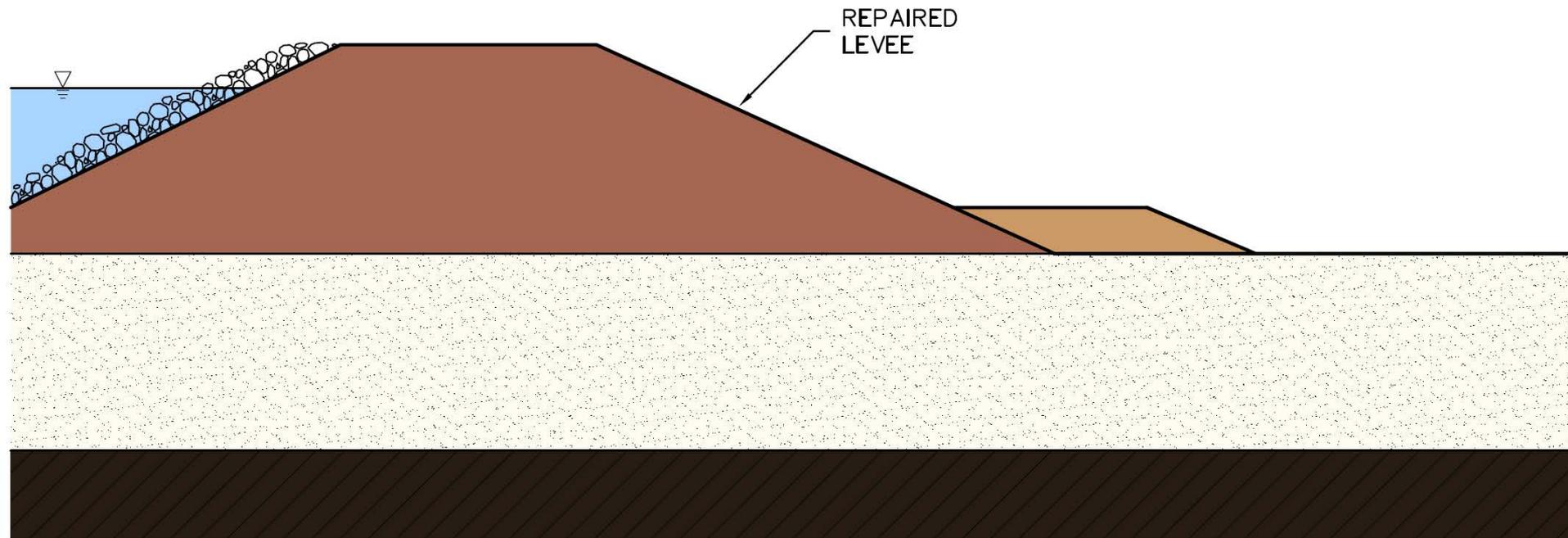
# LANDSIDE FAILURE MODE

## SEISMIC REPAIR



# LANDSIDE FAILURE MODE

## SEISMIC EVENT LEVEE IMPROVEMENTS



# SACRAMENTO-SAN JOAQUIN DELTA REGIONAL FLOOD RESPONSE PROJECT

“Creating an integrated response to Delta flood events”

## Description and Background for Regional Flood Response Project



Delta Protection Commission  
September 2011



# **CONTENTS**

## **THE GRANT OPPORTUNITY AND THE REGIONAL PROJECT**

Department of Water Resources Flood Emergency Preparedness Grant  
Sacramento-San Joaquin Delta Regional Flood Response Project  
SB27 Task Force Recommendations for improving flood response

## **SUMMARY OF GENERAL PREPAREDNESS RECOMMENDATIONS**

## **THE PROPOSED DELTA MULTI-AGENCY COORDINATION SYSTEM ( MACS)**

### **PROPOSED PROJECTS FOR REGIONAL IMPLEMENTATION**

#### **Improve Delta Multi-Agency Coordination**

- Project #1: Delta Multi-Agency Coordination System Procedures/Communications
- Project #2: Delta Regional Training Program for NIMS/SEMS/MACS

#### **Improve Delta-wide Information Sharing**

- Project #3: Flood Contingency Maps and GIS Data Systems
- Project #4: Evacuation - Maps and Dedicated Website
- Project #5: Common Delta Incident Command Organization/Operations Maps
- Project #6: Centralized Levee Patrol Reporting System
- Project #7: Public Information and Education Systems
- Project #8: Flood Fight Research and Development

#### **Improve Delta-wide Resource Management and Flood Fight Support**

- Project #9: Web-Based Logistics Tracking System
- Project #10: Independent Flood Fight Emergency Response Fund
- Project #11: Flood Fight Resources Stockpiles and Depots
- Project #12: Incident Prioritization Process
- Project #13: Flood Fight Resource Waterway and Roadway Movement System

## **ACTIONS NEEDED AND IMPLEMENTATION SCHEDULE**

### **ATTACHMENTS**

1. Sample Letter of Support
2. Project Contact Sheet and Meeting Schedule

## **GRANT OPPORTUNITY AND DELTA REGIONAL APPLICATION**

### DEPARTMENT OF WATER RESOURCES FLOOD PREPAREDNESS GRANT

In March 2011, the Department of Water Resources issued draft guidance for a new “Local Flood Emergency Planning, Preparedness, and Response Grant Program”. Funding for this grant will come from the Proposition 84 bond act passed in 2006. Two initial grant packages will be issued in Fall 2011. One grant package with total available funds of \$5 million will be for communications equipment for Delta jurisdictions. A second grant package with total available funding of \$5 million will be for local flood preparedness and response projects. Local jurisdictions throughout the Central Valley can apply for funding under the second grant although DWR has indicated that priority for this funding will be to the Delta.

### SACRAMENTO-SAN JOAQUIN DELTA REGIONAL FLOOD RESPONSE PROJECT

Common past practice has been for eligible local jurisdictions to develop individual applications for funding when the State or Federal governments issue grants to local government. In this case, the Delta Protection Commission is sponsoring an effort to bring local jurisdictions together to jointly identify projects that would enhance response to flood impacts, and then subsequently to jointly seek funding to implement them. The Federal Emergency Management Agency (FEMA) Region IX supports this concept and is considering providing some funding to help with this effort. This new approach will allow innovative Delta-wide response systems to be envisioned and efficiencies achieved in spending scarce public funds. The Delta Protection Commission has agreed to be the official applicant for any joint regional funding request while Delta jurisdictions and other participating agencies would jointly implement funded projects. Delta counties, cities, and reclamation districts, and other interested agencies are now being asked to comment on proposed projects and indicate their support for this joint effort through submission of a letter of support. A final list of projects will be developed after receiving as much input as possible. Projects will be implemented in cooperation with CalEMA, DWR, and other State and Federal agencies.

### SB27 TASK FORCE RECOMMENDATIONS FOR IMPROVING FLOOD RESPONSE

In 2009, the Governor signed Senate Bill 27 which required the California Emergency Management Agency (CalEMA) to form a task force to develop a strategy for improving emergency response in the Sacramento-San Joaquin Delta. The task force was composed of a representative from each of the five Delta counties, the Department of Water Resources, and the Delta Protection Commission. The report, along with an estimate of funds needed to implement the recommendations, was completed in early 2011 and is awaiting delivery to the legislature.

The SB27 Task Force recommendations parallel similar recommendations developed by a joint Delta county planning group in 2008. A summary of these recommendations, which are based on existing innovative preparedness projects and established concepts from the National Incident Management System (NIMS), is included.

# Summary of General Preparedness Recommendations

The following is a summary of recommendations reflected in the SB27 Task Force Report and in the previous Delta county flood response group reports outlining a strategy for improving emergency response and public safety in the Delta. The full SB27 report should be read when issued and is the authoritative source for those recommendations.

## KEY RECOMMENDATIONS

Develop Sacramento-San Joaquin Delta Flood Catastrophic Incident Plan to include:

Updated **Risk Assessment** for Delta Floods

**Regional Multi-Agency Coordination System** (Delta MACS) to improve resource management and information sharing during regional emergencies

**Delta Interoperable Communications Plan** for local and State responders

**Common Regional Unified Command Framework** to improve agency coordination

**Regional Evacuation Plan** for efficient evacuation and rescue of residents

**Flood Contingency Maps** for the entire Delta to improve flood fight operations

**Flood Response and Flood Fight Resource Stockpiles** to be strategically placed in Delta

**Emergency Response Exercises** for all hazards in the Delta

**Training Plan** for officials that would implement this regional system

**Sacramento-San Joaquin Delta Flood Fight Emergency Fund** separate from all agency or jurisdiction budgets to eliminate bureaucratic delays in responding to levee problems

## ESTIMATES OF FUNDING NEEDED TO FULLY IMPLEMENT RECOMMENDATIONS

**\$5 million** for Catastrophic Incident Plan and flood fight stockpiles

**\$500,000** to implement a Delta Regional Multi-Agency Coordination System

**\$5 million** for Delta Interoperable Communications

**\$1 million** for development of flood contingency and evacuation maps

**\$50-150 million** for Sacramento-San Joaquin Delta Emergency Response fund to support flood fight operations on the levees in an emergency

## **THE PROPOSED DELTA MULTI-AGENCY COORDINATION SYSTEM (MACS)**

**Creation of a Delta Multi-Agency Coordination System (Delta MACS) will be the key product of regional preparedness planning. A multi-agency coordination system is intended to improve information sharing and the availability and management of needed resources over a large area dealing with a common threat. The specific projects proposed for this application would provide the tools needed to implement this new regional response capability in an emergency and also enhance response to local problems.**

In the 1970's, the California Fire Service developed the Incident Command System (ICS) to improve coordination between the numerous agencies that often respond to the same problem or "incident". Later, the Fire Service developed the concept of a "multi-agency coordination system (MACS)" to help such local "incident commands" to better coordinate their actions and manage available resources with other separate incidents occurring at the same time. In the ICS, agencies and jurisdictions working together at a specific problem site, or "incident", decide how to deal with that problem. The MACS system is not intended to change this local command, but to enhance regional coordination to ensure the most effective overall response possible.

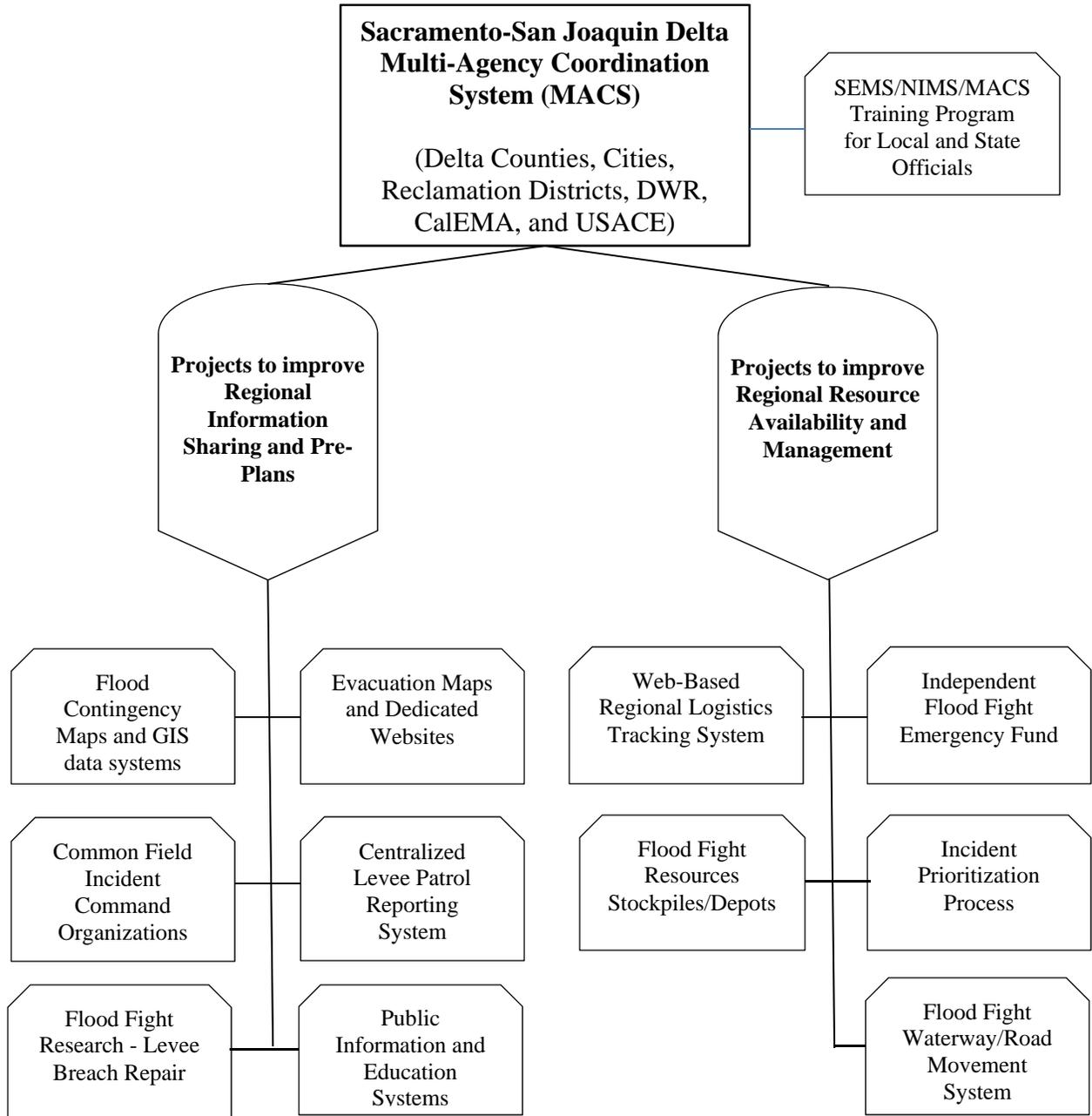
Agencies and jurisdictions responding to flood problems throughout the Delta will be the participants in this new multi-agency coordination system process. Interaction between agencies and jurisdictions will be through conference calls, interactive Internet systems, physical meetings, and radio systems. The small number of staff needed to facilitate this multi-agency coordination process will be provided by the California Emergency Management Agency or other appropriate agencies.

Potential practical benefits include improved management of scarce or critical resources. Agencies will be able to more quickly locate needed resources throughout the Delta region regardless of political boundaries. Agencies with resources to share will have an easy process for letting other agencies throughout the Delta know of their availability. Normal mutual aid and resource request processes remain in place but information on Delta-wide resources and operations will be greatly improved thereby making those systems more effective.

No one agency, State or local, in the Delta can effectively implement such a multi-jurisdictional, regional, response system. Only by working together in a single Delta-wide planning effort can such a regional system be put in place. The regional grant application project is designed to create this unified effort to implement a model flood response system in the Sacramento-San Joaquin Delta as part of State and Federal planning efforts.

The chart on the next page shows how the specific projects proposed for inclusion in the regional grant application relate to the two key MACS objectives of improving information sharing and the management and availability of critical resources (although some projects may be actually implemented through other established systems in an actual response). Most projects will have the dual effect of also improving flood fight and public safety operations at specific problem sites in a major flood event and can be used in recovery operations.

## 2.2 Delta Multi-Agency Coordination System and Related Grant Projects



## **PROPOSED PROJECTS FOR REGIONAL IMPLEMENTATION**

### **Implement Delta Multi-Agency Coordination System (Delta MACS)**

Name of Project	Description of Final Product	Funding Request
Delta Multi-Agency Coordination System (MACS) – Regional Application Project #1	Procedures, communications systems, and supplies for implementing a regional multi-agency coordination system throughout the Delta would be developed. Staff identified and trained	\$500,000 to develop procedures and obtain equipment
Delta Regional Training Program – Regional Application Project #2	Local and State officials responsible for flood response would be trained on NIMS/SEMS and real world specific Delta response and coordination procedures to meet Federal requirements for disaster reimbursement	\$200,000 to conduct two-year training program

### **Improve Delta-wide Information Sharing**

Name of Project	Description of Final Product	Funding Request
Flood Contingency Maps and Geographical Information Systems (GIS) data management systems – Regional Application Project #3	Flood contingency maps for the entire Delta with preliminary engineering designs for emergency actions identified on maps such as relief cuts and emergency berms. Maps would include patrol plans, supply points, historical data and command information. GIS databases on critical infrastructure impact for use in EOCs. See <a href="http://www.sjmap.org/oesfcm">www.sjmap.org/oesfcm</a> for examples.	\$1,000,000 to develop needed maps, complete engineering work, and GIS databases
Evacuation Maps and Dedicated Website – Regional Application Project #4	A series of maps for urban areas of the Delta showing evacuation procedures for responders. Related maps for general public use would be developed and posted on a dedicated website. See <a href="http://www.sjmap.org/oesmg">www.sjmap.org/oesmg</a> for examples.	\$400,000 to complete maps, website, and obtain equipment
Pre-identified Delta Incident Command Organizations – Regional Application Project #5	Pre-identify Public Safety and Flood Fight Unified Commands in order to improve coordination at local incidents and between adjacent areas of Delta.	\$75,000 to pre-identify unified commands and obtain supplies
Centralized Levee Patrol Reporting System – Regional Application Project #6	Develop a web-based system to post levee conditions during a flood to reduce problems that arise from lack of easily accessible information on the status of Delta levees and leveed areas	\$120,000 to develop patrol reporting tool and buy needed tools
Public Information and Education Systems – Regional Application Project #7	Develop tools to allow operational area joint information centers to share information through the MACS. Install public education and notification systems in operational areas	\$200,000 to develop protocols and systems
Flood Fight Research – Alternate Levee Breach Repair Protocol – Regional Application Project #8	Design protocol for sealing breaches or underpasses with sheet pile or the USACE Rapid Repair of Levee Breaches devices to address the shortage of dredges for quickly placing rock and fill in potential multiple breaches	\$400,000 to develop protocols for use of sheet pile or USACE equipment

## Improve Delta-wide Resource Management and Flood Fight Support

Name of Project	Description of Final Product	Funding Request
Web-Based Regional Logistics Tracking System – Regional Application Project #9	Web-based logistics system for tracking flood fight crews and non-expendable and expendable resources throughout the Delta. Agencies with resources such as sandbags could post these supplies in the system to allow rapid sharing and transport of the closest available needed resource to a problem site. Information would allow mutual aid systems to better manage resources committed to Delta response.	\$200,000 to create web-based logistics tracking system designed for flood operations
Independent Flood Fight Emergency Fund – Regional Application Project #10	SB27 report calls for an independent fund with \$50-150 million to ensure immediate response by local/State/Federal agencies to critical threats to levees. Current reliance on local/State agency budgets to fund significant engineering response to levee problems, or failures, often leads to delays in response due to lack of appropriations and inevitable bureaucratic delays.	\$100,000 to develop legal basis for fund, protocols for accessing fund, and criteria for use of fund. This would lay basis for creating fund
Flood Fight Resources Stockpiles and Depots – Regional Application Project #11	Develop flood fight resources stockpile and depot system to which all Levee Maintaining Agencies (LMA) have equal access. Coordinate with DWR stockpile programs to avoid overlap and duplication. Conduct an assessment of LMA and other local supplies and use criteria for minimal levels of critical resources supplies as a basis for system design	\$1,000,000 to perform assessment, design depot system and purchase and place stockpiles
Incident Prioritization Process – Regional Application Project #12	The NIMS Multi-Agency Coordination System (MACS) has a standard protocol for reviewing ongoing incidents in order to prioritize incidents to ensure that the most critical incidents are addressed effectively. This protocol should be adapted to the needs of the Delta.	\$50,000 to develop protocol for Delta and identify communications needed to use it
Flood Fight Resource Waterway and Roadway Movement System – Regional Application Project #13	Establish a traffic monitoring system for the Delta similar to Coast Guard systems in the SF Bay that could monitor, route, and plan movement of critical supplies on roadways and waterways in a disaster and also assist with movement of perishable commodities out of isolated agricultural areas to ensure that the limited Delta transport system is used as effectively as possible, particularly if seriously impaired for long periods by multiple levee breaches and extensive flooding.	\$200,000 to develop protocols and establish communications systems

## **ACTIONS NEEDED AND APPLICATION DEVELOPMENT SCHEDULE**

NOTE: The following action dates may need to be adjusted depending on State deadlines.

### **Actions Needed from Interested Reclamation Districts, Cities, and Counties**

#### **Action #1 – PROVIDE INPUT TO THIS PROPOSED REGIONAL PROJECT**

Read this summary document and/or attend scheduled meetings and provide input on the contents of the regional grant application for improved flood response by contacting the project facilitator or attending one of the scheduled open meetings – see **Project Meeting Schedule**

#### **Action #2 – PROVIDE SUPPORT AND COMMIT TO PARTICIPATE**

Submit a letter of support to the Delta Protection Commission as soon as possible but no later than the date that any application must be submitted to the State (TBD). This does not need to be a governing body resolution but the letter needs to indicate your agency’s strong support for a regional application and its willingness to participate in its implementation. DPC will need to show that local jurisdictions are behind this effort. **See Sample Letter of Support**

### **Implementation Schedule**

- |                      |   |   |
|----------------------|---|---|
| March 2011           | - | Draft guidance for new DWR flood response grant released  |
| May                  | - | Delta Protection Commission votes to be lead applicant for regional grant applications for the Delta  |
| June                 | - | FEMA Region IX offers support for a regional planning effort.   |
| August- September    | - | Delta Regional Flood Response Project initiated.  |
| September-October    | - | Document describing regional project and application is distributed and meetings held in the Delta to solicit input and participation from Delta reclamation districts, cities, counties, and other interested agencies in potential funding requests |
| November – December- | - | Submission period for first grant opportunity through DWR. DPC submits application to Department of Water Resources   |
| January – March      | - | DWR awards grants (anticipated)   |
| Spring 2012          | - | Start work on regional flood response project while seeking further funding   |

# Attachment #1

## Sample Letter of Support for Sacramento-San Joaquin Delta Regional Flood Response Project

Mr. Don Nottoli, Chair  
Delta Protection Commission  
14215 River Road  
P.O. Box 530  
Walnut Grove, CA 95690

Dear Sir:

### SUPPORT FOR DELTA PROTECTION COMMISSION (DPC) REGIONAL FLOOD RESPONSE GRANT APPLICATION

By this communication, the [Name of Jurisdiction] indicates its support for the Delta Protection Commission's regional application for funding from the 2011 Department of Water Resources Flood Emergency Planning, Preparedness, and Response Grant to implement the Sacramento-San Joaquin Delta Regional Flood Response Project. We have reviewed the proposed regional application and its specific projects and agree that implementation of this regional project would significantly enhance the effectiveness of emergency response and improve public safety in the Delta. The [Name of Jurisdiction] supports such multi-jurisdictional projects in order to create a more effective Delta response to regional disasters.

The [Name of Jurisdiction] will participate within its resources in the implementation of this regional project and will participate in, and support, resulting regional emergency coordination systems. The [Name of Jurisdiction] encourages the Department of Water Resources and other State agencies to support and approve the Delta Protection Commission regional application and to assist in the project's implementation in coordination with related State public safety initiatives.

The [Name of Jurisdiction] appreciates the willingness of the Delta Protection Commission to assist in the creation of a Delta-wide multi-jurisdictional regional emergency planning effort. Such regional efforts offer greater cost efficiencies in the use of scarce public funds and offers greater benefits to all jurisdictions and citizens in the Delta than separate individual efforts could achieve.

SIGNATURE BLOCK

## **Attachment #2**

### **Project Contact and Meeting Schedule Sheet**

For questions and comments, contact the project facilitator directly or attend one of the scheduled open meetings.

Ronald E. Baldwin, Project Facilitator

Telephone: (209) 601-2175

Email: [rbaldwin@pbieng.com](mailto:rbaldwin@pbieng.com)

#### Meeting Schedule

Monday, October 10<sup>th</sup>, 5:00 p.m.

Walnut Grove Library

14177 Market Street, Walnut Grove 95690

Tuesday, October 11<sup>th</sup>, 10:00 a.m.

Office of the Sheriff's Training Academy

340 Marina Boulevard, Pittsburg 94565

Tuesday, October 18<sup>th</sup>, 2:00 p.m.

MBK Engineers Conference Room

1771 Tribute Road, Suite A, Sacramento 95815

Tuesday, October 25<sup>th</sup>, 1:00 p.m.

Rio Vista Fire Department

350 Main Street, Rio Vista 94571

Thursday, October 27<sup>th</sup>, 9:00 a.m.

San Joaquin Agricultural Center

2101 E. Earhart Avenue, Stockton 95206



**Joint Legislative Committee on Emergency Management  
and  
Assembly Select Committee on Regional Approaches to  
Address the State's Water Crisis  
October 19, 2011**

**Presentation by  
Debra C. Man, Assistant General Manager and Chief Operating Officer  
Metropolitan Water District of Southern California**

# Metropolitan Water District of Southern California



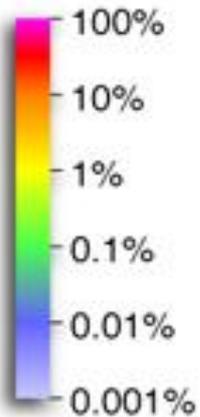
- Regional water wholesaler to 6 counties
  - 5,200 square mile service area
- 26 Member Agencies
- ~19 million residents
- Regional economy: \$1 trillion
- Retail demand in 2009:
  - 4 million acre-feet
  - Provided about ½ of retail demands

# Sources of Water for Southern California



# So California's Most Active Faults

30-Year  
Earthquake  
Probability



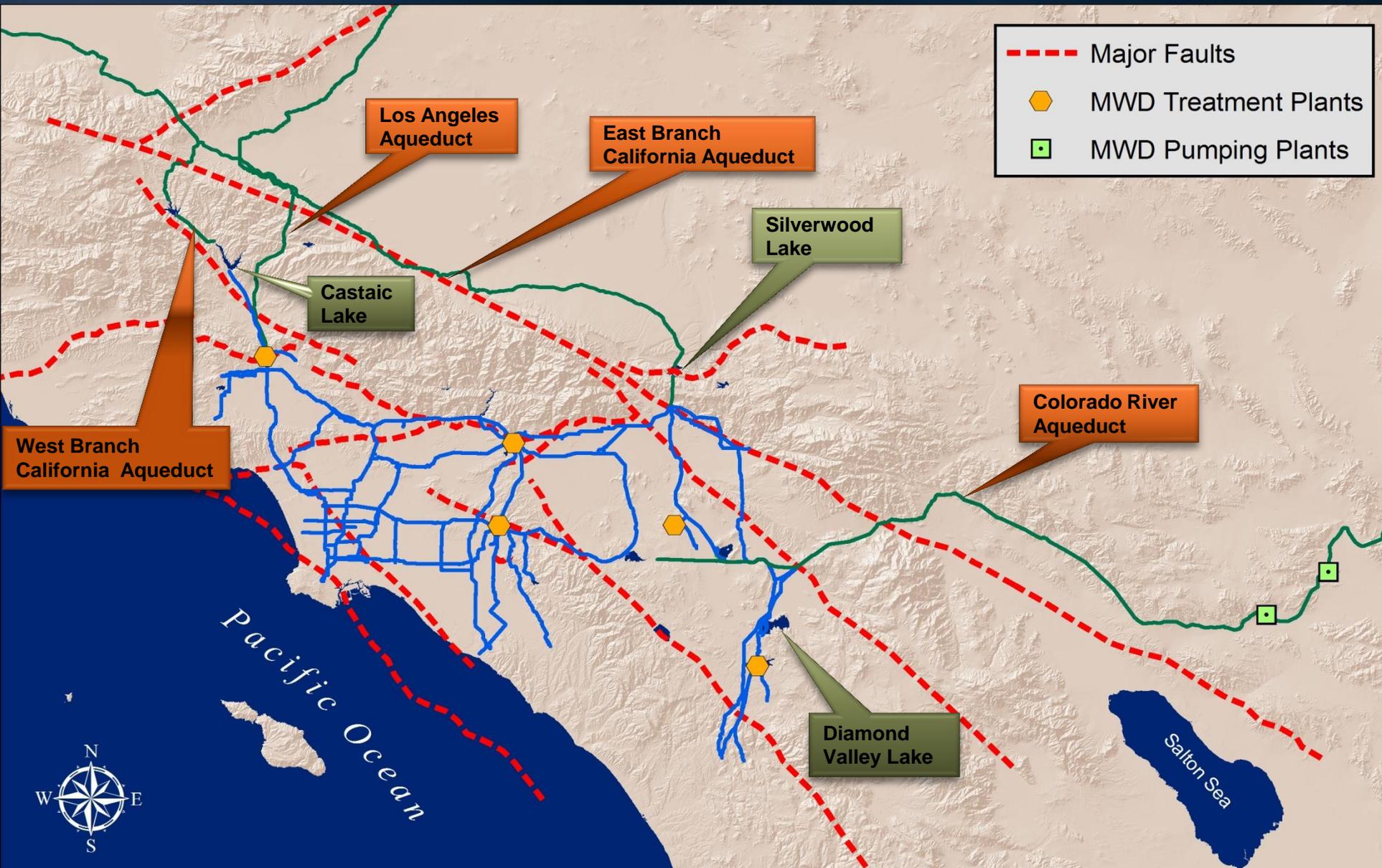
**SC/EC**  
an NSF + USGS center

**USGS**  
science for a changing world



Elsinore

# Overview of MWD



# Background

## Seismic Program Retrofits

### Example: CRA Pumping Plants



**During Construction**



**Upgrade Completed 1996**

# Background

## Seismic Program Retrofits

### Example: CRA Pumping Plant Discharge Pipelines

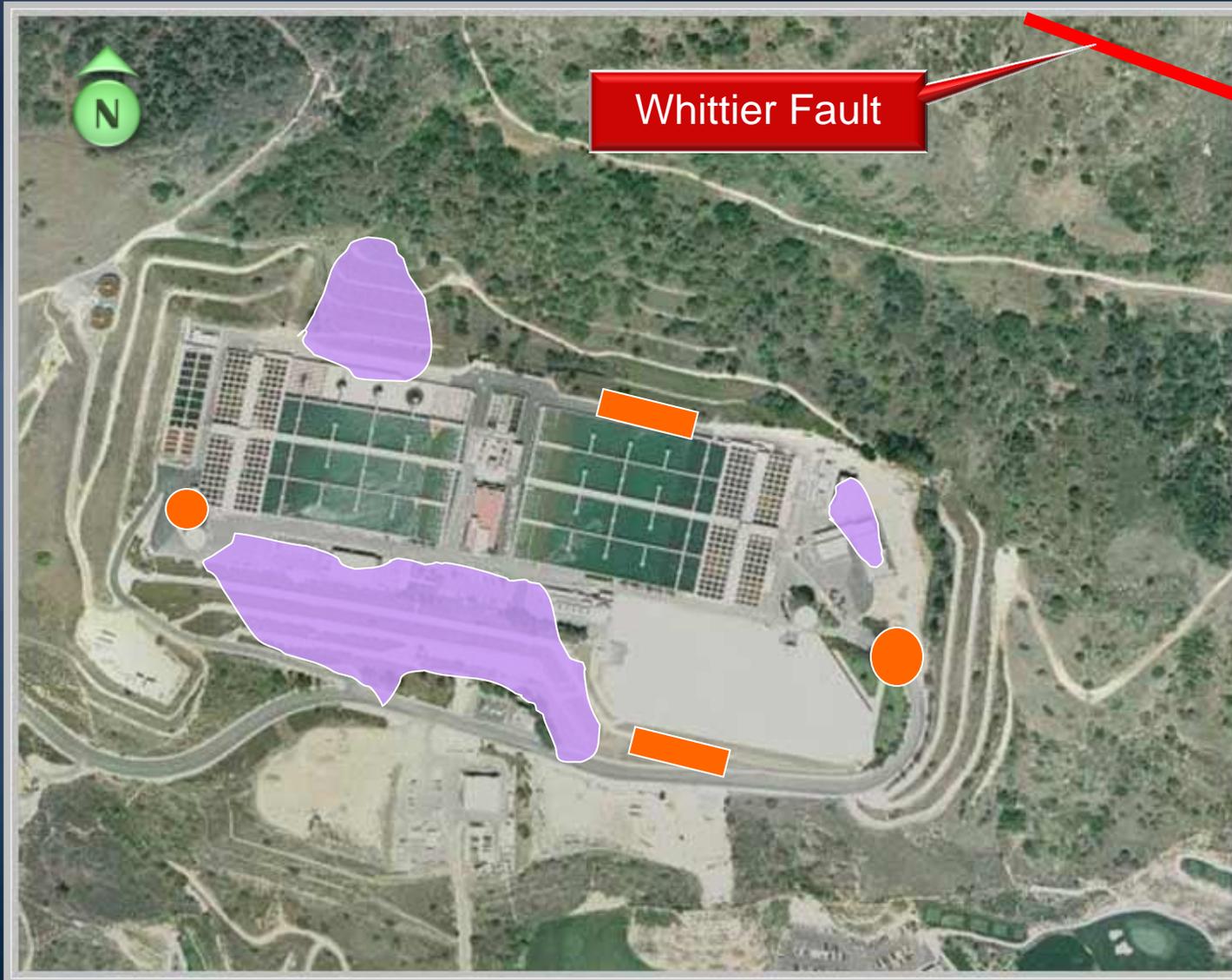


**During Construction**



**Upgrade Completed 1998**

# Seismic Upgrade Projects at Diemer Plant



Work Complete



Work in Progress

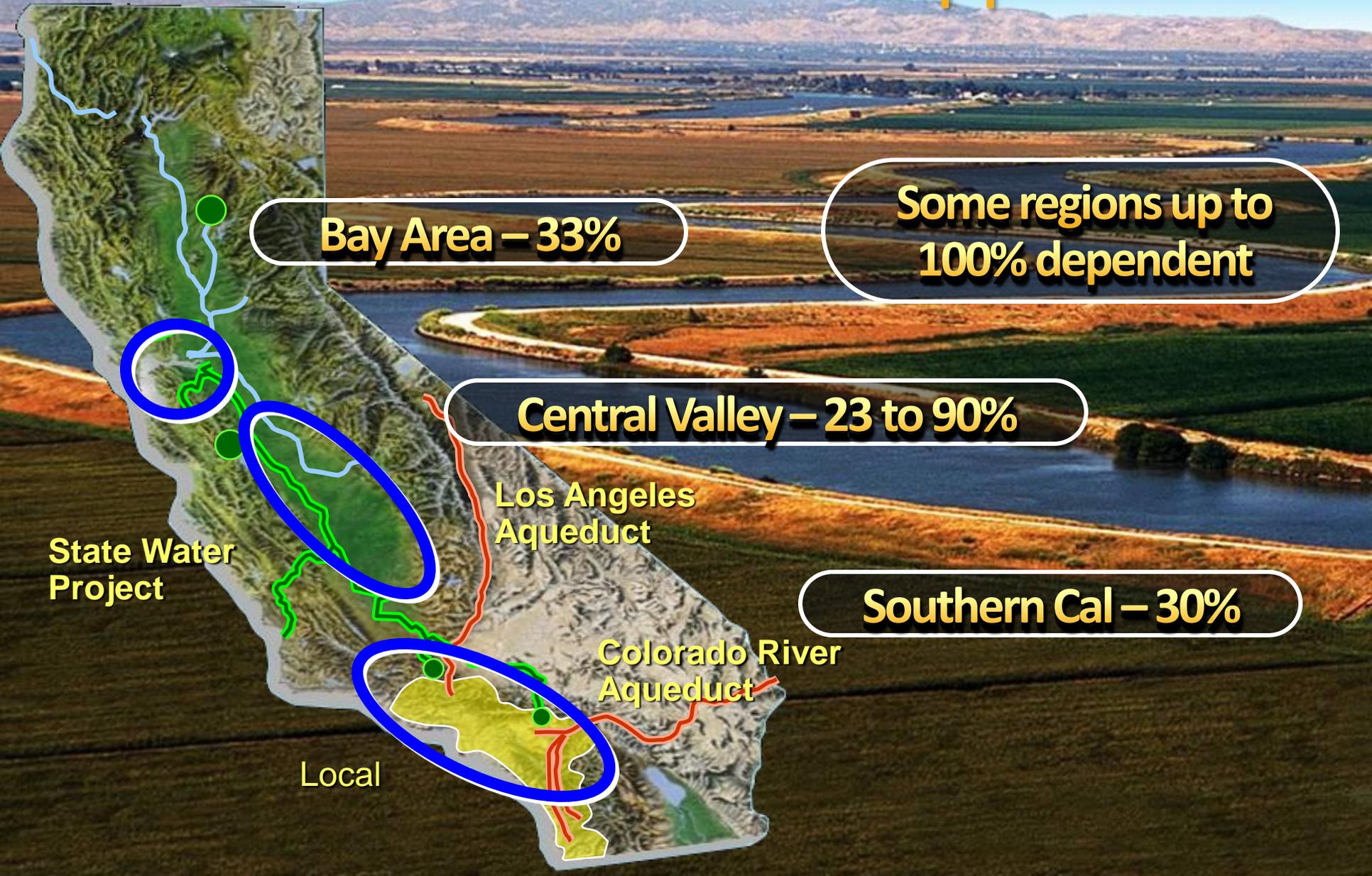


# Background

## South Slope Stabilization at Diemer



# Reliance on Delta Supplies



**Bay Area – 33%**

**Some regions up to 100% dependent**

**Central Valley – 23 to 90%**

**Southern Cal – 30%**

# Seismic Vulnerability



% 66% probability of > 6.5 magnitude earthquake by 2032

Bay-Delta Region Major Faults

- Japan likely most prepared country in world for major seismic and tsunami events

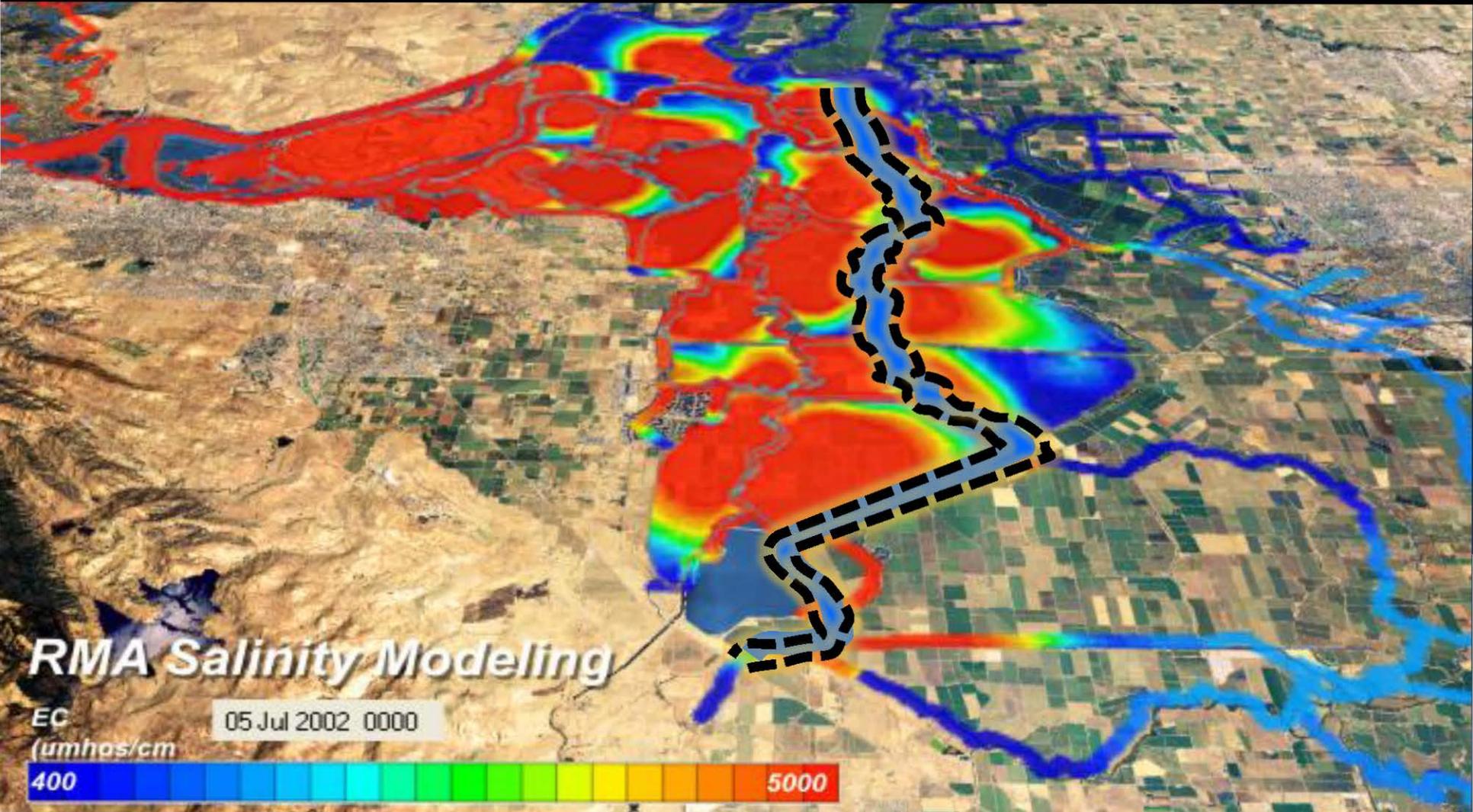
- March 2011 disaster far exceeded estimates and mitigation planning

- Consequences for underestimating and inadequately planning for catastrophic levee failure in Bay Delta are unacceptable



# Emergency Freshwater Pathway

Requiring Breach Closure and Slump Restoration



6 months

# Ecosystem Restoration & Preservation Targets

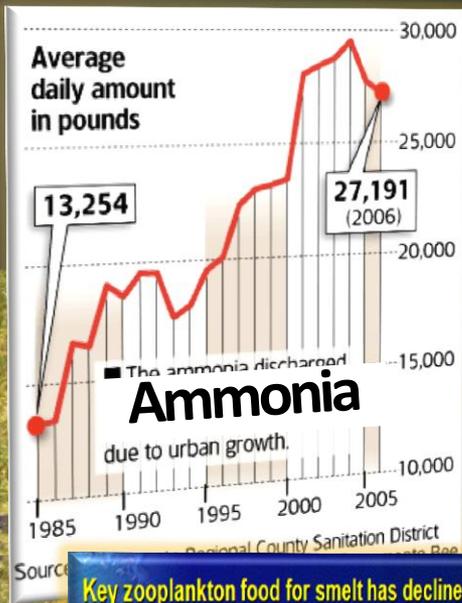


Restoration & Preservation	Targets
Tidal Marsh	65 - 105,000 ac
Seasonal Floodplain	10,000 ac
Riparian Habitat	5,000 ac
River Channel Margin	20 mi
<b>TOTAL</b>	<b>80 - 120,000 ac</b>

Ecosystem Restoration Target = Twice the size of Washington DC <sub>14</sub>

# Other Stressors

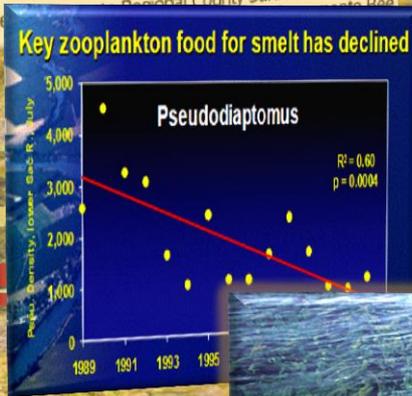
Toxics, Unscreened Diversions, etc.



Sac River



Predator Control



Corbula amurensis (Overbite clam)



Ocean Conditions

# Conveyance Alignment Options





**Addressing Grid Vulnerabilities:  
September 8, 2011 Southwest Power Outage  
An Informational Hearing**

Wednesday, October 26, 2011 at 2:00pm  
San Diego Council Chambers, City of San Diego Administration Building

On Wednesday afternoon, October 26, 2011, the Assembly Utilities & Commerce Committee and the Joint Legislative Committee on Emergency Management held a combined hearing to recap a widespread regional power outage that affected 4-5 million people in Southern California, Arizona, and Mexico and to investigate the incident(s) that may have attributed to an outage of this size. The hearing was held in the City Council Chambers at the City of San Diego's Administration Building and started at 2:00pm and continued until 6:00pm. Over 75 people attended.

Of the Committees' combined 29 members, both Chairs (Assemblymembers Steven Bradford and Bonnie Lowenthal), Senator Christine Kehoe, and Assemblymembers Nathan Fletcher, Roger Hernández, and Beth Gaines were able to participate. Assemblymembers Toni Atkins, Ben Hueso, and Marty Block were also in attendance as representatives of the affected areas.

This report records who spoke at the hearing (see the white pages), reprints the Committee staff's briefing paper (see the blue pages), and reproduces the written materials provided by the speakers and others (see the yellow pages).

The Assembly Speaker's Office of Member Services audio and video-recorded all comments by the legislators and other speakers. That recording is part of the Committee's official records of the October 26<sup>th</sup> hearing.

The Speakers

The Committee's agenda listed 17 invited speakers; nobody else spoke to the legislators about their concerns and suggestions during the hearing's public comment periods. This section captures the highlights of presenter's comments. The appendix reprints what the speakers gave the Committee (see the yellow pages).

**Assemblymember Bradford** spoke first and began by welcoming everyone to San Diego. Mr. Bradford described the extent of the outage, which affected 4 to 5 million people and described the impact of the outage on public safety, communication systems, and wastewater treatment systems. He highlighted that the San Diego Gas & Electric Company dispatched workers to make home visits to all medical-need customers to ensure their safety through the outage. He also noted the loss of electricity caused a wastewater facility to discharge nearly 3.5 million gallons of raw sewage into sensitive habitat and the Pacific Ocean. Mr. Bradford pointed out that wireless services saw few failures and that where telecommunication outages occurred they were quickly restored. He asked that the focus of the hearing be on the roles and responsibilities to maintain electricity system reliability from the local, regional, and federal oversight organizations.

**Assemblymember Lowenthal** began her comments by introducing the Joint Legislative Committee on Emergency Management to those in attendance. She then proceeded to inform the audience that the importance of the hearing's topic, from the Joint Committee's perspective was highlighted by the fact that our electric grid was able to be "brought to its knees" by one event, or a series of events triggered simultaneously. She also expressed concern that power was not restored to some areas for a significant period of time, sewage spilled from water treatment plants and pumping stations, and wireless service ceased for hundreds of thousands of area customers. Assemblymember Lowenthal noted that she was pleased at the public's reaction (everyone remained calm), but hoped to hear from the presenters about their experiences, lessons learned, and any recommendations they would have for the future.

#### Balancing Authorities and Utilities

**Steve Berberich**, the President and Chief Executive Officer of the California Independent System Operator (CAISO), was the first presenter at the hearing. He began by explaining that really one of the five grids in the state of California was impacted. Technically the system had ample reserves and should have been able to absorb the difficulties with one grid. But, "something happened" in this instance, involving multiple, interconnecting balancing authorities. Berberich continued to say that this grid, in particular, was highly connected both nationally and internationally delivering power to 2.8 million customers.

Berberich then explained that on September 9<sup>th</sup> (the day after the outage occurred), all utilities and stakeholders involved convened a Joint Task Force to implement immediate measures to prevent this series of occurrences from happening again. At this meeting, the participants were able to identify 20 separate events that occurred over the course of 11 minutes on September 8<sup>th</sup> – resulting in the Southwest Outage. He noted the main incidents as the following:

- 1) Within the Arizona Public Service Company (APS), a worker trips a line.
  - a. The North EIA line was consequently knocked out of service. It is important to note that this single event should not have caused a cascade. And normal procedures were implemented to compensate for this accident.
- 2) 20 seconds later, a power plant in Mexico was knocked offline.
- 3) Two minutes later, transformers within the Imperial Irrigation District (IID) and California's first power plant went dark.
- 4) IID then lost its entire load.
- 5) IID's second power plant went offline.
- 6) IID's third power plant went dark.
- 7) APS lost transmission capabilities entirely.
- 8) Transmission between APS and IID ceased.
- 9) All of these events together tripped the emergency system at Southern California Edison's (SCE) San Onofre Nuclear Generating Station (SONGS) – a standard protocol to avoid power surges.

At some point immediately thereafter, millions of people lost power. Berberich then explained that the Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC) are conducting an investigation into this outage. He continued to say that while not much else is known, it is important to understand that SONGS going offline did not cause the blackout – the series of events preceding did cause SONGS to go dark but even taken by itself this one event would not have caused the blackout.

**Michael Niggli**, the President and Chief Operating Officer with San Diego Gas & Electric (SDG&E) was the second presenter on this panel. He began by explaining that of the 20 different events that occurred, the first 12 were balancing authority events. He then noted that over seven million people were affected – the first time ever that all residents in San Diego County experienced an outage simultaneously.

Niggli then proceeded to explain that one of the main issues for SDG&E, from his perspective, was that the first thing that happens in a blackout is that people reach for their cell phones. SDG&E used satellite phones, texts and emails to communicate internally and with their customers. And, coincidentally, just ten days prior, the company had reviewed their “black start” capabilities. With this in mind, the utility immediately activated its emergency operations center, staffed by 350 people. For reference, this center has been activated 18 times in the past 12 years.

Niggli also noted that the Southwest Power Outage was, to date, the largest Twitter event in history. Recognizing the use of this platform, the utility itself sent out 130 “tweets” and over 600,000 emails to customers. They also sent a separate message to all of their customers who defined themselves ahead of time as “medical customers.” That said Niggli was upfront about the fact that not all of SDG&E’s medical customers received their notifications. So, the utility sent staff door-to-door with 180 employees making contact with approximately 2,000 “medical customers.” This action was repeated when the power was restored.

Niggli further explained that SDG&E has found that emergency radio stations are vitally important during crises. They used this platform to ask customers to turn off their air conditioners and non-essential load items because it would help the utility to avoid a surge when the power was restored. In the same vein, Niggli noted that the U.S. Navy normally takes up a big portion of SDG&E’s load, but they voluntarily turned on their ships to produce their own power in order to remove themselves from the grid.

As a result of these and other activities by SDG&E all power was restored within 12 hours. The utility received reports that hospitals had back-up generators that weren’t working and that in some cases, sewage had spilled. When these calls came in SDG&E restored power to those “critical” customers first.

In terms of lessons learned, Niggli explained that thus far, SDG&E has determined that they:

- 1) Need to get cell phone numbers for their customers;
- 2) Need to remind their large customers to test their generators periodically;
- 3) Need to recognize that half of their customers accessed their website via smart phone; and
- 4) Need to remind people to have corded phones, where possible, that will allow for use of 9-1-1 and Reverse 9-1-1 technologies during incidents like this.

The next presenter on the first panel was **Donald Robinson**, the President and Chief Operating Officer of APS. He explained to the legislators that a comprehensive and thorough review of this event will take some time – especially considering that it was the product of many different events occurring simultaneously. He reiterated that the committees and the public at-large should know that this was not caused by the actions of a single utility worker; the system is built to withstand that type of error. Robinson concluded his short statement by publicly stating that APS is committed to ensuring power reliability with their customers.

The fourth presenter was **Kevin Kelley**, IID's General Manager. He explained that on IID's end, the utility had components out of service at the time for refurbishing and maintenance. He also noted that, on September 8<sup>th</sup>, the temperatures in the area were causing heavy east-to-west flows of power. Kelley added that when IID's Coachella transformers overloaded and tripped, there was no supporting import of power for the utility to utilize. He concluded his statement by noting that it took IID approximately four hours to restore power to 90% of its affected customers.

**Heather Polzon**, with FERC and **Earl Shockley** with NERC next made a joint presentation on the part of the oversight agencies. They explained that in their inquiry, they have established two objectives:

- 1) Identify the causes of the outage; and
- 2) Identify actions that may prevent this sort of event in the future.

Polzen then explained that the fact that this inquiry is being conducted jointly by both FERC and NERC is a sign of significance. As part of their investigation, they are also utilizing the expertise of three other industry representatives (none of which is affiliated with the affected companies). FERC and NERC intend to conduct interviews related to the outage. This is an ongoing process and will take time to complete. Polzen then concluded her and Shockley's joint statement by assuring those in attendance that the agencies intend to release a public report at the end of their inquiry.

**Mark Maher**, the Chief Executive Officer of the Western Electricity Coordinating Council (WECC), was next to present. He began by explaining to the committees that the western interconnection includes 14 states, Baja California and portions of Northern Mexico, and Alberta and British Columbia in Canada. Maher then noted that WECC has delegation authority from these territories to act as a reliability coordinator function. In this role, WECC anticipates also publishing their lessons learned as part of a report to be shared with the public and important stakeholders.

Maher noted that in its role, WECC can direct corrective action, but they do not operate the system. During an event, their job is to restore power as soon as possible to customers. He concluded by reiterating that the Southwest Power Outage was a hugely complex event and that a report and conclusions will take some time to be completed.

The final presenter on the first panel was **Valerie Beck**, with the Electric Generation Performance Branch of the California Public Utilities Commission (CPUC). Beck explained that the CPUC has authority over power plant safety and reliability. In their role, they contacted all of San Diego's power plants after SONGS went offline. She also reiterated that the Southwest Power Outage was not started by one individual APS worker – but by “n minus 20” events.

Beck noted that the CPUC is not part of the Task Force previously mentioned by Steve Berberich, but that SDG&E has agreed to give the CPUC all information also submitted to WECC, CAISO and FERC/NERC for the purposes of investigating this incident. She is hoping for similar voluntary participation from IID. Beck concluded by noting that the CPUC doesn't have authority over WECC or CAISO, but they can subpoena these agencies if need be – although she's hoping that won't be needed.

**Assemblymember Bradford** noted that witnesses did not provide schedules about when the many reports mentioned were to be released and he inquired about the possibility of interim reports. He hoped that someone would be able to speak to this moving forward.

**Assemblymember Hueso** then asked about the lead agency on this investigation – who would it be? Heather Polzen responded that FERC and NERC are technically leading the inquiry. That said, the Joint Task Force (mentioned by Berberich) is also conducting an investigation with CAISO, and each agency is producing their own individual analyses. Mark Maher noted that WECC’s report timeframe was an estimated 120 days. He added that in most cases, the agencies know what pieces failed – they just don’t know why these particular combinations happened or what finally tripped the power in so many households.

**Assemblymember Fletcher** asked if anyone knew how many events were independent versus those that were triggered by others. Berberich responded that CAISO is working with IID to receive that utility’s telemetry into the system, as this information wasn’t available before the outage. He added that from what he believed, all of these events are related to each other (except for the power plant outage in Northern Mexico) and that they are all related to the initial event.

Assemblymember Fletcher then asked if CAISO would share its conclusions with the other balancing authorities. Berberich responded that they would.

Maher then added that WECC receives shared information from all of the previously mentioned authorities, but this is done via a cut-off level of voltage, so they only receive some information from IID. That said, staff at WECC modeled this event without IID’s two transformers and they do not believe an outage would’ve happened. He reiterated that this is a “cascading event that we do not understand.”

Assemblymember Fletcher then asked if Maher believed that the balancing authorities were all sharing the appropriate information. Maher answered “yes,” but that they are still learning with this event and they are getting more information as needed. He believes this is why IID is now voluntarily sharing information with CAISO.

Assemblymember Fletcher then asked why IID wasn’t sharing this information before-hand. Kelley responded that flows that day were unprecedented. He then continued to say that IID rejects the notion that they contributed to this cascade. They do not believe that communication and/or the sharing of information was an issue with this event.

**Senator Kehoe** then asked the agencies to clarify their investigation and report timeframes. The following were answers given:

- Berberich (CAISO) 6 months-1 year
- Polzin (FERC/NERC) 1 year
- Berberich then also noted that the Task Force mentioned was about two months away from being able to publish what they have found.

Senator Kehoe then inquired as to whether APS would be changing any of their policies in light of this event. Robinson responded that APS has joined CAISO’s Task Force and that they have been proactive in working with all the stakeholders on this issue.

At this point, Berberich noted that CAISO does not have a practice of isolating or “islanding” balancing authorities. Consequently, information from IID may not have stopped this cascade. He added that additional information could have been helpful, but that he doesn’t think this could have stopped this event from happening as it just occurred too quickly.

Polzin then concluded by stating that while the timeframe of one year was mentioned, no actual timeframe has been given. This is an inquiry on the part of FERC/NERC and not an investigation. Senator Kehoe asked if this could be bumped up to an investigation. Polzin responded that yes, this could happen, but that right now the agencies are focused on the causes of this outage and recommendations moving forward.

#### Emergency Responders

**Ronald Lane**, the Director of Emergency Services for the San Diego County Office of Emergency Services (SDCOES), was the first presenter on the second panel. He explained that SDCOES has conducted a preliminary review of the emergency response actions taken and they have two initial findings:

- 1) Emergency responders need to protect intersections and life lines; and
- 2) The county conducted two evening news conferences as their form of communication (this was transmitted via county websites).

Lane explained that there were many impacts from the Southwest Power Outage, however.

- a) The county's 9-1-1 dispatch operations were maintained during this time via backup generators, but the numbers of calls tripled to report people stuck in elevators, medical patients and traffic issues.  
Recommendation: install back-up battery power for traffic signals.
- b) There was no increase in crime during this event.
- c) In regards to healthcare, emergency rooms in the county were swamped with residents needing oxygen (typically people who use oxygen tanks in their home that were now useless with no power).  
Recommendation: establish centers within affected communities to care for this population in the future to avoid overcrowding emergency rooms.
- d) The county's 9-1-1 emergency alert system, Alert SD, was used 27 times to broadcast messages. Unfortunately, many residents now only have cordless phones or cell phones.  
Recommendation: households should have a land line in place for emergencies.
- e) The public had difficulty accessing information. The county used social media as much as possible.  
Recommendation: all residents should be encouraged to make use of battery radios during emergencies.
- f) In regards to transportation, the county's grade crossing devices were an issue, and many of them failed. Additionally, the San Diego Airport still had power, but passengers couldn't be screened. This meant that planes could land, but not take off. Similarly, the baggage carousels are electric and could not operate.
- g) The power outage in San Diego impacted a gas pipeline, so in addition to electricity, some residents had no access to gas.
- h) ATMs throughout the county did no operate.  
Recommendation: residents should be encouraged to have cash on hand for possible emergencies.

**Tony Rouhotas**, the Fire Chief and Office of Emergency Services Coordinator for the Imperial County Office of Emergency Services was the second presenter on this panel. He began by explaining that this was an event that served to remind families that they need to be prepared.

He reiterated that SDG&E activated their emergency operations center – and noted, for the sake of the committees, that IID did as well (Imperial County emergency management officials were able to talk to IID through their radios).

From his perspective, there were several things to take note of:

- 1) There was a lack of power at border crossing sites. Border Patrol was still able to check cars and people, but the process was much slower.
- 2) It was 115 degrees that day in some areas, so they worked especially to notify and check on the elderly and infirm. In fact, the County partnered with Social Security, the Red Cross, and the Department of Public Health to send people to homes and convalescent centers to check on people.
- 3) Two hospitals in Imperial County both moved to generator power. They reported no large increase in patients. Brawley and El Centro hospitals were back up and operating within 90 minutes of losing power.
- 4) All generators in the county appeared to be up and ready and functioning.
- 5) Residents of Imperial County still had some cell phone coverage.
- 6) The county set up cooling centers for those in particularly hot areas needing air conditioning.
- 7) There were some minor traffic incidents, but nothing major.

**Senator Kehoe** asked if either of the presenters or counties were in contact with Baja during this incident. Lane replied that they were not in contact in San Diego, but that the California Emergency Management Agency was in touch with them and they would've handled any international issues.

Chief Rouhotas also noted that Imperial County has a mutual aid agreement with Mexicali and they were in contact right away (as the area has 1.3 million people).

**Senator Kehoe** then asked Ron Lane if San Diego's 9-1-1 system was threatened. He responded that on an emergency management front, they had some trouble responding in the first hour as they were flooded with calls of every kind (elevators, traffic incidents, etc.), but that the system as a whole was not threatened. He added that for these types of incidents, there is little that emergency managers can do – that it is imperative for larger customers (and for county traffic managers) to make use of back-up generators whenever possible.

**Assemblymember Atkins** then asked if San Diego's transportation system has a plan regarding the county's electrified trolleys. Lane responded that yes, the system has a representative in the county's emergency operations center. During this incident, the system had to abandon their electrical system (i.e. the trolleys), and that buses got stuck in traffic snarls, but that trains continued to operate.

**Assemblymember Lowenthal** then asked about funding for these events within both San Diego and Imperial Counties. Lane responded that they could've requested support from the state via CalEMA (and they might have needed to if the incident lasted longer), but they were able to manage operations locally.

Assemblymember Lowenthal then asked about interoperability during the incident. Lane explained that his managers are able to talk to everyone currently as they are finally, all on the same system, including public health, schools, the county – as far reaching as those in Yuma, Arizona. In regards to this system, they've installed back-up generators at all radio sites as well, to maintain communication during incidents such as this.

### Wireless Communications

**Steve Carlson** with the California Telecommunications Industry Association (CTIA) was the first presenter in this third panel. He informed the committees that as an industry, the companies understand that continuity – especially in times of crisis – is critical. To this extent, the industry needs to be able to place cellular sites. It is also important that they have access to an adequate amount of spectrum.

That said, Carlson noted that during emergencies, companies have an ability to boost power in some areas to compensate for issues (i.e. offline towers) in other places. They also provide back-up generators and back-up/temporary cell sites when needed. This ability is severely limited, however, because of both aesthetic and environmental reasons.

**Lowell Handy** with Verizon Wireless was the next presenter. He noted that the Verizon network performed well. In general, it “stayed up” even while handling 3-7 times the amount of calls it would normally route. He noted that later in the evening on the 8<sup>th</sup>, some individual cell sites did lose power, but this was managed. He also added that the network withstood three times the normal amount of messaging traffic. While this was good for this incident, Verizon ultimately believes they need to build seven times their current infrastructure to plan for the absolute worst case scenario sorts of events.

**Steven Casey**, with AT&T, then spoke about his company’s experiences during the outage. He explained that the company’s switching offices remained up and functioning; that their voice-over internet protocol (IP) service performed well, and that their U-Verse and broadband technologies all have built-in back-up power as well. That said, Casey noted that while the majority of their sites have back-up power, there were nevertheless disruptions due to heavy usage. Some towers also lost power. Casey continued to explain that AT&T’s battery back-up capabilities are designed to hold power for an additional eight hours under optimal conditions. During the Southwest Power Outage the company needed additional generators for which they contacted vendors in surrounding counties and around the state.

**Senator Kehoe** asked if AT&T was taking steps to work towards back-up power generation for their sites. Casey responded that they are a part of the Task Force and that they expect recommendations and an analysis within the next 30 days. Senator Kehoe asked if they would share their portion with the public or their customers. Casey responded that he did not know.

### Wastewater

The first presenter on the last panel was **David Gibson** with the California Regional Water Quality Control Board’s Region 9 based in San Diego. Gibson explained to the committees that his agency was aware of two large spills during the power outage – one was 193,000 gallons, and the other was 1.4 million gallons. He noted that the City of San Diego was the only agency that reported any incidents or significant events, but that they did enact beach closures as a precaution. With this in mind, his Board has issued an investigative order into this matter and they could issue penalties of up to \$2/gallon spilled and beyond.

Gibson went on to say that only 2 of the county’s 300 pump stations failed – a sign that past work in this area has proven helpful. That said, with budget cutbacks both at the state and county levels, the Board currently has no spill response team to activate to investigate incidents like those reported.

Because of this, Coastkeeper actually posted information about spills first (before the City of San Diego). He has also asked for action on this matter by his Board.

**Roger Bailey**, the Director of Public Works for the City of San Diego was the next presenter. He added that the spills referenced by Gibson were in the San Diego Bay and the Lagunitas Lagoon. He noted that the City has worked closely with the affected agencies and that they are currently conducting a comprehensive report that will be issued to the Mayor, City Council, and Regional Water Quality Control Board.

**Gale Filter**, the Executive Director of San Diego Coastkeeper was the hearing's final presentation. She began by explaining that from 2007-2011 she was Chief of Enforcement for Emergency Response for the California Department of Toxic Substances Control. She was also an environmental prosecutor. In her opinion, the wastewater incidents in San Diego were not a matter of emergency response; they were an issue of poor management of sewage.

Filter reiterated that it is imperative that customers who have 24/7 power needs should have emergency back-up generation capabilities – including the city or county's water plants. She believes that after dealing with 10 years of fires in the San Diego region, the City should've been better prepared for this disaster. She added that, in her experience, when a 12 hour black-out is imminent and CalEMA issues a notice to be prepared for 72 hours that the city ignores the latter warning because it will cost money – but clean-up also takes money.

Filter noted that two days after the outage one of the sewage spills was discovered by volunteers with fish kill photographs – three football fields worth of dead fish. Under the California Fish & Game code, it is a strict liability to kill fish. And, their scientists have ascertained that the bacteria in the sewage that was spilled killed these fish.

**Assemblymember Fletcher** inquired about how the decision is made to employ back-up generators. Are companies relying upon appropriate electrical redundancy? Bailey responded that SDG&E is the City's most effective way to supply power to water stations. He added that 54 of 82 of the city's stations have back-up generators. They also have independent power feeds to five stations, two of which failed. Bailey added that the City will go back and analyze this issue, including the option of adding additional generators. Bailey then noted, for the record, that the City takes the issue of public health seriously – they have spent over \$400 million on these sorts of investments to date. They are hoping to issue recommendations on this subject to the City Council shortly. With that, he noted that the City – like any other government jurisdiction – finds itself in the dilemma of what to do with these sorts of investments in the face of a low-probability event.

### Legislative Solutions/Follow-Up Items

Suggestions for San Diego Gas & Electric (SDG&E):

- 1) SDG&E should initiate an effort to collect cell phone numbers for their customers.
- 2) The utility should remind their large customers to test their generators periodically.

Suggestions for the County of San Diego:

- 3) The County should install back-up battery power for traffic signals.
- 4) The County should consider planning to establish centers within affected communities to care for populations needing oxygen in the future to avoid overcrowding emergency rooms.

Suggestions for the City of San Diego:

- 5) The City should timeframe and capabilities of agencies to report spills and other incidents during emergencies.
- 6) The City should invest in emergency back-up generation capabilities for all of their water plants and facilities.

General Suggestions:

- 7) The public should be reminded to have corded phones, where possible, that will allow for use of 9-1-1 and Reverse 9-1-1 technologies during incidents like this.
- 8) Californians should be encouraged to make use of battery radios during emergencies.
- 9) The public should be encouraged to have cash on hand for possible emergencies.
- 10) In order to build in cellular redundancy during emergencies, the telecommunications industry needs to be able to place cellular sites. It is also important that they have access to an adequate amount of spectrum.
- 11) The Legislature should consider providing funding to agencies like the State Water Control Board for the purposes of investigating spills and other incidents during a disaster.



## **Joint Oversight Hearing**

### **California State Assembly Committee on Utilities and Commerce Joint Legislative Committee on Emergency Management Assemblymember Steven Bradford, Assemblymember Bonnie Lowenthal, CHAIRS**

#### **Addressing Grid Vulnerabilities: September 8, 2011 Southwest Power Outage**

**October 26, 2011**

**2:00pm – 6:00 p.m.**

**City of San Diego Council Chambers**

**City Administration Building**

**202 C Street, 12<sup>th</sup> Floor, San Diego, CA 92101**

#### **Opening Remarks**

**Assemblymember Steven Bradford, Chair, Assembly Utilities and Commerce Committee  
Assemblymember Bonnie Lowenthal, Chair, Joint Legislative Committee on Emergency  
Management**

#### **Panel 1: BALANCING AUTHORITIES AND UTILITIES**

- Mr. Stephen Berberich, President and Chief Executive Officer, California Independent System Operator
- Mr. Michael Niggli, President and Chief Operating Officer, San Diego Gas & Electric
- Mr. Donald Robinson, President and Chief Operating Officer, Arizona Public Service Company
- Mr. Kevin Kelley, General Manager, Imperial Irrigation District
- Ms. Heather Polzin, Attorney-Advisor, Investigations Division, Federal Energy Regulatory Commission
- Mr. Earl Shockley, Director, Reliability Risk Management Division, North American Electric Reliability Corporation
- Mr. Mark Maher, Chief Executive Officer, Western Electricity Coordinating Council
- Ms. Valerie Beck, Interim Program Manager, Electric Generation Performance Branch, California Public Utilities Commission

#### **Panel 2: EMERGENCY RESPONDERS**

- Mr. Ronald Lane, Director of Emergency Services, San Diego Office of Emergency Services
- Mr. Tony Rouhotas, Fire Chief/OES Coordinator, Imperial Office of Emergency Services

### **Panel 3: WIRELESS COMMUNICATIONS**

- Mr. Steve Carlson, California Government Affairs Counsel for CTIA-The Wireless Association®
- Mr. Steven E. Casey, Area Vice President of Construction & Engineering, AT&T Network Operations
- Mr. Lowell Handy, Director of Network, Verizon Wireless

### **Panel 4: WASTEWATER**

- Mr. David Gibson, Executive Officer, California Regional Water Quality Control Board, Region 9, San Diego
- Mr. Roger Bailey, Director, Public Utilities Department, City of San Diego
- Ms. Ann Sasaki, Assistant Director of Public Utilities for Wastewater, City of San Diego
- Mr. Gale Filter, Executive Director, San Diego Coastkeeper

### **Public Comment**



**California Assembly Utilities and Commerce Committee  
&  
Joint Legislative Committee on Emergency Management  
Briefing Paper on September 8, 2011 Southwest Power Outage**

**Abstract**

This paper discusses the operation of the transmission system with respect to the Southwest Power outage and power restoration, and community emergency management, wireless communication system, and wastewater treatment facility response to the blackout.

**I. Introduction**

On September 8, 2011 a power outage occurred that affected approximately 1.4 million electricity customers (4 to 5 million people) in California, Arizona, and Mexico. The outage began around 3:30 p.m. Power was restored in some areas within 4 hours and all power was restored within 12 hours.

The cause of the outage has been attributed to work being performed on a 500-kilovolt transmission line located in Yuma, Arizona at or near or the North Gila Substation operated by Arizona Public Service (APS). The North Gila Transmission line serves APS, Imperial Irrigation District (IID), and San Diego Gas & Electric (SDG&E) customers – the latter two of which are both in California. However, it is not clear if the work on the transmission line was a single event or one of a number of other events that caused the outage to spread throughout the affected area.

Specific to California, the outage impacted all customers of SDG&E and some customers of IID and parts of Southern California Edison (SCE) service areas in some parts of Orange and Riverside Counties.

Various critical infrastructure problems occurred during the outage, primarily involving waste water treatment facilities and wireless communication systems. Nearly 3.5 million gallons of sewage was released into the Los Penasquitos Lagoon and the Sweetwater Channel near the San Diego Bay and two wildlife preserves.

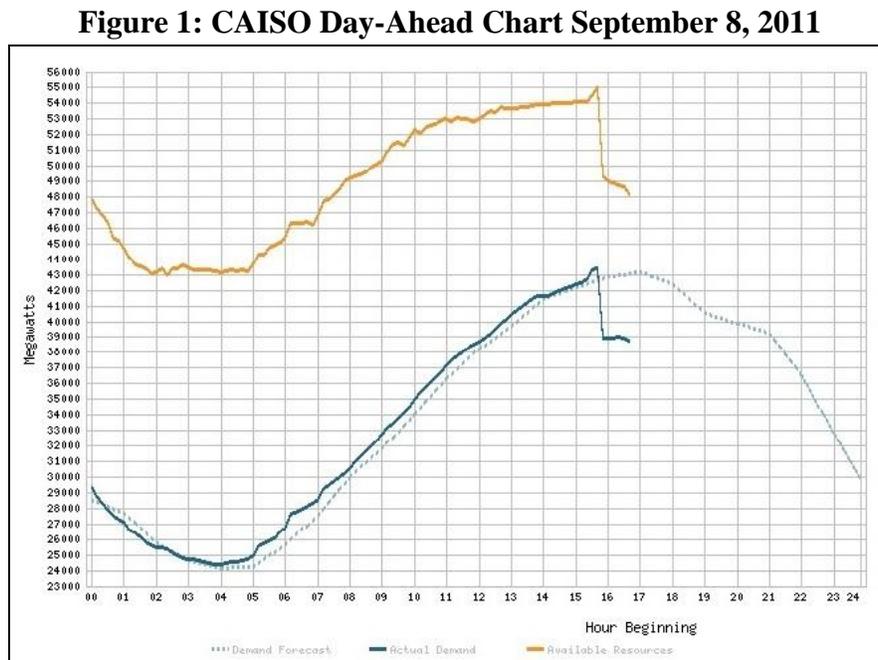
Local businesses lost revenues or revenue opportunities during the outage. For those businesses with products that rely on refrigeration, some inventory losses may also have occurred.<sup>1</sup>

During the outage, community emergency response plans were put into effect. San Diego Mayor Jerry Sanders issued precautionary 'boil water' alerts to local citizens within 13 areas of San Diego from possible adverse health affects related to consuming contaminated drinking water. SDG&E performed welfare checks on customers who are on medical accounts and provided frequent updates on the outage and efforts to restore power.

## II. Losing power and Restoring Power

Figure 1 illustrates the total power available throughout the California Independent System Operator (CAISO) region on the day of the outage. The upper line shows total available generation and the lower line shows actual real time demand for electricity within CAISO's region. The outage is clearly visible when the lines in the graph drop at roughly 1530 in the afternoon. While the graph shows that there was adequate generation to meet demand, this graph does not provide information on what was going on in the regions neighboring CAISO. It has been reported that Imperial Irrigation District, which is a neighboring region to CAISO, was at a near-record day for electricity demand at the time of the outage.

Figure 1: CAISO Day-Ahead Chart September 8, 2011



<sup>1</sup> SDG&E has a web page for customers to submit a claim for damages due to the September 8, 2011, power outage, pending the results of the investigations currently on-going. SDG&E is not assuming responsibility for any losses incurred as a result of the power outage. Once the investigations have been completed the SDG&E Claims Department will contact claimants. <http://www.sdge.com/customer/claims.shtml>

When the Arizona transmission line went out of service, power flows increased over other transmission lines connected to the same transmission system.

Transmission systems throughout the United States are managed by "Balancing Authorities."<sup>2</sup> For example, the California Independent System Operator and the Western Area Power Administration are Balancing Authorities. Some, but not all, utilities, such as the Imperial Irrigation District also serve as a Balancing Authority. Balancing authorities analyze generation and transmission schedules submitted a day in advance to manage or avoid real-time bottle necks in the flow of electricity within a prescribed regional boundary comprised of generation, transmission, and electricity loads.

California has six Balancing Authorities. However, there are other Balancing Authorities within the Western Region some of which were also affected by the Southwest Outage. Table 1 shows a list of the Western region Balancing Authorities. No fewer than five of the 35 Western Balancing Authorities were involved in or affected by this outage. While the topic of this hearing is the Southwest Outage, it is not clear whether or not other interdependencies exist in these other regions that could expose Californians to widespread outages again in San Diego or elsewhere in California.

**Table 1: Western Region Balancing Authorities**

<p><b>WECC-AZNMSNV (Arizona, New Mexico, Southern Nevada) Number of Balancing Authorities: 11</b></p> <p>Arizona Public Service Company, AZPS          DECA, LLC - Arlington Valley, DEAA          El Paso Electric Company, EPE          Gila River Maricopa Arizona, GRMA          Harquahala L.L.C. HGMA,          Imperial Irrigation District, IID          Nevada Power Company, NEVP          Public Service Company of New Mexico, PNM          Salt River Project, SRP          Tucson Electric Power Company, TEPC          Western Area Power Administration - Lower Colorado WALC</p>
<p><b>WECC-CAMX (California Mexico) Number of Balancing Authorities: 5</b></p> <p>California Independent System Operator CISO          Comision Federal de Electricidad CFE          Los Angeles Department of Water and Power LDWP          Sacramento Municipal Utility District SMUD          Turlock Irrigation District TID</p>

<sup>2</sup> In the San Diego Region the transmission system is managed by the CAISO and the IID. In this region of California, other Balancing Authorities were also involved in managing the transmission system. This includes Comision Federal de Electricidad (CFE) in Mexico, Arizona Public Service in Arizona, and Western Area Power Administration in Colorado covering parts of Arizona.

**WECC-NWPP (Northwest Pacific) Number of Balancing Authorities: 17**

Alberta Electric System Operator AESO  
Avista Corp. AVA  
Bonneville Power Administration BPAT  
British Columbia Transmission Corporation BCHA  
Idaho Power Company IPCO  
NorthWestern Energy NWMT  
PacifiCorp-East PACE  
PacifiCorp-West PACW  
Portland General Electric Company PGE  
PUD No. 1 of Chelan County CHPD  
PUD No. 1 of Douglas County DOPD  
PUD No. 2 of Grant County GCPD  
Puget Sound Energy PSEI  
Seattle Department of Lighting SCL  
Sierra Pacific Power Company SPPC  
Tacoma Power TPWR  
Western Area Power Administration - Upper Great Plains West WAUW

**WECC-RMPA Number of Balancing Authorities: 2**

Public Service Company of Colorado PSCO  
Western Area Power Administration - Colorado-Missouri WACM

Information systems within each balancing authority reported the change in power flows. Power flows increased to levels that were not scheduled and ultimately, reached levels that were at, or in excess of, safety standards. SCE's San Onofre Nuclear Generation Station (SONGS) was safely taken offline. When SONGS went offline it had the effect of keeping the outage from spreading further throughout California. In addition, a power plant operated by the Comision Federal de Electricidad (CFE) in Mexico was also taken offline.

To restore power, balancing authorizes available generators, and utilities established new paths for electricity to flow via other transmission lines. It is not clear if the amount of time needed to restore power could have been lessened by better transmission equipment or communication systems within the various balancing authorities.

*Reliability Oversight and Investigating this Event*

The Western Electricity Coordinating Council (WECC) provides coordination among the western regional Balancing Authorities in order to maintain a reliable electric power system in Western North America. Table 1 provides insights into the outage issue to the extent that California electricity reliability is affected by unanticipated events that may occur in a Balancing Authority that is not only not in California but may not have communicated with California Balancing Authorities with respect to maintenance or unexpected outage events that may be occurring that could or would impact California. Three of the Balancing Authorities involved in this outage were from the WECC-CAMX group and two were from the WECC-AZNMSNV group of Balancing Authorities. According to the California Public Utilities Commission (CPUC) the various balancing authorities involved with this outage do not regularly communicate with each other.

With regard to reliability of the electricity deliveries, reliability oversight of transmission systems has been delegated by the Federal Energy Regulatory Commission (FERC) to the North American Reliability Corporation (NERC). NERC has delegated regional reliability authority to

the Western Electricity Coordinating Council (WECC) for the Western United States. WECC has established reliability standards for entities within its region. One of the reliability rules is referred to as "N minus 1" which would require that a Balancing Authority be able to maintain reliability in the event that one part of the system fails (such as a transmission line or a generation facility).

Among other rules, WECC rules allow formation of 'reserve sharing groups' (RSG) which: "decrease the required level of contingency reserve carried by each member of an RSG by effectively coordinating the use of a pool of generation resources, thereby lowering the cost for all members. The allocation of contingency reserves to RSG members is based on the contracts within each RSG. Under most circumstances, when a Balancing Authority implements a reserve sharing event, it calls on reserves from other RSG members to replace a sudden loss of generation."

It is currently not known if the reserve sharing arrangements played a role in the inability of the various entities to continue to provide power.

Overlapping investigations are underway into the cause of the outage. These include:

- a) CAISO. The CAISO has established a task force to investigate the cause of the event. Members of the CAISO task force are: WECC, APS, SDG&E, IID, CAISO, CFE, SCE, and the Western Area Power Association (WAPA).
- b) FERC and NERC. In addition, FERC and NERC are conducting an investigation. In addition to the parties named in the CAISO task force, the FERC inquiry will include the CPUC and the Arizona Corporations Commission.<sup>3</sup>

While it is clear that these investigations will examine the cause of the outage, it is not clear whether the investigations will examine the steps taken to restore power to determine whether there are lessons learned that could have shortened the duration of the outage. It is also not clear if the examinations will look beyond this incident to determine whether there are other groupings of Balancing Authorities that might present potential for disruptions due to transmission and generation configurations that flow among and between various Balancing Authorities. This would be important to examine this both California itself and other regions. It is also not clear whether these reports will be made public or available to the Legislature for examination and ongoing analysis.

It may be relevant to reflect on the elimination of the California Electricity Oversight Board (EOB) along with all of its duties. The EOB was established as part of California's effort to restructure the electricity market in 1996. The goal of the EOB was to ensure that wholesale energy markets and the electric transmission system function reliably and provide electricity at fair costs to California's consumers and businesses. Governor Schwarzenegger eliminated the EOB on the basis that CAISO has developed extensive procedures for market oversight, and the CPUC has intervened with Federal Energy Regulatory Commission on market oversight issues. The EOB ceased operations on April 1, 2008. It is not clear that transmission reliability oversight was specifically transferred to either the CPUC or the Energy Commission.

---

<sup>3</sup> The Arizona Corporations Commission is the State's oversight agency for Arizona utilities.

Additional investigation may be warranted to determine whether California has adequate oversight of electricity reliability that might make California vulnerable to widespread outages that result from manmade or natural events within Balancing Authorities that are not located in California.

### **III. Reliability of Wireless Communication Systems**

The Joint Legislative Committee on Emergency Management held an informational hearing on the topic of emergency communications one month before the Pacific Southwest Outage occurred. At this hearing, wireless carriers, including AT&T, were clear in their assertion that the cellular network is not designed for everybody who has a cell phone in a specific region to use it at the same time.

According to AT&T, hundreds of cell phone towers in San Diego County shut down when the outage hit the region. AT&T was able to bring the towers back on line by bringing in generators, fuel, and technicians to restore service. Within six hours, about 99 percent of the towers were back in operation. AT&T landline service was unaffected.

Other carriers (Cricket, Verizon, Sprint, Nextel) saw almost no failures. Cricket reportedly was in the process of deploying generators when power was restored.

Usage spikes (voice and text) occurred around the time of the outage and then slowly dropped.

While it is not possible to provide a system that has no outage vulnerabilities, it is clear that the wireless industry can and should be taking steps to be prepared for, and respond in a timely manner to, outages caused by natural or manmade causes. For example, wireless service providers have developed mobile cell and satellite equipment, which can be deployed into and around an affected region in the event that a communication system failure occurs.

At the August hearing, representatives from AT&T asserted that, “given the shared nature of the wireless network, operators must design the networks to handle anticipated traffic loads.” While one could not have predicted or “anticipated” the Pacific Southwest Outage, the San Diego region in particular has experienced its share of emergencies throughout the past ten years. It is a reasonable expectation then, that redundancy of wireless capabilities would be a high priority in this area.

The Federal Communications Commission (FCC) currently has an open proceeding investigating reliability and continuity of communication networks. This proceeding began in April 2011 conduct a comprehensive examination of the reliability, resiliency and continuity of communications networks to provide service during major emergency (natural or man-made) and to consider whether standards are needed to ensure adequate service levels to meet public safety and/or critical infrastructure needs. This investigation is comprehensive, looking at all aspects of communication networks, including wireless, broadband, and voice over internet systems. It is examining the extent to which service providers provide and plan for continuity of service (including placement of personnel and equipment in the event of an unanticipated need to restore service); whether or not backup power or alternatives to backup power are adequate to address timely service restoration; and system redundancy to improve reliability. The FCC is also

examining the extent to which public safety, commercial entities, and utilities rely upon these communication systems. Capacity and overload issues as well as maintenance procedures and failure types are also being examined. The FCC will also take comments on what actions, if any, the FCC should take to foster improved performance and reliability. There is no information available on when the FCC will make its final recommendations.

According to the National Institute of Health , wireless-only households continue to grow:<sup>4</sup>

"Preliminary results from the July–December 2009 National Health Interview Survey (NHIS) indicate that the number of American homes with only wireless telephones continues to grow. One of every four American homes (24.5%) had only wireless telephones (also known as cellular telephones, cell phones, or mobile phones) during the last half of 2009—an increase of 1.8 percentage points since the first half of 2009. In addition, one of every seven American homes (14.9%) had a landline yet received all or almost all calls on wireless telephones."

Ronald Lane, Director of San Diego County’s Office of Emergency Services asserted at the August hearing of the Joint Committee, that 17% of homes in the San Diego region have no land line.

Some land line providers do provide a free low dial tone service for citizens to have access to a phone that will be able to call 9-1-1 in the event of an emergency. It is not clear how much this service is available or publicized by the land line providers in California.

A key “take-away” from the August hearing of the Joint Legislative Committee on Emergency Management was that additional public education was needed on both the parts of government agencies (i.e. emergency managers) and the wireless companies to inform the public of two things:

- a) Maintaining a land line is an important aspect of emergency preparedness that will allow for residents and families to remain in contact with loved ones and emergency personnel during prolonged disasters (in which power may be out for days at a time, which would reduce the ability to use cellular phones that have expired their battery life).
- b) During a disaster, people should make one or two calls to loved ones to verify their safety, and then refrain from using their cellular device to avoid contributing to a collapse of the system.

In the wake of the Pacific Southwest Outage, it is clearer than ever that a public education campaign on this topic is vital to the state’s ability to function during an emergency.

#### **IV. Backup Power for Pumps Providing Drinking Water and Wastewater Facilities**

According to a September 22, 2011 report provided to the Public Utilities Department of the City of San Diego, the San Diego water and wastewater system was able to deliver uninterrupted

---

<sup>4</sup> Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July–December 2009, Stephen J. Blumberg, Ph.D., and Julian V. Luke, Division of Health Interview Statistics, National Center for Health Statistics

potable water service to over 90% of its customers and treated over 97% of the sewage discharged to the system<sup>5</sup>.

### *Water System*

Thirteen areas in the City of San Diego lost water service as a result of not having emergency generators for the pumping stations. As a result, the City issued a precautionary order to boil water or use bottled water in those areas. At no time was the water system compromised (confirmed by water quality testing).

### *Sewage System*

When all electrical power was lost, two of San Diego City's pump stations (Pump Station 1 and Pump Station 64) associated with the regional wastewater treatment plants spilled approximately 2.6 million gallons of sewage into Los Penasquitos Creek and approximately 870,231 gallons of sewage into Sweetwater Bay. Beaches and parks 5 miles north and south of the mouth of Los Penasquitos Lagoon were closed and daily water sampling began on September 9, 2011. Beaches were reopened on September 14, 2011. Warning signs are posted while testing continues to warn individuals who may have contact with the water or the fish in the area. A bio-assessment is currently underway and two follow up assessments are planned for 3- and 6-month following to address the extent of any ongoing adverse impacts.

Voluntary standards from the Office of Water Program Operations at the Environmental Protection Agency recommend separate and independent sources of electrical power from either two separate utility substations or one substation and a generator. Both of the pump stations that failed had independent sources of power from two separate utility substations. The City contacted SDG&E regarding deployment of mobile generators to the pump stations. Power was restored before they were delivered. It is unclear whether SDG&E had a generator large enough to power either of the pump stations.

### *Generators for Backup Power Supply*

It not clear whether generator transfer switches at the electrical service equipment for the drinking water or wastewater stations were equipped with. A transfer switch provides a safe method of connecting a generator to electrical service equipment. Without a transfer switch it would require substantial time and labor to connect a generator to the station.

SDG&E has recently acquired 31 emergency portable generators of varying sizes (100kW to 800kW) to help support critical infrastructure during disasters, fires and other emergencies<sup>6</sup>. The San Diego County Office of Emergency Services (OES) has a list of these generators should they be needed during a region-wide emergency (water, sewer, telecom, evacuation center, etc.). SDG&E relies on County OES or a similar responsible agency to make the request for use of the

---

<sup>5</sup> Impacts of the September 8, 2011 Countywide Blackout of the Public Utilities Department, September 22, 2011, City of San Diego Public Utilities Department.

<sup>6</sup> SDG&E emphasizes that its portable generators are not intended to take the place of prudent emergency preparedness and planning. Customers that require 24/7 uninterrupted power such as hospitals, water and wastewater utilities and communications should have permanent back-up emergency generation.

portable generators. For example, during the 2003 wildfires, SDG&E deployed a generator to the Ramona Water District.

## V. Citizen Preparedness

As a result of the widespread fires that the San Diego Community has suffered throughout the past decade, it is likely that of all regions in California, the San Diego citizenry should be best prepared for an emergency such as a power outage lasting for up to 12 hours. The California Emergency Management Agency (CalEMA) recommends preparing for a minimum of 72 hours of self-sufficiency in the event of a serious crisis.<sup>7</sup>

From all newspaper accounts, it appears that most citizens were able to manage through the outage without any serious or widespread problems (health emergencies, public safety, crime, food). The local citizens acted responsibly, heeded the warnings of emergency responders, and provided support to each other throughout the event.

Mayor Sanders was in contact with SDG&E, and San Diego's police and fire departments, and activated the region's emergency operation center accordingly. In addition, the Mayor advised the community to minimize use of landlines and cell phones and restrict travel to emergency purposes only.

SDG&E deployed nearly 200 workers to provide welfare checks on medical and life support to customers not reachable by phone. Workers knocked on over 1,800 doors both during and after the outage to ensure their customers' safety. They also utilized other communication channels such as Twitter, email and their website to provide updates. In addition, SDG&E coordinated with government emergency responders during the incident to provide information on the extent of the outage and updates on progress toward restoring power.

SDG&E worked with media at the local, state and national level providing live interviews, outage/restoration information, and safety information. Police, sheriff and fire departments were also updated regularly and local, state and federal elected officials were briefed throughout and after the event.

The San Diego Police Department reported no major incidents, no increase in violence and remained fully operational receiving 911 calls and dispatching services during the outage.

That said several media outlets covered allegations that students at California State University, San Diego (San Diego State University, or SDSU) were asked to leave the dormitories on campus during the outage. According to the *Los Angeles Times*, resident assistants knocked on doors in the blacked-out Chapultepec Hall dormitory in particular to order students to "leave the building and go home or stay with friends." The paper further alleged that resident assistants told students who remained in the dorm that they would have to surrender their campus ID cards so that administrators could keep tabs on those staying. SDSU has denied these allegations through

---

7

<http://www.oes.ca.gov/Operational/OESHome.nsf/978596171691962788256b350061870e/55C950F3BE85D1C688256CD8007CD9CB>

a letter from Sally Roush, Vice President for Business and Financial Affairs, to the respective committees.

## **VI. Conclusion**

Throughout the past two decades, the Legislature has focused California's attention on the imperative of preserving the state's supply of electricity and the necessity of maintaining the grid to support higher usage at various times. While it is generally understood that outages will occur and that accidents will happen, it is crucial that governments, agencies, and private companies work to both minimize these incidents maintain a sense of calm and continuity for the public when emergencies occur. Maintaining reliability of communication infrastructure during natural or manmade events is also an imperative. It is important to note that during the Pacific Southwest Outage, disaster was avoided. The utilities, jurisdictions affected, and residents of Southern California very much deserve to be commended in this regard.

Nonetheless, there are still lessons that can be learned from the southland's recovery from this incident. It is clear that, while praise is merited, room for improvement exists within both the public and private sectors. It is imperative that we, as a state, continue to strive for improvement in this arena with a keen eye towards enhanced public safety and emergency management when outages occur.



SAN DIEGO STATE  
UNIVERSITY

Business and Financial Affairs  
San Diego State University  
5500 Campanile Drive  
San Diego CA 92182-1620  
Tel: 619 · 594 · 6017  
Fax: 619 · 594 · 6022  
Email: sally.roush@sdsu.edu

Sally Roush  
*Vice President*

October 13, 2011

The Honorable Christine Kehoe  
Chair, Joint Legislative Committee on Emergency Management  
State Capitol  
Room 5050  
Sacramento, CA 95814

The Honorable Bonnie Lowenthal  
Chair, Joint Legislative Committee on Emergency Management  
State Capitol  
P.O. Box 942849  
Sacramento, CA 94249-0054

The Honorable Steven Bradford  
Chair, Assembly Utilities and Commerce Committee  
State Capitol  
P.O. Box 942849  
Sacramento, CA 94249-0051

Dear Chairwoman Kehoe, Chairwoman Lowenthal and Chairman Bradford,

I am responding to the inquiry directed to the Office of the Chancellor of the California State University (“CSU”) regarding concerns about San Diego State University’s response to the massive power outage that occurred in San Diego County on September 8, 2011.

San Diego State University (“SDSU”) has a 14 MW co-generation plant with capacity to power much of the SDSU campus. When the Sept. 8 county-wide power outage occurred, a message through SDSU’s loud speaker system was broadcast stating that classes were cancelled. SDSU’s first priority for power was directed to as many of SDSU’s residence halls as possible. As standard practice to account for every resident in the Residence Halls during any emergency, hall coordinators and their staff collected ID cards.

The co-generation facility had to be disconnected from the SDG&E grid before it could be re-started on a stand-alone basis. All but three residence halls were quickly up and running on full power. Those three halls, including Villa Alvarado, Maya Hall, and Olmeca Hall are on the SDG&E grid, not the campus co-generation facility. Student residents of those three halls were advised to relocate to a large assembly room in Tenochca Hall where we provided cots, food and water. Chapultepec Hall is on SDSU’s co-generation facility, but co-gen power was not restored to Chapultepec until about 8:30 p.m. Students in all halls heard the 4:00 p.m. campus-wide message alert that indicated classes were cancelled. Some

students in Chapultepec believed they should evacuate the building, but the Residence Hall Coordinator informed them such was not necessary. Students were directed to the dining room, where food was available, to await the restoration of power. If students chose, they were allowed to check out of the residence hall system to stay with friends or family. No residential student was ordered to leave campus. When power restoration began throughout the county, at SDG&E's request SDSU exported 2 MW of power to assist SDG&E with its managed process to restore power incrementally and safely.

We are not aware of the source of the information in the *LA Times* article, nor did we receive complaints from students or their parents about our management of the situation.

We appreciate the opportunity to respond to this concern. Please feel free to contact me if you need further information or clarification.

Sincerely,

A handwritten signature in black ink, appearing to read "Sally F. Roush". The signature is fluid and cursive, with the first name "Sally" being the most prominent.

Sally F. Roush  
Vice President for Business and Financial Affairs

c: President Elliot Hirshman  
Members, Joint Committee on Emergency Management  
Members, Assembly Utilities and Commerce Committee  
Jackie Koenig, Committee Consultant

This page is a placeholder for pages 174 – 175 of this report.

These pages contain a September 6, 2011 editorial by the San Diego Union-Tribune Editorial Board, entitled “A disaster reality check”.

A copy of this editorial can be obtained by contacting the Sacramento office of

Assemblymember Bonnie Lowenthal  
P.O. Box 942849  
Room 3152  
Sacramento, CA 94249-0070  
(916) 319-2070

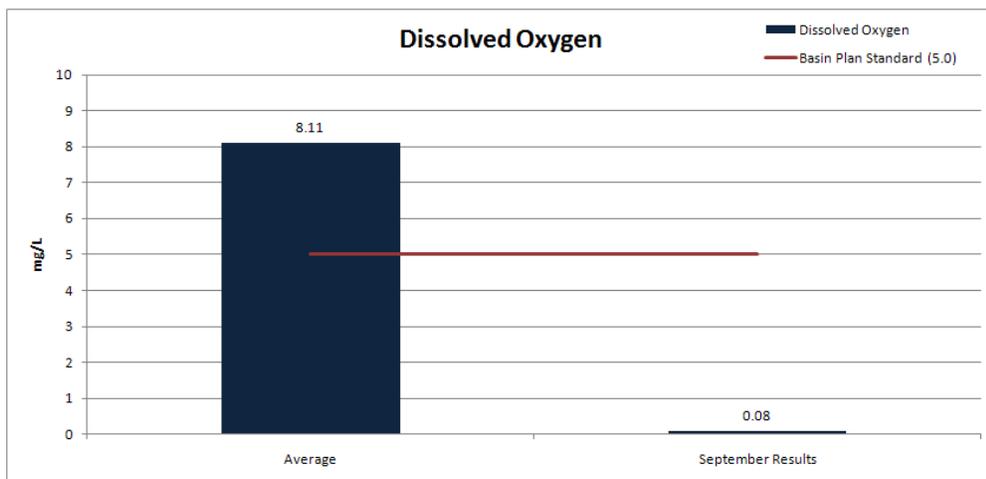
# When the lights go down in the city and the sewage flows into the lagoon..

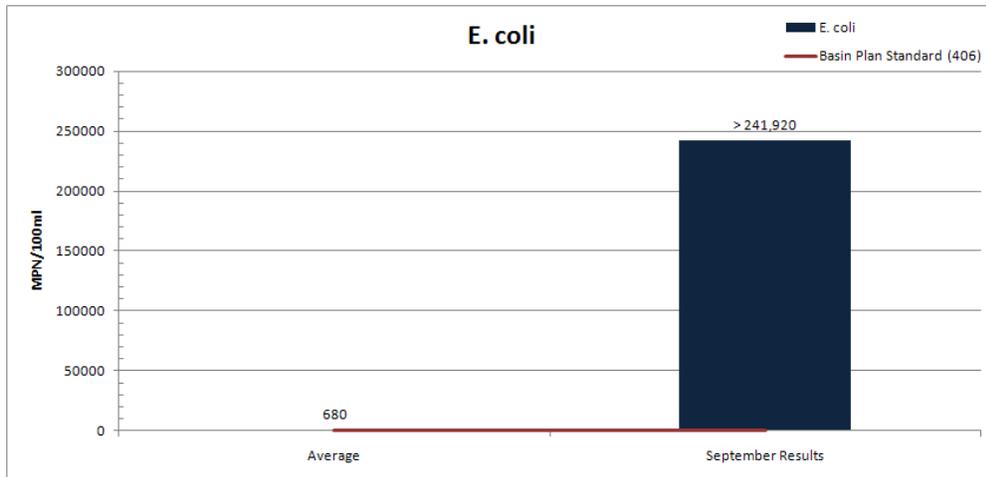
Written by [Travis Pritchard](#)



Did you see the [tons of stories](#) on the sewage spill that released 1.9 million gallons of sewage into the Los Penasquitos Lagoon. One thing all of these stores have in common is mentioning the beach closures that resulted. None of them mention the effects of the spill on the inland water systems.

Our volunteer water monitoring team went out on Saturday for our monthly routine water quality sampling. What they found at one of our sites is truly sickening. The samplers describe first being hit with the smell of sewage and then noticing the normally clear water was a strange shade of grey. Dead fish were floating on the surface and washed up on the bank.





The sewage spill killed these fish and polluted the stream. Dissolved oxygen levels were about as close to zero as you can get, causing the fish to suffocate. Levels of fecal indicator bacteria and nutrients that are associated with sewage were so high they were above my ability to measure them. An example is E. coli. The San Diego Basin Plan sets a threshold of 406 MPN/100 ml. That means a healthy stream will have no more than 406 E. coli bacteria in a 100 milliliter cup of water. My test tops out at 241,920 MPN/100ml. I don't know exactly how much E. coli was in that stream, but it was above that. Ammonia and Phosphorus showed the same pattern. The values exceeded my capacity to test them. Check out this photo of my ammonia test kits:



Compare this with the results I got several months ago from the [Tijuana River](#).

As far as I know, San Diego Coastkeeper's volunteer water monitors were the first ones to notice the effects of the sewage spill. We collected evidence and made reports to the Water Quality Control Board and to the Department of Fish and Game.

Volunteers discovered the effects of the spill, volunteers collected samples and volunteers analyzed the samples in the laboratory. It is a community effort that found and documented the spill. This speaks to the strengths of our volunteer program and our role as the watchdog for the people of San Diego. In a time of shrinking government budgets and limited resources, we are the additional eyes and ears for the environment. Our mission is to "protect the region's inland and coastal waters for the communities and wildlife that depend on them by blending education, community empowerment and advocacy."

This is a perfect example empowering the community to protect our waterways.

I am proud of our volunteers!

**Investigation of December 2011 Southern  
California Windstorm Outage  
A Legislative Oversight Hearing**

Friday, February 3<sup>rd</sup> at 2:00pm  
City of Alhambra, City Council Chambers

On Friday afternoon, February 3, 2012, the Assembly Utilities & Commerce Committee and the Joint Legislative Committee on Emergency Management held a combined hearing to recap a widespread regional power outage in Los Angeles caused by hurricane-force winds and to investigate the causes for delayed power restoration to many neighborhoods. The hearing was held in the City Council Chambers at Alhambra City Hall and started at 2:00pm and continued until 5:00pm. Over 50 people attended.

Of the Committees' combined 29 members, only the Chairs, Assemblymembers Steven Bradford and Bonnie Lowenthal, and Assemblymember Mike Eng were able to participate.

This report records who spoke at the hearing (see the white pages), reprints the Committee staff's briefing paper (see the blue pages), and reproduces the written materials provided by the speakers and others (see the yellow pages).

The Assembly Speaker's Office of Member Services audio and video-recorded all comments by the legislators and other speakers. That recording is part of the Committee's official records of the February 3<sup>rd</sup> hearing.

The Speakers

The Committee's agenda listed nine invited speakers; two other people also spoke to the legislators about their concerns and suggestions during the hearing's public comment periods. This section captures the highlights of their comments. The appendix reprints what the speakers gave the Committee (see the yellow pages).

**Assemblymember Bradford** spoke first and began by welcoming everyone to Los Angeles. He asked everyone present to participate in a moment of silence in memory of the Southern California Edison (SCE) employees who tragically lost their lives in January. Mr. Bradford asked the witnesses from the utilities, emergency responders and state oversight agencies to address: the effectiveness of communication with utilities and emergency responders; unanticipated factors that made recovery more difficult; lessons learned to help minimize effect of future events; and to discuss the preliminary results of the California Public Utility Commission's (CPUC) investigation. He noted that there has been widespread public criticism of SCE's response and the need to assess the response and learn from it. He also mentioned the need to examine the CPUC's role in oversight on this issue -- not only during the outage, but also the manner in which the CPUC manages and monitors the maintenance and repair budgets they authorize the utilities to expend.

He concluded by adding that the committees were also interested in hearing from the Los Angeles Department of Water and Power and Pasadena Water & Power in regards to this incident.

**Assemblymember Lowenthal** began her comments by introducing the Joint Legislative Committee on Emergency Management to those in attendance. She then proceeded to inform the audience that the importance of the hearing's topic, from the Joint Committee's perspective, was highlighted by the facts that: 1) power was not restored for a significant amount of time in some cases; 2) messages about the outage and possible power restoration were mixed at best, incorrect in some cases, and inconsistent throughout; and 3) law enforcement and first responder assistance was offered, and refused. Assemblymember Lowenthal noted that she was pleased at the public's reaction (everyone remained calm), but hoped to hear from the presenters about their experiences, lessons learned, and any recommendations they would have for the future.

#### Investor-Owned Utilities

**Lynda Ziegler**, an Executive Vice President for Power Delivery Services with SCE, was the hearing's first presenter and discussed the role of investor-owned utilities during the outage. She began, however, by addressing current issues with the San Onofre Nuclear Generating Station (SONGS), operated by SCE. Ziegler noted that SCE plans to inspect all 19,000 steam generator tubes (currently malfunctioning) in their plant and that they have inspected 13,000 thus far.

Ziegler went on to explain that between November 30<sup>th</sup> and December 1<sup>st</sup> (the time during which the windstorm raged in Southern California), SCE received thousands of "wires down" phone calls. The company gave these calls top priority, given their prior experience in this arena. That said, she added that this windstorm represented an unprecedented pattern of concentrated damage in the Los Angeles region. Recognizing this, they quickly called upon consultants and utilities from hurricane-prone areas to assist SCE with their crisis management.

In regards to communication, Ziegler explained that SCE operated two separate call centers during the windstorm. First responders and the public were instructed to call into the same line. Additionally, she acknowledged that electronic outage information was not accurate, nor was it updated regularly (because of the nature of the outage). Ziegler noted that in the future, SCE has decided to, in times of crisis, provide more general, but more accurate information to the public in an attempt to keep information up-to-date. Additionally, SCE is also exploring a new call management system to avoid first responders and local governments using the same system as the public.

Ziegler went on to address findings outlined in the after incident report published by the CPUC. She mentioned that the Commission alleged that SCE may have contributed to problems with power restoration by overloading poles. Ziegler noted that while SCE acknowledges that this may be the case in some areas (they do not confirm or deny this allegation), but that even properly loaded, their poles could fail in the face of 100+ mile per hour winds. The same is true of falling trees. Overloaded or properly loaded, electricity poles in California are simply not meant to withstand those sorts of extreme natural events. Ziegler also noted that many of the poles used by SCE are actually "joint" poles owned and operated by SCE and the telephone companies. In terms of the age of these poles (also mentioned as a possible factor in the CPUC report), Ziegler stated that SCE currently has a major pole replacement program underway, with an inspection schedule that has been approved by the CPUC. Finally, the CPUC report noted that many of the poles that had fallen and become a problem had been quickly destroyed by SCE invoking concerns about evidence retention.

Ziegler responded to this by noting that, at the time, SCE was focused solely on safe power restoration for the residents of Los Angeles County.

To summarize communication issues, Ziegler listed SCE's early lessons learned as the following:

- 1) Improved customer communications;
- 2) Outage plans and policies that clearly must be reviewed;
- 3) Improved call centers;
- 4) Increased use of social media to disseminate information;
- 5) The need to reach out to all medical accounts for up-to-date information about their populations served; and
- 6) Coordination with local agencies in regards to improved response.

Ziegler then clearly stated that the issues experienced during the windstorm outage "did not meet SCE's standards for the dissemination of accurate public information."

**Assemblymember Lowenthal** inquired about SCE's medical baseline customers. How did they fare? Ziegler responded that during the storm, SCE reached out only those customers who had signed up for "alternate" methods of receiving communication. They simply could not call all of these facilities and customers; but they could text or email them. Additionally, the utility made an attempt to call all "critical" accounts to assess their needs. In the wake of the storm, SCE has changed their policies and adopted a procedure by which utility employees will go door-to-door during future storms or disasters.

**Assemblymember Lowenthal** then raised the subject that apparently no request was made by SCE for mutual aid from other local agencies. Ziegler responded that SCE has a system for evaluating storms to assess the need for this type of outreach. And, during the windstorm, they did contact Pacific Gas & Electric (PG&E). Additionally, SCE used contractors within their service territories. Assemblymember Lowenthal then asked if this outreach included law enforcement. Ziegler stated that their plan does include outreach to law enforcement, but that within their crisis management structure, this event didn't trigger SCE's criteria for law enforcement mutual aid.

**Assemblymember Lowenthal** asked how often SCE updates their Emergency Response Plan (ERP). Ziegler responded that she was not sure. She did explain that the company has conducted three emergency drills in the past year, however. Assemblymember Lowenthal then stated that she believes that flexibility is needed here on the part of SCE. She added that common sense would say that reaching out to first responders would always stand to benefit the utility. Ziegler explained that SCE's mutual assistance plan is dictated by the CPUC's General Order 166 which defines a major outage as one affecting greater than 10% of a utility's customers. The windstorm outage did not reach this threshold and in fact, affected less than 5% of their customers. Ziegler reiterated that the company did reach out to PG&E, but that they didn't see the need to be flexible in this case with first responders as they concluded internally that mutual assistance crews would not help to speed power restoration.

**Assemblymember Eng** stated that public officials have the ability to help the adequacy of "boots on the ground," in these types of instances. He noted that SCE missed opportunities here and that they could've had the ability to reach out to a unified command structure with experience in this arena. He hopes that SCE is considering this for future disasters. Ziegler confirmed that the utility is looking into this and also looking at ways to provide first responders with additional information. Assemblymember Eng added that as part of their internal emergency management changes, he hoped SCE would seek input from elected officials and the public in their service area, as well.

**Assemblymember Bradford** asked if SCE could reimburse customers for damages. Ziegler responded that the company will pay claims based upon tariffs approved by the CPUC, and that currently, no specified amount has been determined.

**Assemblymember Bradford** then asked about the average age of SCE's electricity poles. Ziegler stated that, on average, they are 45 years old. She added that, in regards to the CPUC's idea about "evidence retention," SCE needed to cut up poles to move them out of the way. She explained that these are 3,000-5,000 pound poles. She added that additionally, the utility wasn't notified that they needed to save any portion of the poles; when the CPUC mentioned it, SCE amended their practice.

**Assemblymember Bradford** also asked about the company's policies regarding vegetation. Specifically, "what does the company spend on line clearing?" Ziegler responded that SCE complies with the PUC code in this respect and reminded the committee that the winds during this storm were so strong, breaking trees and blowing debris that, in her and SCE's opinion, "additional clearance wouldn't have mattered."

Ziegler then went on to explain that, while she was unable to answer the questions about the last update to the company's Emergency Response Plan, this was a topic that she was "clearly going to have to investigate." She noted that SCE would soon be naming a new director to examine all of these issues and that they have commissioned two after-incident reports: one internal and one external. The company will be taking a look at all of their processes. She added that safety and maintenance funds have declined within the last year, and that, as a result, the utility has completed their maintenance in cycles and schedules, but that the numbers of poles examined changes year-to-year.

#### Public Owned Utilities

**Randy Howard** with the Los Angeles Department of Water and Power (LADWP) was the first to present on this second panel. Howard began by explaining that on the eve of the storm, LADWP's Electric Trouble Section held the night crews over and called in others in anticipation of what was coming. The utility also shifted to a Response Level 2 category (part of an internal emergency rating system). According to Howard, LADWP had 144 crews on the ground by December 1<sup>st</sup> and 150 by December 2<sup>nd</sup>, at which point the utility moved to their Response Level 3.

On December 2<sup>nd</sup>, LADWP also called in additional operators for assistance to manage their crisis. This was, in part, to handle the over 10,000 calls that came into the utility from their field crews via cell phone alone. Howard noted that for their part, one of LADWP's main lessons learned was that they need to have their field crews use the company radios in an effort to avoid overloading the company's call centers.

Howard added that with LADWP's efforts, they were able to restore power to 60% of their customers within 24 hours and they resumed normal operations by December 4<sup>th</sup>.

On a communications front, the utility issued updates to their customers every 4-6 hours. These updates did not just include information about when power was restored, but also information about how to handle downed power lines and what to do about food stored in freezers and refrigerators now operating without power.

LADWP used their public information officer and Los Angeles Mayor, Antonio Villaraigosa, to spread this information regularly. Additionally, the utility used two-way text messaging with customers to identify 50 separate residents (those not living in concentrated powerless areas) that needed power restoration.

Howard further explained that the utility was “on the fringe” of opening its command center during the storm. In retrospect, he believes they probably should have. He also believes that the utility has other resources at its disposal that could’ve been used differently during this crisis. LADWP plans to update their protocols in their next Emergency Response Plan and the utility expects to issue a formal internal after-incident report within 30 days. They hope to make this same report public shortly thereafter.

In regards to electricity poles, LADWP reports having lost only 16 of their stock, and Howard noted that the utility does not believe that age was a factor with those that fell.

Howard also addressed the issue of first responder communication, noting that the utility met almost hourly with police, fire, transportation, public service, and traffic control representatives.

**Assemblymember Lowenthal** inquired about LADWP’s management of those customers deemed to be “medically needy.” Howard responded that the utility’s protocols in regards to this population is to ensure emergency safety and then to provide medical care (or help people seek said care). That said, he does not believe either of these were issues with LADWP’s medical clientele; but that the fire department was notified and ready to respond, if needed.

**Joe Awad** with Pasadena Water & Power also spoke on this panel to address their response to the windstorm. He noted that there was damage to their reservoir. He added that approximately 10% of the utility’s customers lost power and they received about 8,000 calls over a period of nine days. That said, he concluded that the City’s Emergency Operation’s Center opened quickly and helped them to manage their load considerably.

#### Regional & Local Response

Los Angeles County Fire Chief, **Daryl Osby**, was the first to give his perspective on the storm from the first responders’ point of view. He began by stating that he has been in this field for 30 years and he would agree that this Southern California windstorm was an unprecedented event. He explained that the Los Angeles County Fire Department (LACOFD) monitors the weather daily, with a big concern for wildland fires. In anticipation of this storm, they added 200 firefighters to their normal operations staff roster and redeployed resources throughout the County. That said, this was the most damage he’s ever seen caused by simply wind. For some perspective, he noted that LACOFD fields 900 calls per day on average, but was managing 1,600 calls daily during, and in the aftermath of, the storm.

In regards to emergency management, Chief Osby stated that generally, within the County’s unified command structure, SCE is a “good partner.” They were not, during this incident. He believes the most common theme concerned the breakdown in communication between the utility and residents and the utility and local officials and/or first responders. He stressed that he realizes that the utility engaged in a lot of hard work, but noted that there was a lot of independent action taken during this incident, as well. As an example, LACOFD sent out crews to clean debris independently from SCE – there was no coordination and they were lucky that no injuries ensued.

Chief Osby also noted that SCE's dispatch center was overloaded and that LACOFD had trouble procuring the appropriate people from SCE to staff command posts at the county's various command offices. He added that he will be meeting with SCE in the future and he anticipates a more structured flow of resources for command posts will be established at this time.

Chief Osby also noted that Temple City and La Canada-Flintridge were the hardest hit areas in LACOFD's territory. He added that the "mom and pop" water purveyors throughout the county experienced much difficulty. He was quick to say that he believes that SCE did a good job of restoring power to those companies – and it was important to LACOFD as they use this water to fight fires.

In his opinion, the most important aspects that need work on SCE's part are coordination, proper training and the establishment of some sort of command structure; he believes that scenario planning is less of an issue if the right management practices and structure are in place regardless of incident.

Chief Osby then switched gears to the budget and noted that his has been reduced in the last few years. Just this last year, he has had to deal with a \$5 million reduction. LACOFD utilizes the 2<sup>nd</sup> largest inmate crew with 500 inmates helping to fight fires. In years past, they had \$8 million for this aspect alone, but that amount has been reduced to \$3.5 million. Today, he has no commitment from anyone at the county or state level about what he can expect with his budget.

**Assemblymember Lowenthal** asked Chief Osby if he had any thoughts on interoperability during the storm, and inquired specifically about the use of LA-RICS to potentially manage this sort of thing in the future. He responded that he does not believe that LA-RICS presents a challenge or a benefit here, really – it is not always great to have utilities operating on public safety channels. He believes that the failures during this event were at a higher level and began with a lack of coordinated efforts and plans. That said, Chief Osby did suggest that he would like to see SCE and other utilities adopt SEMS (the Standardized Emergency Management System employed by first responders throughout California for unified command during a disaster). He stresses its importance in the terms of a common language and structure and he firmly believes that the utilities should employ this system.

The City of San Marino's Fire Chief, **Jim Frawley**, was the second presenter to provide the committees with his perspective of the storm. Chief Frawley explained that in San Marino, they utilized the city's Reverse 9-1-1 system to provide information to residents.

In regards to SCE specifically, Chief Frawley stated that he also does not believe that the company has an effective incident command structure in place. Or, as a correction, he noted that they seem to have one, they just chose not to employ it in this instance. He noted that he personally drove to their offices and talked to field representatives to get a handle on what was going on in his territory. Additionally, Chief Frawley believes that all of the other problems experienced by SCE during the storm stem from this problem. He thinks SCE should put something on paper to give first responders (and the public) an idea of how they manage disasters. Chief Frawley also expressed that he would like to see a mandate that utility companies train in, and utilize, SEMS and NIMS (the National Incident Management System). He adds that he believes this is true for all utilities: gas, electric, and water. He also offered to personally sit down with any utility to help them develop their emergency management plans or talk to them about SEMS.

Chief Frawley also offered that he would like to see the Legislature require private utility companies to work with local first responders on the development of their Emergency Response Plans. He concluded by noting that, regardless of how things turned out, it's important to note that everyone here does want to do the right thing.

**Joseph Payne**, the police chief from the City of South Pasadena was the final presenter on this topic. He began by informing the committees that he was an emergency services coordinator in his prior role and that he saw a similar windstorm in 1997; although he noted that many of the trees throughout the region are bigger now. He noted that because it rained before this windstorm, it created exponentially greater damage as those bigger trees were now saturated with water, as well. According to Chief Payne, the City of South Pasadena lost 200 trees and they have, to-date, spent \$500,000 in costs to restore them, although he suspects this number will be closer to \$3 million when all is said and done.

Chief Payne further explained that South Pasadena is 100% within SCE's territory, so his city had 100% power loss. The soonest power was restored to some areas was 12 hours. His house didn't receive power again for six days; and the city's main water pumping station failed, too.

He noted that others have made comments to the effect that "we were very fortunate" that damage wasn't worse or that there were no casualties – but he stressed that "hope is not a strategy" by which to manage emergencies. He, too, wishes that SCE would've utilized law enforcement and fire resources as his city had many roads blocked which could've impeded fire and ambulance crews in a more serious disaster.

With regard to budget, Chief Payne explained that the City's damage estimates are about \$10 million short of where they need to be to qualify for federal reimbursement monies. And, while they do meet the threshold for state reimbursement, the Governor has refused. He would hate to think that local law enforcement agencies would be put in a position where they would have to prioritize their response efforts to maximize their possibility of reimbursement.

#### State Response

**Michelle Cooke** and **Edward Randolph** represented the CPUC at this hearing. Cooke began by explaining that the CPUC rules governing electrical utilities during disasters are General Orders 95, 165 (inspection cycles), and 166 (Emergency Response Plans). She added that the CPUC also has the authority to audit and inspect public utilities for safety issues at any time.

Cooke further explained that the CPUC has already committed internally to doing a more robust review of the ERPs submitted by utilities. Before, they were submitted to the Commission's Energy Division. They are now going to have ERPs reviewed by their Construction Protection & Safety Division.

With regard to CPUC's oversight on utilities, and specifically SCE, Cooke noted the CPUC is required to inspect utilities every 3-5 years. Additionally, she added that SCE conducted its own pole tests in 2010-11 on some poles – some of which failed during the windstorm. She also noted that the CPUC's rules regarding ERPs suggest that those plans should be implemented for a "measured event" when 10% of service fails for customers simultaneously, or 40% overall. In light of this event, the CPUC will be reviewing this protocol in the next few months.

Randolph then explained the maintenance requirements of the CPUC on utilities. He noted that sometimes, the details of a general rate case settlement are not nit-picked by the CPUC. Additionally, if utilities don't spend money they have been authorized to spend in one arena, they are technically allowed to move those funds to other areas.

Randolph continued to explain the CPUC's role during events like the windstorm by noting that the Commission is able to review compliance issues and seek lessons learned from utilities. To this extent, the CPUC has sent data requests to all of the utilities affected by the windstorm. He noted that, in this particular instance, there are some early indicators that the CPUC will be investigating, particularly:

- 1) Whether the many outages experienced violated any safety protocols;
- 2) The use of conductors showing signs of oxidization;
- 3) Pole failures. The CPUC believes as many as 13% of the poles that fell were overloaded – which may or may not have been the cause of the pole's fall (although it does add risk).
  - a. He noted that the fact that many of these poles were not preserved presents a challenge that the CPUC is going to try to address. They do not expect, however, to have to remind SCE of this rule every time there is an incident.
- 4) In regards to SCE's ERP, the CPUC noted that staff had trouble deciphering various processes.

Randolph continued by noting that the CPUC is glad to hear that SCE has developed a new plan for notifying and contacting their medical customers. He also noted that on the CPUC's side of things, GO 166 specifically does not apply to "regional events" such as this windstorm, but after this event, they believe it probably should. Regardless, he concluded that the CPUC needs to do more internally. This started with San Bruno but must continue. For example, they need a more robust ERP review process. They are also contemplating a similar process for gas facilities. Additionally, they have no mechanisms in place by which to determine if an amount authorized for maintenance or safety, for example, is the correct amount to ensure public safety by the utilities. Currently, the CPUC has no "safety advocate," but they have opened a process by which to develop this position – likely to occur as part of a rulemaking procedure (this has also been incorporated into a legislative measure authored by Assemblymember Jerry Hill). Similarly, a budget change proposal will be headed to the Legislature to create this position.

**Pat Dennen** with the California Emergency Management Agency (CalEMA) was the hearing's final presenter. He began by explaining that CalEMA received no requests for assistance during this windstorm; although per protocol, the agency did provide staff to the Los Angeles Emergency Operations Center.

Dennen concurred with Chief Payne that the damage estimates by which to trigger federal reimbursement monies was not met. He also conceded that, from the state's perspective, there was a strong localized impact, but all in all, there was not much damage to infrastructure.

In the wake of this event, CalEMA has suggested more vegetation management by utilities and the need for local mutual aid/emergency response relationships/partnerships to be established well in advance.

### Public Comment

**Hans Letz**, a resident of Malibu, addressed the committees. He noted that he is a reporter and an intervener in a rate case with SCE. He expressed his belief to the committees that this is just another event in a pattern by SCE of unreliability regarding evidence preservation. To that effect, the Consumer Protection and Safety Division (CPSD) of the CPUC proposed \$99.2 million in fines for this very purpose to SCE in the wake of the Malibu fires.

**Assemblymember Bradford** noted that he hoped to introduce legislation regarding this very topic – evidence retention – in the upcoming year.

**Adolpho**, an aide with Los Angeles County Supervisor Mike Antonovich, was also in attendance and addressed the committees. He stressed that, in terms of coordination between the impacted cities, they all talked to each other. He believes that the breakdown came solely from SCE's end. He noted, however, that the local SCE representatives were trying to help and trying to get information to local officials (like Supervisor Antonovich), but that they simply had no information to share. There were no door-to-door campaigns, but he added that residents were actually advised *not to open their doors*. He concluded by noting that there was also no SCE presence in the emergency shelters or command centers that were established.

### Legislative Solutions/Follow-Up Items

#### Suggestions for Southern California Edison (SCE)

- 1) SCE should, in times of crisis, provide more general, but more accurate information to the public in an attempt to keep information up-to-date.
- 2) SCE should explore a new call management system to avoid first responders and local governments using the same system as the public.
- 3) SCE needs to develop protocols by which to reach out to all medical accounts for up-to-date information about their populations served.
- 4) SCE needs to coordinate with local agencies in regards to improved response.
- 5) SCE needs to institute staffing guidelines and parameters for participation in city and county command centers and shelters.
- 6) SCE should strongly consider documenting new or revamped emergency plans and sharing those plans with local first responders.

#### Suggestions for the California Public Utilities Commission (CPUC)

- 7) The CPUC's General Order 166 defines a major outage as one affecting greater than 10% of a utility's customers. It is possible that this rule and these protocols should be reviewed and updated to allow for additional flexibility by utilities when managing windstorm-related events.
- 8) The CPUC should consider applying GO 166 to regional events, as well.
- 9) The CPUC should ensure that all utilities are aware of rules pertaining to evidence retention during, and in the wake of, disasters.
- 10) The CPUC should conduct a more robust review of the ERPs submitted by utilities.
- 11) The CPUC should consider hiring or appointing a safety advocate dedicated solely to planning for and managing events affecting utilities.
- 12) The CPUC could consider strengthening vegetation management requirements by the utilities.

#### Suggestions for the Los Angeles Department of Water and Power (LADWP)

- 13) LADWP should have their field crews use company radios in an effort to avoid overloading the company's call centers.
- 14) LADWP could consider revamping internal protocols dictating when to activate the utility's command center during an event.

#### General Suggestions

- 15) Utilities could adopt, train in, and utilize SEMS (the Standardized Emergency Management System employed by first responders throughout California for unified command during a disaster) and NIMS (the National Incident Management System).
- 16) The Legislature could require private utility companies to work with local first responders on the development of their ERPs.



**Joint Oversight Hearing  
Investigation of December 2011 Southern  
California Windstorm Outage**

**February 3, 2012  
2:00P.M. – 5:00P.M.  
City of Alhambra  
111 South First Street, Alhambra, CA 92801**

**Opening Remarks by Chairs Steven Bradford and Bonnie Lowenthal**

**Panel 1: Investor Owned Utilities**

- Southern California Edison, Lynda Ziegler, Executive Vice President, Power Delivery Services

**Panel 2: Public Owned Utilities**

- Los Angeles Department of Water and Power, Randy Howard, Director, Power System Planning and Development
- Pasadena Water and Power, Joe Awad, Assistant General Manager

**Panel 3: Regional & Local Response**

- Los Angeles County Fire Department, Daryl Osby, Fire Chief
- City of San Marino, Jim Frawley, Fire Chief
- City of South Pasadena, Joseph Payne, Police Chief

**Panel 4: State Response**

- California Public Utilities Commission, Edward Randolph, Director, Energy Division
- California Public Utilities Commission, Michelle Cooke, Interim Director, Consumer Protection and Safety Division
- California Emergency Management Agency, Pat Dennen, Interim Southern Regional Administrator

**Public Comment**

State Capitol  
Sacramento, California 95814



**California Assembly Utilities and Commerce Committee  
&  
Joint Legislative Committee on Emergency Management  
Briefing Paper on December 2011 Southern California Windstorm Power Outage**

**Abstract**

This paper discusses the practices and communication strategies employed by both investor-owned and local publicly-owned utilities emergency response management, and recovery during the 2011 Southern California Windstorm Power Outage. It also examines the California Public Utilities Commission's (CPUC) regulatory oversight of emergency response and offers suggestions for areas where clarity may be needed to more effectively manage utility-related emergencies.

**I. Introduction**

From November 30<sup>th</sup> to December 1<sup>st</sup>, 2011, Southern California experienced hurricane-force winds that caused electric customers throughout the region to lose power. The severe wind conditions resulted in downed power lines, toppled-over trees, road debris, and other safety related problems across the Southern California region. It has been estimated that approximately 430,000 electric customers in Southern California Edison's (SCE) territory, approximately 50,000 customers in the Los Angeles Department of Water and Power's (DWP) territory, 10 percent of customers in Pasadena Water and Power's territory were affected, and roughly 10,000 customers of Glendale Water and Power. While power in some of the affected areas was restored within several hours, other areas were without power through December 8, 2011.

Customers have expressed frustration and anger, mostly directed toward SCE's management of the outage restoration process, citing lack of information and lack of outreach.

## II. Southern California Edison's Response to Outages

Approximately 430,000 electric customers in the SCE service territory experienced outages in the aftermath of the storm. The areas hardest hit in SCE territory were San Gabriel, Altadena, Arcadia, Sierra Madre and Temple City.

The extremely high winds caused considerable damage to the distribution power grid, power lines, poles, and equipment. The utility deployed over 200 SCE and contract crews to restore service. Their efforts were complicated by the safety hazards created by the trees and other large pieces of debris.

The length of the outage was attributed to utility safety concerns (both public safety and personnel safety). SCE crews needed to repair lines or reconstruct poles as part of the process of safely restoring power to individual customers.

In response to the extended time it took to restore service, SCE opened seven community outreach centers on Saturday, December 3<sup>rd</sup> in the hardest hit areas where customers could receive free basic supplies, including flashlights, water and ice. The centers were located in Altadena, Arcadia, La Canada Flintridge, San Gabriel, Sierra Madre and Temple City.

Customers in the Greater San Gabriel Valley area were one of the hardest hit by the power outages. According to a December 6<sup>th</sup> press release issued by SCE approximately 105,000 customers were affected by the outages and over 6,000 were still without service as of 5:00 pm that day.<sup>1</sup>

Frustrations with SCE's challenge to restore power in a timely manner were voiced in several media outlets by local and federal officials. Los Angeles County Supervisor Michael Antonovich accused Edison executives of failing to communicate with customers who had no access to phones, radio, television or the Internet in the *Daily Breeze*.<sup>2</sup> He said the utility had not planned ahead, had been slow to get information to customers, had provided inaccurate information and left many residents frustrated and unsure about what to do.

Representative Adam Schiff, D- Pasadena criticized SCE and publicly owned utilities in the Glendale and Los Angeles area. According to remarks made by Representative Schiff in the *Pasadena Star News*, "it's taken an unacceptably long time to restore power, and in the case of people with medical conditions, like those on ventilators, it can be life or death".<sup>3</sup>

Although crews worked around the clock to restore service beginning November 30, power was not fully restored to all SCE customers until December 8.

---

<sup>1</sup> <http://www.edison.com/pressroom/pr.asp?bu=&year=2011&id=7772>

<sup>2</sup> [http://www.dailybreeze.com/news/ci\\_19488656](http://www.dailybreeze.com/news/ci_19488656)

<sup>3</sup> [http://www.pasadenastarnews.com/ci\\_19482083](http://www.pasadenastarnews.com/ci_19482083)

### **III. DWP, Pasadena, and Glendale Utilities Response to Outages**

#### **A. Department of Water and Power**

In DWP's service area, most of the affected customers were located in the areas of Highland Park, Chinatown, Cypress Park, and Lincoln Heights. DWP personnel reported more than 200 downed trees. DWP sent city crews to respond to danger caused by the storm. By December 4, DWP reported that power had been restored to almost all of DWP's customers. According to DWP, "crews worked 16-hour shifts around the clock in hazardous conditions to restore electric service. As many as 138 crews worked across the city to restore power to customers, responding to and resolving over 1,600 separate incidents ranging from single customer outages to full circuit outages affecting thousands of customers at a time."<sup>4</sup>

On January 17, 2012 the Los Angeles City Council adopted a motion to assess emergency response coordination:

"...that the Police Department, Fire Department, Emergency Management Department, Public Works Bureaus, Department of Transportation, Los Angeles Department of Water and Power, and other departments as necessary, be instructed to report to the Public Safety Committee on: (1) ongoing efforts to achieve inter-departmental and multijurisdictional coordination; (2) the types of training and exercises conducted to promote interagency coordination; (3) the process for completing and reviewing after action reports for multiagency incidents; (4) an assessment of the ability to communicate with the public during incidents that result in a power outage; and (5) the availability of grant funding for a multiagency exercise."<sup>5</sup>

#### **B. Pasadena Water and Power**

Approximately 10% of Pasadena Water and Power's customers were affected by the outage. Following restoration of power, the utility reports that some repairs were temporary fixes that the utility intends to make permanent over the next few months.

#### **C. Glendale Water and Power**

According to Glendale Water and Power, approximately 10,000 customers lost power during the outage. According to Principal Electric Engineer Henry Abrari at the utility, the longest outage following the storm lasted about nine hours and 30 minutes. The utility attributes its ability to lessen the impact of the outage to an aggressive tree-trimming program.

---

<sup>4</sup> <http://www.ladwpnews.com/go/doc/1475/1250747/>

<sup>5</sup> [http://clkrep.lacity.org/onlinedocs/2012/12-0093\\_MOT\\_01-17-12.pdf](http://clkrep.lacity.org/onlinedocs/2012/12-0093_MOT_01-17-12.pdf)

## **IV. Disaster Management in the State of California**

### **A. State Emergency Management System**

The Standardized Emergency Management System (SEMS), developed as a result of the 1991 East Bay Hills Fire, is California's system for managing emergencies. SEMS provides a consistent template to enable State, tribal and local governments, nongovernmental organizations, and the private sector to protect against, respond to, and recover from all emergencies and disasters regardless of scope, cause, location, or complexity. It is a core set of doctrines, concepts, principles, terminology, and organizational processes that enables effective, efficient, and collaborative incident management. This framework forms the substructure for interoperability and enables diverse agencies and organizations to conduct coordinated and efficient incident response operations.

All state government agencies must use SEMS when responding to multi-jurisdictional or multi-agency emergencies. All local government agencies must use SEMS in multi-jurisdictional or multi-agency emergency responses to be eligible for state reimbursement of response-related personnel costs.

Similarly, the National Incident Management System (NIMS) was established via Homeland Security Presidential Directive in 2004 to establish a systematic, proactive approach by which to guide governments and agencies (including the federal government) at all levels to work seamlessly during a disaster. Together, SEMS and NIMS provide the basis of California's Emergency Response System.

That said, incidents typically begin and end locally, and are managed on a daily basis at the lowest possible geographical, organizational, and jurisdictional level. For this reason, every county is responsible for the development of its own Emergency Operations Plan, utilizing SEMS and NIMS, which takes into account each local government's resources and unique hazards and terrain. Should an earthquake, fire, or other such disaster occur in the Los Angeles area, it is expected that first responders will adhere to SEMS and NIMS and respond accordingly – thereby seeking regional, state and federal assistance as needed.

In recent years, California's utility providers have been commended for their participation and coordination with the state's first responders during the management of disasters. That said, the SEMS/NIMS process is largely only employed when fire or law enforcement officials are considered to be the "first responders" during an emergency. In circumstances in which there is no fire or other imminent threat to the safety and security of residents, such as a power outage, there is no "first responder" response. And, there is no requirement that utilities themselves employ the SEMS/NIMS protocols or structures as incident managers during singular utility-unique emergencies, such as the windstorms or the Pacific Southwest Power Outage, both of which occurred in California in the past six months.

## **B. Communication During a Disaster**

A critical component to SEMS and the successful management of a disaster in California is the ability of all first responders – regardless of specialty or region – to communicate with each other, officials, and the public at-large.

The 9/11 Commission Report found that:

“The inability to communicate was a critical element at the World Trade Center, Pentagon, and Somerset County, Pennsylvania, crash sites, where multiple agencies and multiple jurisdictions responded. The occurrence of this problem at three very different sites is strong evidence that compatible and adequate communications among public safety organizations at the local, state, and federal levels remains an important problem<sup>6</sup>.”

In the wake of 9/11, former U.S. Homeland Security Secretary Michael Chertoff remarked in 2006 that “...the critical foundation for an effective response is the ability to talk to one another.” He explained that:

“It is a task that is very formidable, and requires not only a technological element, but also an element of governance, an element of how we deal with each other in terms of very different organizations and very different chains of command<sup>7</sup>.”

Governments across the country are working to establish the infrastructure and networks to allow diverse emergency response jurisdictions to communicate with each other seamlessly during an event. It is crucial that first responders know both where additional assistance is needed, and also facilities/areas that they should avoid entering (i.e. fires deemed “out of control,” buildings in danger of collapse, areas with pipelines in danger of rupturing). The need for emergency communications interoperability is especially great in the Los Angeles region with over 50 law enforcement agencies and 31 fire departments serving a 4,084 square mile region and 10 million County residents.

Similar to the SEMS/NIMS “dilemma” however, the interoperability discussed above does not traditionally include utility companies as partners. When discussing the importance of interoperability and communication to effectively managing emergencies, the discussion typically involves both unified technology and a culture of coordinated communication – across jurisdictions, geographies, and leadership mentalities. Interoperability involves the acknowledgement that emergencies and disasters are best managed cooperatively, and not in a “silo’d” manner.

It has been argued by several Los Angeles-area officials that SCE did not reach out to partners in this incident in an attempt to neither more effectively manage the emergency nor to better communicate with the public about the delays in power restoration or access to emergency services.

---

<sup>6</sup> The National Commission on Terrorist Attacks Upon the United States, “9/11 Commission Report,” 2004, pg. 397.

<sup>7</sup> Remarks by Homeland Security Secretary Michael Chertoff at the Tactical Interoperable Communications Conference, Washington, D.C. May 8, 2006.

## **V. Utility Emergency Response Practices and Procedures and Maintenance**

### **A. Standards for Operation, Reliability, and Safety During Emergencies and Disasters**

The California Public Utilities Commission (CPUC) General Order No. 166 establishes standards for operation, reliability, and safety during emergencies and disasters. The purpose for these standards is to ensure that jurisdictional electric utilities are prepared for emergencies and disasters in order to minimize damage and inconvenience to the public which may occur as a result of electric system failures, major outages, or hazards posed by damage to electric distribution facilities. The standards facilitate the CPUC's investigations into the reasonableness of the utility's response to emergencies and major outages.

One of the standards requires utilities to meet certain goals such as a Customer Average Interruption During Index (CAIDI) of lower than 570 minutes. This requirement becomes effective if the utility experiences a major event. GO 166 defines a "major outage" as occurring when "10 percent of the electric utility's serviceable customers experience simultaneous, non-momentary interruption of service". According to the CPUC, the SCE wind event in December 2011 affected approximately 5% simultaneously, thus it is not considered a major event under GO 166.

### **B. Pole Maintenance**

SCE owns and maintains approximately 1.5 million utility poles in its service area. Following this outage, the CPUC examined 60 of 211 SCE power poles. According to the CPUC representative, Denise Tyrell, "Our preliminary investigation suggests to us that at least one-third of these damaged poles were indeed overloaded."

The CPUC adopts general rules applicable to all regulated utilities. In particular, General Order 95, Rule 44.2 provides requirements for adding load to a utility pole (this provision was added in August 2009, following the San Diego wildfires).:

#### **"44.2 Additional Construction**

Any utility planning the addition of facilities that materially increases the load on a structure shall perform a loading calculation to ensure that the addition of the facilities will not reduce the safety factors below the values specified by Section IV. Such utility shall maintain these pole loading calculations and shall provide such information to authorized joint use pole occupants and the Commission upon request.

All other utilities on the subject pole shall cooperate with the utility performing the load calculations described above including, but not limited to, providing intrusive pole loading data and other data necessary to perform those calculations."

Poles that were constructed or modified prior to August 2009 may or may not have had a load calculation performed to ensure that these facilities will not reduce specified safety factors.

In one newspaper report about this windstorm, CPUC representative Denise Tyrell said that the CPUC believes poles overloaded with telecommunications and other equipment are a significant issue throughout Southern California and beyond, "and we need to address that immediately."

In that same article, Southern California Edison President Ron Litzinger said that, in addition to cooperating with the CPUC's investigation launched in December, the utility is conducting an internal investigation and has engaged outside experts to independently review its response. "Pole loading is something we take very seriously and look for compliance," Litzinger said. "We also have to evaluate loading of a pole anytime there is a new attachment from a cable or phone company."

The CPUC conducts periodic audits of pole facility load calculations. Penalties of up to \$50,000 per violation per day could be levied.

### **C. General Rate Case – Recovery of Costs for Maintenance**

On a triennial basis, each of the largest Investor Owned Utilities files an application at the CPUC for its General Rate Case. In those Rate Cases, the utility will request funds be allocated for maintenance of its electricity distribution system. Maintenance includes, but is not limited to replacement of power poles, transformers, insulators, conductors, etc. Once the General Rate Case has been approved, utilities are authorized to collect rates, along with a return on investment, for the capital cost of this maintenance.

SCE publishes work papers on the SCE website to describe, in detail, its plans for expenditures. These work papers form the basis of the requests made in the General Rate Case. While the work papers for the current rate case were not available (a technical malfunction prevented them from being downloaded), information was available about a prior rate case that is relevant to a discussion of pole maintenance. The following is an excerpt from testimony filed by the Division of Ratepayer Advocates analysis of the 2007-2001 rate case:

"In the 2007-2011 Rate Case, SCE requested a total of \$505.288 million in capital expenditures to replace distribution wood poles for years 2007-2011. SCE forecasts a replacement rate of 8,630 poles in 2007, 9,673 poles in 2008 and 11,768 poles in 2009. In 2006, SCE replaced 12,059 poles. In 2007, SCE actually replaced 8,961 poles."<sup>8</sup>

It is not clear whether the poles that were damaged during the windstorm were among those identified to be replaced under the current, past, or even future rate cases.

---

<sup>8</sup> Report on the Results of Operations for Southern California Edison Company, General Rate Case, Test Year 2009, Testimony filed by Division of Ratepayer Advocates, April 15, 2008

According to SCE in the 2007-2011 rate case:

“Poles are inspected routinely, through “Intrusive” inspections and “Detailed” inspections. “Intrusive” inspections involve drilling into the poles’ interior in order to measure the extent of any internal decay, which is typically undetectable with external observation only. Poles with insufficient wall thickness necessary to meet the strength requirement of G.O. 165 are identified for replacement. In accordance with G.O. 165, these intrusive inspections are performed for the first time after a pole is 15 years old but before it is 25 years old. Subsequent intrusive inspection inspections must be performed at a minimum of every twenty years thereafter... “Detailed” inspections involve visual examination of the pole’s exterior condition as well as the condition of components on the pole. “Detailed” inspections are performed on a five-year cycle in accordance with G.O. 165....Poles will also be identified for replacement from a variety of other sources. These “Other Program” poles include those identified by local Districts as being unsuitable for climbing or insufficiently strong to support new equipment or poles initially identified for repair but later concluded to be too deteriorated.”

It is not clear whether the CPUC requires the utilities to keep records on locations where poles have been inspected, scheduled for inspection, or replaced, once a rate case has been approved.

#### **D. Utility Emergency Response Plans**

While an electrical blackout may not yield imminent danger for Californians, sustained periods without electricity do pose a serious health danger to at-risk populations (i.e. the aged, disabled, and medically-dependent) and can impact the economic stability of small businesses and households (via inability to work, loss of perishable food items, etc.). Those dependent upon electricity for the operation of medical machinery are of particular concern, especially when faced with an ability to call for assistance either because of physical disability or because of lack of electricity.

Electric utilities regulated by the CPUC are required to file an annual emergency response plan.<sup>9</sup> In addition, publicly owned utilities are required by federal law to have emergency response plans.<sup>10</sup> The CPUC also regulates electrical utility providers in California, in large part to maintain safe conditions and standards for those involved in the provision of electricity to California’s residents.

The CPUC requires the following specific elements within the utility emergency response plans to help assure the utility is best able to protect life and property during an emergency or major outage and communicate the scope and expected duration of an outage.

---

<sup>9</sup> CPUC General Order 166

<sup>10</sup> 49 CFR 192.615

The plan includes the following elements:

- **Internal Coordination.** Describe the utility's internal coordination function, including how the utility will gather, process, and disseminate information within the service area, set priorities, allocate resources and coordinate activities to restore service. The utility will coordinate internal activities in an emergency operations center or use some other arrangement suitable for the purposes of internal coordination.
- **Independent System Operator/Transmission Operator Coordination.** Provides for utility coordination with the ISO, including gathering, processing and disseminating information from the ISO, and providing information regarding how the utility will establish priorities and estimates of service restoration. A utility that does not deal directly with the ISO shall describe how it will coordinate its efforts with the TO.
- **Media Coordination.** Addresses the utility's provision of timely and complete information available to the media before, during and immediately after a major outage. Such information shall include estimated restoration times and a description of potential safety hazards if they exist.
- **External and Government Coordination.** Addresses the utility's efforts to coordinate emergency activities with appropriate state and local government agencies. The utility shall maintain lists of contacts at each agency which shall be included in the plan and readily accessible to employees responsible for coordinating emergency communications. The utilities may address the use by governmental agencies of California's Standardized Emergency Management System (SEMS).
- **Safety Considerations.** Describes how the utility will assure the safety of the public and utility employees and the utility's procedures for safety standby. The plan shall include contingency measures regarding the resources required to respond to an increased number of reports concerning unsafe conditions.
- **Damage Assessment.** Describes the process for assessing damage and, where appropriate, the use of contingency resources required to expedite a response to the emergency. The plan will generally describe how the utility will set priorities, facilitate communication, and restore service.
- **Restoration Priority Guidelines.** Include guidelines for setting priorities for service restoration. In general, the utility shall set priorities so that service is restored first to critical and essential customers, and so that the largest number of customers receives service in the shortest amount of time.
- **Mutual Assistance.** Describe how the utility intends to employ resources available pursuant to mutual assistance agreements for emergency response. Mutual assistance shall be requested when local resources are inadequate to assure timely restoration of service or public safety. Mutual assistance need not be requested if it would not substantially improve restoration times or mitigate safety hazards. The plan shall recognize the need to communicate mutual assistance activities with the State Office of Emergency Services, through the UOC/OES Utility Branch, during an emergency.
- **Plan Update.** Annual updates to incorporate changes in procedures, conditions, law or Commission policy.

In 2011, Senate Bill 44 (Corbett, Chapter 520) was signed into law by Governor Jerry Brown, in an attempt to address a number of the emergency response issues associated with the San Bruno Pacific Gas & Electric (PG&E) pipeline disaster of 2010. This measure specifically required the CPUC to commence a proceeding to establish emergency response standards, including the creation of emergency response plans, to be followed by owners or operators of commission-regulated gas pipeline facilities. This action is currently underway and several operators, including PG&E have initiated the creation of emergency response plans in anticipation of the CPUC's rulemaking on this matter.

It should be noted that this issue is not unique to California's utility or emergency management structures. In fact, in 2011 alone, at least 11 bills were pending in seven states to more effectively manage energy security – many specifically addressing the issue of maintaining energy emergency preparedness plans<sup>11</sup>.

### **E. Experiences during October 2011 Southwest Power Outage**

The Assembly Utilities and Commerce Committee and the Joint Legislative Committee on Emergency Management co-hosted an informational hearing on the topic of the Pacific Southwest Power Outage in October of last year. At the hearing, San Diego Gas & Electric (SDG&E) in particular, discussed their outreach and communication during the 12-hour blackout to nearly 5 million residents within their service territory. It was revealed that San Diego's Mayor, Jerry Sanders, was in contact with SDG&E, and as a result, communicated effectively with San Diego's police and fire departments, and activated the region's emergency operation center accordingly. In addition, the Mayor advised the community to minimize use of landlines and cell phones and restrict travel to emergency purposes only.

SDG&E deployed nearly 200 workers to provide welfare checks on medical and life support to customers not reachable by phone. Workers knocked on over 1,800 doors both during and after the outage to ensure their customers' safety. They also utilized other communication channels such as Twitter, email and their website to provide updates. In addition, SDG&E coordinated with government emergency responders during the incident to provide information on the extent of the outage and updates on progress toward restoring power.

SDG&E relayed that they also worked with media at the local, state and national level providing live interviews, outage/restoration information, and safety information. Police, sheriff and fire departments were also updated regularly and local, state and federal elected officials were briefed throughout and after the event.

### **F. Citizen Preparedness**

The California Emergency Management Agency (CalEMA) recommends preparing for a minimum of 72 hours of self-sufficiency in the event of a serious crisis.<sup>12</sup>

From all newspaper accounts, it appears that most citizens were able to manage through the outage without any serious or widespread problems (health emergencies, public safety, and crime).

---

<sup>11</sup> National Conference of State Legislatures, "Energy Security Legislative Update," April, 2011.

<sup>12</sup>

<http://www.oes.ca.gov/Operational/OESHome.nsf/978596171691962788256b350061870e/55C950F3BE85D1C688256CD8007CD9CB>

The local citizens acted responsibly, heeded the warnings of emergency responders, and provided support to each other throughout the event.

Neither local police departments nor the Los Angeles Police Department reported no major incidents or any increases in violence. All remained fully operational receiving 911 calls and dispatching services during the outage.

That said SCE has been publicly criticized for its emergency communications strategy during the windstorm. Claims have been made that SCE did not take advantage of assistance in the recovery from the storm that was offered by the Los Angeles County Fire Department. In addressing the Los Angeles City Council, Los Angeles County Battalion Chief, Ron Larriva expressed frustration that he experienced challenges working with SCE. He stated that he had no point of contact and was refused in his attempts to reach SCE's Public Information Officer. He opined that the lack of communication contributed to the delays in restoring power, and that Edison should have established a unified command system, similar to those created by first responders when managing disasters<sup>13</sup>.

## **VI. Role of the California Public Utilities Commission Related to Outages**

According to the CPUC's website:

"The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The CPUC serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy."

The CPUC implements state statutes related to regulated utilities. The CPUC also initiates its own proceedings that, when rules are adopted by the CPUC, have the force of law after adoption by the CPUC. It is important to note that the CPUC does not have regulatory authority over publicly owned utilities, such as DWP, Pasadena, and Glendale.

Section 364 of the California Public Utilities Code requires the CPUC to adopt inspection, maintenance, repair, and replacement standards for the distribution systems of investor-owned electric utilities. It further states that the standards be performance or prescriptive standards, or both, as appropriate, for each substantial type of distribution equipment or facility, to provide for high quality, safe and reliable service.

This statute provides that the Commission consider cost, local geography and weather, applicable codes, national electric industry practices, sound engineering judgment, and experience.

In addition, this statute requires the CPUC to adopt standards for operation, reliability, and safety during periods of emergency and disaster and require each utility to report annually on its compliance with the standards and make these reports available to the public.

---

<sup>13</sup> "Fire Official Takes Edison to Task," Siegal, Dan, *Los Angeles Times*, December 21, 2011.

Last, the statute requires the CPUC to conduct a review to determine whether the standards have been met. If the CPUC finds that the standards have not been met, the CPUC may order appropriate sanctions, including penalties in the form of rate reductions or monetary fines. The review shall be performed after every major outage.

As highlighted in this paper, the CPUC has adopted specific General Orders related to safety of the electric distribution system and specific requirements for annual emergency response plans.

On December 7, the CPUC announced that it would be conducting an investigation into the prolonged power outages from the windstorm in the service area of SCE. The CPUC will examine the cause of the outages, including pole failures and any other potential safety factors that contributed to the outages or their duration, as well as staffing levels and the length of time it took SCE to respond to safety related calls from its customers and the accuracy of the information being conveyed.

The CPUC staff has issued preliminary findings from its investigation of SCE's response to the power outages. In summary, these findings include (note that DWP, Pasadena, and Glendale Utilities are not part of the CPUC investigation):

- SCE's Communication efforts
  - To Governments: SCE's Local Public Affairs contact for cities in the San Gabriel Valley retired the day before the Wind Event and the dedicated phone line for Governments did not provide much more information than General Public Line
  - To General Public: General public reported 4,000 "downed lines;" SCE underestimated the time needed to restore power; 13.8% of Medical Baseline Customers and Critical Care Customers receive Automatic Outage Communications from SCE
  - Portions of SCE's Emergency Plan contain antiquated CPUC contact information
- SCE's Power Restoration Efforts
  - SCE's initial interpretation of Smart Meter data directed restoration efforts inefficiently
  - After SCE realized this problem, it revised its interpretation of Smart Meter data, which expedited restoration efforts
  - SCE cancelled a majority of pre-planned work, and reassigned those resources to help with restoration efforts
  - SCE did utilize contractors
  - SCE did not utilize mutual assistance
- SCE Utility Poles
  - Preliminary calculations indicate that 13.4% of the SCE poles involved were overloaded, in violation of General Order 95, Rule 44.3.
  - SCE did not preserve all evidence as required by General Order 95, Rule 19.
    - Only 60 pole butts out of 200 were maintained
    - Some poles were cut into 8 inch long pieces
    - Numerous poles were missing pole numbers
    - Only five poles could be reconstructed

The CPUC staff recommended the following actions based on its investigations:

- SCE update its emergency procedures to contain accurate contact information and reporting instruction.
- SCE review and follow its training schedule.
- SCE revise its storm categorization to expedite restoration
- SCE review its mutual assistance policy and determine if such assistance could expedite restoration level during major events such as this incident.

## **VII. Conclusion**

For decades, the Legislature has focused California's attention on the imperative of preserving the state's supply of electricity and the necessity of maintaining the grid to support higher usage at various times. While it is generally understood that outages will occur and that accidents will happen, it is crucial that governments, agencies, and private companies work to both minimize these incidents maintain a sense of calm and continuity for the public when emergencies occur.

It is important to note that during the 2011 windstorms, disaster was avoided. The utilities, jurisdictions affected, and residents of the County of Los Angeles and the San Gabriel Valley very much deserve to be commended in this regard. Nonetheless, there are still lessons that can be learned from the southland's recovery from this incident.

With three major utility-related emergencies in California over a 15 month period, it is time that we examine fully our expectations of our electricity and energy providers and state regulators when it comes to disaster management and implementation of emergency response plans; oversight over planned maintenance inspections and replacement of utility facilities, and compliance with current rules and laws. It is imperative that we, as a state, continue to strive for improvement in this arena with a keen eye towards enhanced public safety and emergency management when outages occur.



# 2011 Wind Event Outages

Raymond G. Fugere, P.E.  
Consumer Protection and Safety Division  
California Public Utilities Commission





# CPSD - Investigation

- The CPSD is investigating the 2011 wind event to determine what happened, what can be learned and did any violations contribute to the severity of the outages. CPSD is specifically looking at the following:
  - Causes of Outages
  - Communications During Event and After Event
  - Restoration





# Wind Event Outages

Utility	Total Customers Affected	Percent of Total Customers	Average Outage Duration
SCE	439,000	8.9%	1173 minutes
<b>LADWP</b>	220,000	14.1%	580 minutes
GWP	30,500	34.7%	173 minutes
PWP	6,330	9.9%	TBD





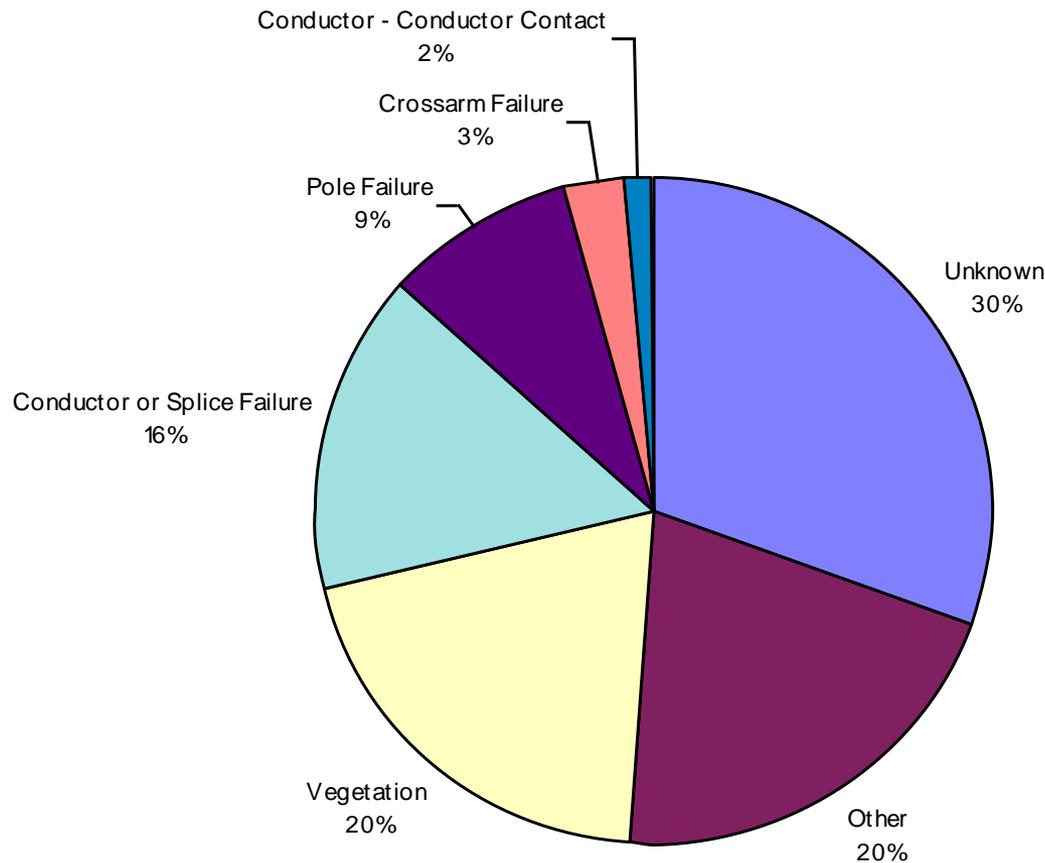
# SCE: Wind Event Outages

- The San Gabriel Valley was the hardest hit area of SCE's service territory. A total of 205,000 SCE customers in the San Gabriel Valley lost power during the wind event.
- In total 439,000 SCE customers lost power during the wind event. This represents 8.9% of SCE's total customers.
- The maximum number of SCE customers that were simultaneously without power was 226,000. This represents 4.6% of SCE's total customers.





# SCE: Outage Causes During the Wind Event





# SCE: Communications

- Governments
  - SCE's Local Public Affairs contact for cities in the San Gabriel Valley retired the day before the Wind Event
  - Dedicated phone line for Governments did not provide much more information than General Public Line
- General Public
  - General public reported 4,000 “downed lines”
  - SCE underestimated the time needed to restore power
  - 13.8% of Medical Baseline Customers and Critical Care Customers receive Automatic Outage Communications from SCE





# Restoration

- SCE's initial interpretation of Smart Meter data directed restoration efforts inefficiently
- After SCE realized this problem, it revised its interpretation of Smart Meter data, which expedited restoration efforts
- SCE cancelled a majority of pre-planned work, and reassigned those resources to help with restoration efforts
- SCE did utilize contractors
- SCE did not utilize mutual assistance





# CPSD's Findings

- Preliminary calculations indicate that 13.4% of the SCE poles involved were overloaded, in violation of General Order 95, Rule 44.3.
- Portions of SCE's Emergency Plan contain antiquated CPUC contact information.





# CPSD's Findings



- SCE did not preserve all evidence as required by General Order 95, Rule 19.
  - Only 60 pole butts out of 200 were maintained
  - Some poles were cut into 8 inch long pieces
  - Numerous poles were missing pole numbers
  - Only five poles could be reconstructed



The CPUC's Report "Investigation of Southern California Edison Company's Outages of November 30 and December 1, 2011" was included in Committee members' packets.

The report may be accessed via the following link:

[http://www.cpuc.ca.gov/NR/rdonlyres/C85B9B30-E5BC-4D9D-BB5F-0DC91EEEE6D7/0/SCEWindstormReportCPSD\\_Final1\\_1\\_1\\_13.pdf](http://www.cpuc.ca.gov/NR/rdonlyres/C85B9B30-E5BC-4D9D-BB5F-0DC91EEEE6D7/0/SCEWindstormReportCPSD_Final1_1_1_13.pdf)

Southern California Edison's "December 2011 Outage Report: Restoration and Communications Challenges and Root Cause Evaluation" was provided to the Committees after the hearing.

The report may be accessed via the following link:  
[http://asset.sce.com/Documents/Safety%20-%20For%20Everyone/SCE Windstorm Report.pdf](http://asset.sce.com/Documents/Safety%20-%20For%20Everyone/SCE_Windstorm_Report.pdf)

Southern California Edison's external report, conducted by Davies Consulting entitled "Final Report Southern California Edison's Response to the November 30, 2011 Windstorm" was provided to the Committees after the hearing.

The report may be accessed via the following link:

[http://asset.sce.com/Documents/Safety%20-%20For%20Everyone/Davies\\_Report.pdf](http://asset.sce.com/Documents/Safety%20-%20For%20Everyone/Davies_Report.pdf)

**Emergency Interoperability:  
What's Next for California?  
A Legislative Informational Hearing**

Monday, August 6<sup>th</sup> upon adjournment of Session  
State Capitol, Room 444

On Monday afternoon, August 6, 2012, the Joint Legislative Committee on Emergency Management held a hearing to learn about a new federal initiative, the First Responder Network Authority (FirstNet), and assess this new authority's impact upon California's two regional interoperability systems – the Los Angeles Regional Interoperable Communications System (LA-RICS) and the Bay Area Regional Interoperability Communications System (BayRICS). The hearing was held in Room 444 of the State Capitol and started at 2:30pm and continued until approximately 5:00pm. An estimated 30 people attended.

Of the Committee's 14 members, the Chair, Assemblymember Bonnie Lowenthal, and Assemblymembers Katcho Achadjian and Kevin Jeffries were able to participate.

This report records who spoke at the hearing (see the white pages), reprints the Committee staff's briefing paper (see the blue pages), and reproduces the written materials provided by the speakers and others (see the yellow pages).

The Assembly Speaker's Office of Member Services audio and video-recorded all comments by the legislators and other speakers. That recording is part of the Committee's official records of the August 6<sup>th</sup> hearing.

The Speakers

The Committee's agenda listed four invited speakers; no other people spoke to the legislators about their concerns or suggestions during the hearing's public comment period. This section captures the highlights of their comments. The appendix reprints what the speakers gave the Committee (see the yellow pages).

**Chairwoman Lowenthal** spoke first and began by welcoming everyone to Sacramento. She then proceeded to inform the audience that the importance of the hearing's topic was highlighted by the fact that for years, California has tried to unify its emergency radio systems with the goal of keeping first responders in constant communication during a disaster. Yet, even as this task nears completion, the federal government has begun the steps to deploy an even larger system designed to standardized disaster communication in a manner that may make our state's current efforts irrelevant.

### Federal and State Update

**Karen Wong**, with the California Technology Agency (CTA), began the hearing by providing an update of both federal and state activities in regards to public safety interoperability. She began by explaining that the broadband network used by California's public safety officials is data-only with the ability to expand to unified voice communication and interoperability roughly 5-10 years into the future. She stressed that our current systems must stay intact as the new networks come online and operate on the back-bone of these data systems.

That said, Wong quickly noted that not much is known about FirstNet. What we do know is that a statewide governance organization will be needed, that project teams will be required, and that they will need to develop the following:

- 1) Communications Plan
- 2) Road Map
- 3) Public Awareness Campaign for First Responders
- 4) Architecture Concept & Design for Infrastructure
  - a. Ownership will need to be discussed
  - b. The possibility of partnerships will also need to be discussed
- 5) Funding
  - a. California is currently slated to receive approximately \$7 billion for our share of this new interoperability infrastructure. This will not cover our costs and the state will need to look for grants and partnerships. Additionally, we will need to find funding to sustain the system once it is built.

Wong also noted that, in relation to other states, California is on par in terms of preparedness. In fact, under FirstNet, it is likely that both LA-RICS and BayRICS will be used as "early adopters" to assess strengths and weaknesses with the system.

With that in mind, Wong next pointed out that there are many things that are currently unknown about FirstNet, including:

- 1) The composition of the national FirstNet Board
- 2) The actions that will be required by states and their corresponding timelines
- 3) When Requests for Proposals (RFPs) will be released
- 4) Overall cost (either for individual states or for the country as a whole)

Wong affirmed for the committee that California's current infrastructure is inadequate to support FirstNet; our vaults, towers, and fiber optic networks are already overloaded. Additionally, she reasserted that we must maintain our current Land Mobile Radio (LMR) system. This means that even if we could offload some of the burden on our current infrastructure, it still would not be available for use by FirstNet. Consequently, Wong noted that, as a state, we will need to undergo a needs assessment to ascertain our own requirements for public safety and then determine additional requirements that will be needed to support FirstNet. Wong believes that we need to be looking at this issue from a holistic or broad view and that we may be able to leverage other efforts (i.e. Next Generation 9-1-1) and technologies against the FirstNet build-out.

**Chairwoman Lowenthal** inquired about who would own the FirstNet infrastructure in California, particularly should we proceed with a partnership. Wong was unable to answer that question noting that ownership and management are both issues that will need to be addressed as the state moves forward.

Chairwoman Lowenthal responded that it's time to begin talking to stakeholders about this program and that the Legislature should lead that effort to ensure that all possible interests are taken into account.

**Chairwoman Lowenthal** then asked about the possibility of opting-out of FirstNet. Wong acknowledged that the legislation creating the national system allows for this option, but believes it is way too soon to tell if California will want to exercise that option.

**Assemblymember Jeffries** noted that in his district, he believes that Riverside County in particular is making upgrades to their system with the sheriff's department. He then inquired about how this fits into the FirstNet scheme. Wong was unable to answer that question, but assured Assemblymember Jeffries that CTA would reach out to Riverside County the following day. She did note, however, that some local jurisdictions are making upgrades to their current LMR systems which are positive. If, however, the County is undertaking a data upgrade, then there may be some hard questions that will need to be asked.

#### Bay Area Regional Interoperability Communications System (BayRICS)

Alameda County Undersheriff, **Richard Lucia**, was the next presenter, and was asked to give the Committee an overview of the efforts in the San Francisco-Bay Area to enhance public safety interoperability. Undersheriff Lucia is a member of the BayRICS Board. He began by explaining to the Committee that in the Bay Area, they operate two public safety communications systems: 1) LMR, which is being upgraded; and 2) data, which is being configured via BayRICS.

He then noted that BayRICS differs from LA-RICS in one main capacity – ownership of towers. In the Bay Area, many companies and jurisdictions own and operate towers that support the BayRICS network. He added that this may be a possible model for the state to look towards if examining partnership possibilities to support the infrastructure of FirstNet. Undersheriff Lucia then explained that in order to add equipment to towers; agreements must be struck (via Memorandum of Understanding (MOU)) between all possible participants. This system has, to date, worked very well for them, but they are, nevertheless, in need of more towers. He also noted that other counties in Northern California (including Sacramento) have expressed an interest in joining BayRICS, and are currently examining their financial capacity to do so.

Undersheriff Lucia then announced to the committee that Karen Wong was selected to be Vice Chair of the BayRICS Board two weeks prior. He continued to explain that BayWEB is the system operated by BayRICS and that, in general, peace officers believe the system is worthy because they are able to identify people in the field in a timely fashion. He added that currently, many first responders use air cards in their devices, at an average cost of \$40-\$70/month per person. This does allow first responders in the Bay Area to communicate with each other. But it is a public system, and consequently, when there are problems or emergencies, the system quality decreases dramatically. With this in mind, BayRICS was developed to form a separate public safety system not accessible by the public. They believe this will be more reliable and will likely be cheaper for local jurisdictions to access from a public safety standpoint.

**Barry Fraser** with the BayRICS Authority next addressed the committee. He began by noting that the Authority has gotten California Environmental Quality Act (CEQA) exemptions for some of their sites. He also added that FirstNet will be a big benefit to public safety personnel and that he and others believe that BayRICS will merge directly into FirstNet's system.

That said, the National Telecommunications and Information Administration (NTIA) has placed a suspension on grants that were being used by BayRICS (specifically Long Term Evolution (LTE) monies distributed by the Broadband Technology Opportunities Program (BTOP)) – which has suspended the Authority’s ability to move forward with the build-out of their network. With this in mind, BayRICS is reaching out to form partnerships with state agencies and owners of sites and equipment in an effort to keep advancing their system. In the meantime, BayRICS is working with the NTIA to lift a portion of the grant suspension so they may proceed with some projects.

Moreover, Fraser noted that BayRICS should be a very important project for both the state and federal governments. Moving these large regional projects forward will provide for a set of lessons learned and best practices that can be applied to other projects across the country. Additionally, on the state level, both BayRICS and LA-RICS can easily be expanded into their surrounding urban and higher-cost rural areas with minimum effort.

Fraser then proceeded to outline some of his concerns with FirstNet from a technology-standpoint, as follows:

- 1) He believes that some measure of local control will be needed, noting that from an emergency management perspective, “all incidents are local.” He believes that we will not be able to set up something that is nationally based. He also thinks that these two joint powers authorities are a good start and he hopes that FirstNet agrees.
- 2) In regards to the RFP process in which states will need to engage, he noted that FirstNet has provided no details. BayRICS is working to provide information to FirstNet to help them define and craft the RFP appropriately, and he sincerely hopes the agency will take this input into account.
- 3) Fraser would like to see the grant suspension imposed by NTIA lifted. He noted that BayRICS has tried to explain to the NTIA the importance of moving these state projects forward, and he hopes the legislature can help in this regard.

He also noted that there seem to be some areas of contradiction between FirstNet and the efforts afoot in California, specifically:

- 1) Fraser expressed some concern that these early projects might deploy equipment that would ultimately be incompatible with FirstNet. In this regard, BayRICS is working with both Motorola (their main private partner) and NTIA to guarantee that equipment will either work with FirstNet or that it will be replaced, at cost.
- 2) Fraser also informed the committee that BayRICS’ spectrum rights were recently terminated because the spectrum is currently being transferred to the FirstNet Board. NTIA has mentioned that they expect to authorize temporary authority to authorities like BayRICS and LA-RICS between now and the FirstNet Board being established, and that BayRICS feels relatively comfortable with this assurance.
- 3) The composition of the FirstNet Board is supposed to include 15 members. Fraser believes that we need communication from California to NTIA to encourage the seating of a California representative on the FirstNet Board.
- 4) FirstNet is supposed to operate with all open standards. This means that the system will have to support all vendors and usable devices. This is the same with the BayRICS system and Fraser believes it is key to allowing maximum flexibility for each state.

Fraser concluded by saying that he is fairly confident that BayRICS will interconnect with FirstNet. He doesn't believe that anyone (including the federal government) is suddenly going to build a national system. It is much more likely that FirstNet will be composed of smaller networks like BayRICS and LA-RICS that both interconnect with each other and connect up with FirstNet later.

#### The Los Angeles Regional Interoperable Communications System (LA-RICS)

**Pat Mallon** represented LA-RICS before the Committee. He began by showing a video that has been used for promotional purposes for LA-RICS and also for educational purposes with agencies like NTIA. Mallon then reminded the committee that the population of Los Angeles is greater than 42 of our 50 states nationally. With the great degree of first responders in Los Angeles, interoperability has been difficult – personnel currently swap radios with each other to achieve “interoperable communications.” With this in mind, like BayRICS, LA-RICS will be both LMR and broadband and they too, are hoping for cost effectiveness with this combination.

Mallon then discussed the ongoing RFP issues experienced by LA-RICS by noting that in late 2011, the authority issued its second RFP. Shortly thereafter, the Authority considered suspending negotiations, and as of last week, has cancelled this second request. Mallon noted that the Authority is now attempting to split their contract into two – one for LMR technologies and one for broadband infrastructure.

Like BayRICS, LA-RICS' BTOP grant monies also remain in suspension – to the tune of \$70.5 million. Mallon noted that the NTIA has advised them informally that they are working with the Office of Management and Budget on an extension of grant deadlines so that projects may still move forward if and when the funding is ever released. That said, Mallon explained that 255 (out of 750 total) sites are still being pursued for the use of future LTE equipment. He, too, is hoping that FirstNet will view both BayRICS and LA-RICS as beta sites to test a national network.

Mallon then spent several minutes discussing a separate element crucial to interoperability in the Los Angeles area – the issue of the T-Band Spectrum. He explained that 11 major jurisdictions throughout the country are currently operating on the T-Band, including New York, Chicago, Boston, Philadelphia, Los Angeles and others. In Los Angeles, Mallon noted that there is not enough spectrum available to the area to “give back” the T-Band – and that to date, the Federal Communications Commission has no solution to this mandate. This is a “big unknown” regionally, and could severely hamper Los Angeles' efforts to move forward with interoperability. It could also put the area at risk during a disaster if they were forced to give back spectrum currently being used by public safety agencies.

Mallon then proceeded to inform the committee that Los Angeles has lost homeland security grant funding in recent years, as well. Specifically, the former Urban Area Security Initiative **UASI/SHISHGA (Brendan checking)** grant provided \$100 million for the operation of Los Angeles' LMR system in 2008, 2009, 2010, 2011, and 2012.

**Assemblymember Jeffries** then asked Mallon to list the set-backs he believed merited the most attention by the Legislature and others. Mallon listed the following:

- 1) The elimination of grant monies.
- 2) The T-Band give back. Although Mallon did note that a T-Band Congress group has been formed; it is a national group working with the Southern California congressional delegation (led by Congressman Adam Schiff) to move things forward.

- 3) Legislation coming in the next few weeks pertaining to environmental approvals and CEQA exemptions (which will allow LA-RICS to move forward with several sites).

**Assemblymember Achadjian** then inquired about the grant money that expires. Mallon explained that if these monies were allowed to expire without being used, then groups like LA-RICS would probably have to go back to the federal government to request them all over again (if the federal government didn't automatically make a decision to absorb those funds back into the national budget).

#### Legislative Solutions/Follow-Up Items

- 1) A statewide governance organization is needed to implement the recommendations and protocols handed down by the FirstNet Board. Project teams will be required and that they will need to develop the following:
  - b. Communications Plan
  - c. Road Map
  - d. Public Awareness Campaign for First Responders
  - e. Architecture Concept & Design for Infrastructure
    - i. Ownership will need to be discussed
    - ii. The possibility of partnerships will also need to be discussed
  - f. Funding
    - i. California is currently slated to receive approximately \$7 billion for our share of this new interoperability infrastructure. This will not cover our costs and the state will need to look for grants and partnerships. Additionally, we will need to find funding to sustain the system once it is built.
- 2) As a state, we will need to undergo a needs assessment to ascertain our own requirements for public safety and then determine additional requirements that will be needed to support FirstNet.
- 3) The Legislature should lead that effort to inform and educate stakeholders about FirstNet to ensure that all possible interests are taken into account.
- 4) CTA should reach out to the Riverside County Sheriff's Office to ascertain the status of any upgrades they are undertaking to their system in an effort to ensure compatibility with FirstNet.
- 5) The Legislature should work with BayRICS and LA-RICS to lift the grant suspensions imposed by the NTIA.
- 6) The composition of the FirstNet Board is supposed to include 15 members. The Legislature should work separately, or in conjunction with others, to encourage the seating of a California representative on the FirstNet Board.
- 7) The Legislature should approve pending legislation pertaining to environmental approvals and CEQA exemptions to allow LA-RICS to move forward with several sites.



## **Joint Legislative Committee on Emergency Management**

### **Informational Hearing** ***Emergency Interoperability: What's Next for California?***

**Monday, August 6<sup>th</sup>**  
**Upon Adjournment of Floor Session**  
**State Capitol, Room 444**

#### I. Welcome and Introductions

#### II. Federal and State Update

- Karen Wong
  - California Technology Agency

#### III. Bay Area Regional Interoperability Communications System (BayRICS) Update

- Barry Fraser
  - BayRICS Authority
- Undersheriff Richard T. Lucia
  - Alameda County Sheriff's Office

#### IV. Los Angeles Regional Interoperable Communications System (LA-RICS) Update

- Pat Mallon
  - LA-RICS

#### V. Public Comment and Questions

#### VI. Closing Remarks



## **Joint Legislative Committee on Emergency Management**

### **Briefing Paper on Emergency Interoperability**

#### **Abstract**

For years, California has tried to unify its emergency radio systems, with the goal of keeping first responders in constant communication during a disaster. Even as this task nears completion, the federal government has begun deploying an even larger system designed to standardize disaster communication in a manner that may make these current efforts irrelevant.

#### **I. Introduction**

Perhaps most dramatically demonstrated during the communications snarl that hindered emergency crews on 9/11, the inability of police and firefighters to talk to each other in a crisis shocked and horrified the nation. A goal was identified, and a buzzword born: Interoperability.

#### **II. Disaster Management in the State of California**

##### **A. State Emergency Management System**

The Standardized Emergency Management System (SEMS), developed as a result of the 1991 East Bay Hills Fire, is California's system for managing emergencies. SEMS provides a consistent template to enable State, tribal and local governments, nongovernmental organizations, and the private sector to protect against, respond to, and recover from all emergencies and disasters regardless of scope, cause, location, or complexity. It is a core set of doctrines, concepts, principles, terminology, and organizational processes that enables effective, efficient, and collaborative incident management. This framework forms the substructure for interoperability and enables diverse agencies and organizations to conduct coordinated and efficient incident response operations.

All state government agencies must use SEMS when responding to multi-jurisdictional or multi-agency emergencies. All local government agencies must use SEMS in multi-jurisdictional or multi-agency emergency responses to be eligible for state reimbursement of response-related personnel costs.

Similarly, the National Incident Management System (NIMS) was established via Homeland Security Presidential Directive in 2004 to establish a systematic, proactive approach by which to guide governments and agencies (including the federal government) at all levels to work seamlessly during a disaster. Together, SEMS and NIMS provide the basis of California's Emergency Response System.

That said, incidents typically begin and end locally, and are managed on a daily basis at the lowest possible geographical, organizational, and jurisdictional level. For this reason, every county is responsible for the development of its own Emergency Operations Plan, utilizing SEMS and NIMS, which takes into account each local government's resources and unique hazards and terrain. Should an earthquake, fire, or other such disaster occur anywhere in California, it is expected that first responders will adhere to SEMS and NIMS and respond accordingly – thereby seeking regional, state and federal assistance as needed.

## **B. Communication During a Disaster**

A critical component to SEMS and the successful management of a disaster in California is the ability of all first responders – regardless of specialty or region – to communicate with each other, officials, and the public at-large.

The 9/11 Commission Report found that:

“The inability to communicate was a critical element at the World Trade Center, Pentagon, and Somerset County, Pennsylvania, crash sites, where multiple agencies and multiple jurisdictions responded. The occurrence of this problem at three very different sites is strong evidence that compatible and adequate communications among public safety organizations at the local, state, and federal levels remains an important problem<sup>1</sup>.”

Governments across the country are working to establish the infrastructure and networks to allow diverse emergency response jurisdictions to communicate with each other seamlessly during an event. It is crucial that first responders know both where additional assistance is needed, and also facilities/areas that they should avoid entering (i.e. fires deemed “out of control,” buildings in danger of collapse, areas with pipelines in danger of rupturing).

---

<sup>1</sup> The National Commission on Terrorist Attacks Upon the United States, “9/11 Commission Report,” 2004, pg. 397.

### **III. Delays to Statewide and National Interoperability**

In the wake of 9/11, former U.S. Homeland Security Secretary Michael Chertoff remarked in 2006 that “...the critical foundation for an effective response is the ability to talk to one another.” He explained that:

“It is a task that is very formidable, and requires not only a technological element, but also an element of governance, an element of how we deal with each other in terms of very different organizations and very different chains of command<sup>2</sup>.”

#### **A. Technology**

Communications technology is constantly evolving, which makes selecting the use of an appropriate mechanism for true interoperability a moving target. Currently, the merging of voice and data communications combined with widespread use of proprietary and incompatible communications gear are issues that present unique challenges to the creation of a public safety interoperability network. For example, the focus immediately after 9/11 was on the use of radio (Land Mobile Radio, or LMR) technology. But while agencies across the country scrambled to improve radio interoperability, first responders began recognizing the importance of data communications and technology. At the same time, vendors began combining voice and data capabilities into converged communications networks – commonly called “voice over IP” (voice over internet protocol). Thus, in many instances, agencies and governments have spent years researching and procuring equipment, only to learn very quickly that is out of date.

#### **B. Proprietary Equipment**

To complicate the question of technology further, vendors’ products often do not or cannot communicate with each other. While this is often a business decision on the part of vendors, many have begun to recognize the importance of adapting that model for the benefit of public safety interoperability. The solution has been the development of open standards like the National Information Exchange Model (NIEM) – an end-user driven, federally supported, government-wide initiative to “connect communities of people who share a common need to exchange information in order to advance their missions.” NIEM offers a common vocabulary so that when two or more people talk to each other they can exchange information based on common words that they both understand.

---

<sup>2</sup> Remarks by Homeland Security Secretary Michael Chertoff at the Tactical Interoperable Communications Conference, Washington, D.C. May 8, 2006.

It provides a data model, governance, methodologies, training, technical assistance, and an active community to assist users (in this case, vendors) in adopting a standards-based approach to exchanging information. As such, NIEM provides a forum for accelerating collaboration and identifying common approaches to challenges for companies and users<sup>3</sup>.

In the case of public safety interoperability, those NIEM-proliferated standards are attempting to be replicated and incorporated into “off-the-shelf” equipment that is accessible to small and medium-sized jurisdictions. It is incumbent upon technology vendors to incorporate these standards, however, and that is a work in a progress.

### **C. Spectrum Availability**

A key recommendation included in the 9/11 Commission Report was that “Congress should support pending legislation which provides for the expedited and increased assignment of radio spectrum for public safety purposes<sup>4</sup>.” Public safety radio systems typically operate in portions of the 800MHz band. But that band is also used by commercial wireless carriers and private radio systems. This creates a problem of harmful interference to 800 MHz public safety communication systems caused by higher-density commercial wireless systems.

In January, the Federal Communications Commission (FCC) took unprecedented action by designating Long Term Evolution (LTE) as the communications standard infrastructure for the network. LTE is a wireless broadband technology designed to support roaming Internet access via cell phones and handheld devices. Because LTE offers significant improvements over older cellular communication standards, it is often referred to it as “4G” (fourth generation) technology. The following month, Congress enacted a landmark measure to transform the public safety broadband spectrum using largely LTE technologies (see “FirstNet” below).

### **D. The Importance of Unified Communication**

When discussing the importance of interoperability and communication for effectively managing emergencies, the discussion typically involves both unified technology and a culture of coordinated communication – across jurisdictions, geographies, and leadership mentalities. Interoperability involves the acknowledgement that emergencies and disasters are best managed cooperatively, and not in a “siloeed” manner.

---

<sup>3</sup> National Information Exchange Model, “What is NIEM?” <https://www.niem.gov/about/what-is-niem/Pages/what-is-niem.aspx>, Accessed July 31, 2012.

<sup>4</sup>The National Commission on Terrorist Attacks Upon the United States, “9/11 Commission Report,”2004, pg. 397.

This is not just about technology. The technology is, yes, a major component. But this is also absolutely about how so many agencies and jurisdictions *use* that technology. The changes to organizational structure, leadership mentality and “rank and file” personnel training that will need to occur to ensure total emergency communications interoperability is mammoth, in scope. For just a few examples:

- There are more than five different terms in use nationally for a “stand-by fire crew.”
- What one fire department calls a “Halligan” another may call a “Hooligan Tool” and another may refer to as a “Pro Tool.”
- Many police and fire agencies use “10-codes” as an abbreviated communication system. But even between them, different codes mean different things. For example, some use “10-4” to indicate that a message has been received. Yet others use “10-26” or “10-39.”

Codes and terminology are drilled into young police officers and firefighters in training academies as a manner of survival. Yet in terms of interoperability, the lack of a unified language presents a serious challenge to managing a large-scale incident involving numerous jurisdictions. Overcoming this challenge of communication barriers will require changes to the command and control structures of *all* emergency response agencies (of which there are nearly 100 in Los Angeles County alone).

It should be noted that headway has been made. Regional communications have been greatly enhanced, technology has evolved, and government and industry are working together on standards. Solutions have been developed and implemented in major urban areas to facilitate voice communications between agencies. Bridging devices have helped to make this possible. Data sharing hasn’t come as far, but projects have been implemented to help fill the void – including waivers granted by the FCC to jurisdictions such as Los Angeles, Mississippi, and the San Francisco Bay Area – to build their own public safety broadband networks. Once rolled out, these networks *could* provide the backbone for a national broadband network.

#### **IV. The Los Angeles Regional Interoperable Communications System (LA-RICS)**

The need for emergency communications interoperability is especially great in the Los Angeles region with over 50 law enforcement agencies and 31 fire departments serving a 4,084 square mile region and 10 million County residents. Interoperability in this region involves 88 independent cities and agencies, both the City and County of Los Angeles (and their respective law enforcement departments), several port authorities, a national forest and others.

## **A. Organization**

In 2009, the Los Angeles Regional Interoperable Communications System Authority (LA-RICS) was established as a joint powers authority specifically to create the Los Angeles Regional Tactical Communications Subsystem – a network that would unite the region’s 34,000 first responders through voice and data communications.

The LA-RICS Authority received one of several waivers from the FCC to proceed with a regional interoperability network project. In as such, LA-RICS proposes to deploy a 700MHz public safety mobile broadband network across all of Los Angeles County, featuring almost 300 wireless 700MHz public safety broadband sites (using 176 new and 114 existing infrastructure sites), and 100-miles of high-capacity fiber backbone. The network would enable computer-aided dispatch, rapid law-enforcement queries, real-time video streaming, medical telemetry and patient tracking, geographic information systems (GIS) services for first responders, and other applications.

LA-RICS applied for the largest federal grant ever given for this purpose. The Authority received more than 11 federal grants with a combined value of nearly \$270 million, including a \$154.6 million U.S. Department of Commerce Broadband Technology Opportunities Program (BTOP) grant, the largest of its kind in the nation. This grant is expected to cover the infrastructure costs in deploying a broadband public safety network for the project which, alone, is estimated to generate 2,181 jobs, including jobs produced indirectly from the project. The balance of this large-scale project -- approximately \$500 million -- is expected to be borne by the County of Los Angeles, in one form or another. If it is built, the LA-RICS network would be one of the largest and most complex of its kind in the country.

## **B. Contract Award**

After several years of work with two major possible vendors – Raytheon and Motorola, Inc. -- a contract for development of the LA-RICS system was awarded to Raytheon and its partners. Unfortunately, in March 2011, the County Counsel’s office recognized a flaw preventing the award from proceeding. The County of Los Angeles and LA-RICS started over in July 2011.

Because a large portion of the federal grant monies awarded to LA-RICS came with specific timeframes, a measure was introduced in the state legislature in late 2011 to assist the authority with awarding a second contract in a timely fashion. Assembly Bill 946 (2011, Lowenthal), signed into law by Governor Jerry Brown, allows the County of Los Angeles or LA-RICS the option to use a solicitation process to award a contract for design, construction, and delivery of a regionally interoperable communications system and all related infrastructure. This authority will help decrease the overall project risk, time required for implementation, and overarching costs. It also ensured that the County was

able to maintain its \$270 million in federal grant funds. A new award is expected to be announced very soon.

## **V. Bay Area Regional Interoperable Communications System (BayRICS)**

The San Francisco-Bay Area is a dynamic and diverse region demanding a unique solution for public safety interoperability. The area includes almost 50,000 public safety users and over 500 public safety facilities spanning approximately 2.5 million households and 186,000 businesses.

### **A. Organization**

The Bay Area Regional Interoperable Communications System (BayRICS) Authority is a joint powers authority formed to manage the San Francisco Bay Area Wireless Enhanced Broadband Project (BayWEB) -- a public-private partnership led by Motorola, Inc. The Authority is composed of the counties of Alameda, Contra Costa, Marin, San Francisco, Santa Clara, San Mateo, and Sonoma, the core cities of Oakland, San Francisco, and San Jose. The counties of Napa, Santa Cruz, Solano, and Sacramento are also exploring possible membership and inclusion.

The BayRICS Authority also received a waiver from the FCC to proceed with its own regional interoperability network project – BayWEB. BayWEB will be a mechanism by which to deploy a 700MHz interoperable wireless public safety broadband network and a public access wireless broadband network in the greater San Francisco Bay Area. Examples of applications to be enabled include real-time mobile video for field officers, geolocation information about damage, dangers, hazardous materials, road conditions, and personnel and vehicle location; immediate Amber Alert file transfers, and virtual command centers to support emergency evacuations. The network will involve the use of 200 existing public safety sites. The build-out and deployment of the BayWEB network is estimated to create more than 1,300 jobs.

The BayRICS Authority will manage quality-of-service, access, interoperability, policy, and system management issues for the public safety network. BayRICS was also awarded several federal grants including a \$50,593,551 BTOP grant.

An added component of BayWEB is the offering of wireless capacity on the system's open network to local Internet service providers in the Bay Area. Seven small business wireless Internet service providers have already signed on to utilize this system to provide service to community anchor institutions, businesses, and end users.

## **B. Contract Award**

Unique to BayRICS is the fact that the system's \$50.6 million BTOP grant was awarded to Motorola, Inc. – the authority's lead partner. Motorola has also been the lead partner in managing similar deployments of public safety wireless access networks, including the Palmetto public safety network in South Carolina and the Starcom public safety network in Illinois.

## **VI. The First Responder Network Authority (FirstNet)**

Despite progress establishing the joint powers authorities in Los Angeles, the Bay Area and other regions across the country, the President and Congress have decided in the past several years to move away from the long-standing "network of networks" approach to communications and towards the concept of one entity holding broad powers as the sole licensee of a nationwide interoperability network. Assistant Commerce Secretary Anna Gomez recently remarked that this centralized approach was necessary to ensure operability. "We did not want to repeat the same circumstances of the past in which voice networks were built on individual bases and therefore were not interoperable so that police and fire couldn't communicate during an emergency or EMS couldn't communicate with the National Guard, or whoever the responders are in the particular incidents<sup>5</sup>."

### **A. The Middle Class Tax Relief and Job Creation Act of 2012**

In February 2012, Congress enacted, and President Barack Obama signed into law, the Middle Class Tax Relief and Job Creation Act of 2012 (Act, H.R. 3630), which directed the creation of a nationwide interoperable public safety broadband network<sup>6</sup>. According to the *Federal Register*, the Act "meets a long-standing priority of the Obama Administration to create a single, nationwide interoperable public safety broadband network that will, for the first time, allow police officers, fire fighters, emergency medical service professionals, and other public safety officials to communicate with each other across agencies and jurisdictions<sup>7</sup>."

The Act tasks the Department of Commerce's National Telecommunications and Information Administration (NTIA) with launching a new independent authority, the First Responder Network Authority (FirstNet), by August 20<sup>th</sup> of this year (2012). FirstNet will be responsible for designing, building and operating a single nationwide network in collaboration with a private sector operator that will be chosen through a competitive bidding process<sup>8</sup>.

---

<sup>5</sup> Maynard, Melissa, "States, Feds Posed to Write New Chapter in Public Safety Communications." Pew Center on the States. May 30, 2012.

<sup>6</sup> Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112-96, 126 Stat. 156 (2012).

<sup>7</sup> *Federal Register*, "Notices," Vol. 77, No. 95, Wednesday, May 16, 2012, pp 28857-28858.

<sup>8</sup> Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112-96, 126 Stat. 156 (2012), §6206(b)(1).

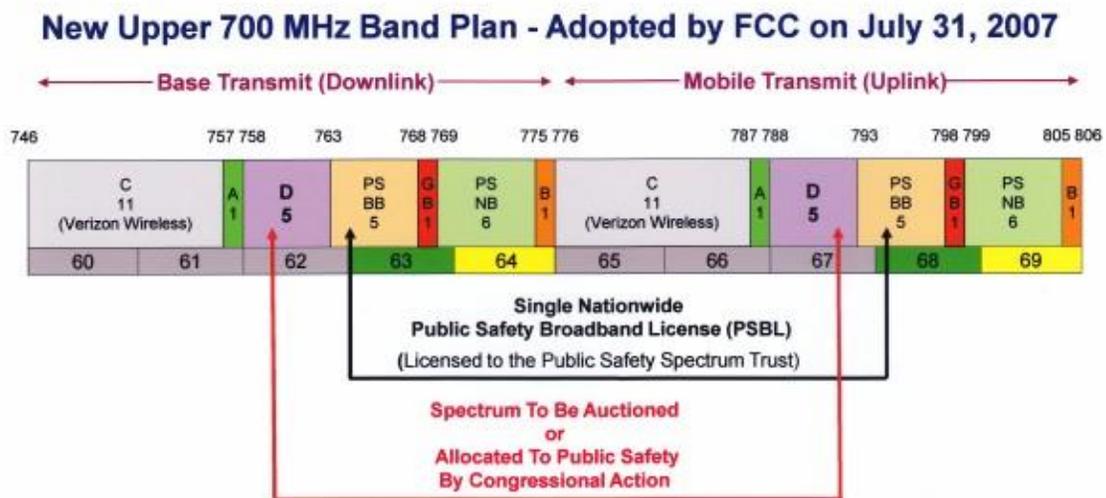
According to the legislation, after the private operator is chosen, FirstNet will develop a blueprint and determine funding levels necessary to complete the segment of the national network to be housed within each state. The Act also stipulates that the network must eventually operate on a break-even basis by charging public safety agencies enough money to cover ongoing expenses<sup>9</sup>.

Additionally, the Act charges NTIA with establishing a grant program to assist State, regional, tribal, and local jurisdictions with identifying, planning, and implementing the most efficient and effective means to use and integrate the infrastructure, equipment and other architecture associated with the network<sup>10</sup>. Up to \$135 million will be available to NTIA for this State and Local Implementation grant program. Furthermore, NTIA has until August 22, 2012 to establish requirements for the grant program to include, at a minimum, a determination of the scope of eligible activities that will be funded, a definition of eligible costs, and a method to prioritize grants for activities that ensure coverage in rural as well as urban areas<sup>11</sup>.

Congress has approved \$7B to tackle this issue nationally.

## B. The 700 Megahertz Public Safety Band and D Block

HR 3630 also carved out a new spectrum for public safety users and provided initial funding for the build-out of the national network (\$7 billion nationally). Specifically, the Act called upon the FCC to reallocate space in the 700MHz band of the spectrum -- known as D Block -- for dedicated public safety use, allowing more users to be on the network as well as providing bandwidth for additional applications.



Source: Seybold, Andrew, "The Value of the D Block" 10/11/2011

<sup>9</sup> Maynard, Melissa, "States, Feds Posed to Write New Chapter in Public Safety Communications." Pew Center on the States. May 30, 2012.

<sup>10</sup> Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112-96, 126 Stat. 156 (2012), §6302(a).

<sup>11</sup> Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112-96, 126 Stat. 156 (2012), §6302(c).

The FCC is hoping to auction the D Block to commercial interests with the stipulation that the winning bidder form a public-private partnership under the direction of the Public Safety Spectrum Trust Corp., a nonprofit consisting of public safety groups. This has never been done before, and it is unclear what interest exists within the private sector for participation in this spectrum auction. Speculation suggests that this auction likely would not occur until 2016 as much work needs to be done to lay the groundwork for success beforehand.

### **C. Status**

The National Governors Association held a meeting in late June in an attempt to help states understand the federal legislation and options it lays out for them, including whether to build their own portion of the network or allow FirstNet to do so on their behalf. That said, it is important to mention that as an entity, FirstNet still does not technically exist. The 15-member governing board for this Authority is in the process of being appointed, with an expectation that all members will have been chosen by the end of August, 2012.

For some perspective on timing, it should be noted that the private cellular carriers (i.e. Verizon, Metro PCS, AT&T, Metro Cellular and Sprint) all took approximately two years to build the infrastructure that was crucial to supporting their broadband networks. At the time, these companies had also been operating for many years, with structured business plans and operations models in place. By contrast, FirstNet has not yet even been officially established. The FCC has estimated that the FirstNet system will require up to \$6.5 billion in capital expenditures over 10 years<sup>12</sup>.

## **VII. FirstNet's Implications for California**

### **A. Opt In or Opt Out?**

States like California who have made some progress in the development of regional interoperability systems will face difficult, time-sensitive questions in the months ahead about whether to allow FirstNet to build and operate the network on their behalf, or instead, to use a provision that allows them to opt out and build and operate their own portion of the national network while adhering to the federal standards set by FirstNet.

Under the legislation passed by Congress, states that opt out will have to demonstrate their ability to comply with a host of technical requirements and will receive less funding for construction of the network – and no funding for operating or maintaining it.

---

<sup>12</sup> Pittman, Elaine, "Little Progress on National Public Safety Network 10 Years After 9/11," *Forbes*. August 31, 2011.

They will also have to demonstrate technical and operational know-how and adequate funding capacity in order to secure a lease of the allocated spectrum.

A third, not-yet-truly-explored possibility could be the option for California to proceed with “building out” our systems as planned, and then later transferring the network and its corresponding assets to FirstNet.

## **B. Status of Existing LTE Projects**

Because NTIA wants to be “prudent” with any investments that are made before FirstNet develops its blueprint for the nationwide network’s architecture, it has recently suspended a large portion of grant funds issued under the Broadband Technology Opportunities Program – including hundreds of millions of dollars previously allocated to both LA-RICS and BayRICS. NTIA has issued a list of “low risk” activities that these joint powers authorities may continue to proceed with (including backhaul, site upgrades, and the purchase of “ancillary” equipment), but has remained firm in its commitment to await further direction from FirstNet in regards to many of the LTE projects that these (and other jurisdictions) had proposed – many of which were in the initial rounds of project exploration and development<sup>13</sup>.

## **C. T-Band Give Back**

While much attention has been paid to the fact that the Middle Class Tax Relief and Job Creation Act of 2012 provides for the addition of D Block to public safety users, one controversial aspect of the legislation is the mandated “give-back” of T-Band spectrum. “T-Band” refers to the 470 - 512 MHz frequency band, which is shared between public safety agencies and the television broadcasters (hence the “T-Band” designation) and was made available on a shared use basis by the FCC for Land Mobile Radio systems such as those used by public safety agencies in 13 major metropolitan areas of the country, including Los Angeles.

Section 6103 of the legislation requires giveback of the T-Band spectrum by public safety licensees and specifies that it must be reallocated no later than nine years after enactment of the law. It is expected that relocation of those users will be completed two years after the spectrum is competitively bid. The expectation is that this spectrum will be reallocated and auctioned to commercial use (likely used for television broadcast). Proceeds from this future auction are to be used to cover the costs to relocate affected public safety licensees, with the remainder going to the U.S. Treasury.

---

<sup>13</sup> National Telecommunications and Information Administration, BroadbandUSA “Fact Sheet.”

The County of Los Angeles has spent a large amount of time and money upgrading equipment and technologies throughout the past decade for use within the T-Band spectrum. The County is concerned with the waste of money that would be involved with now abandoning these technologies so soon after adoption.

#### **D. Next Steps**

The Middle Class Tax Relief and Job Creation Act of 2012 directs FirstNet to consult with regional, state, tribal, and local jurisdictions about a number of subjects including, among other things, the integration of existing public safety governance and planning authorities, additional parameters of the grant program, the manner by which existing infrastructure may be leveraged, acceptable state and local grant activities, and possible state funding and performance requirements<sup>14</sup>. It is expected that, once the FirstNet Board and Authority are officially established, comments will be received and appropriately considered as a means of driving future actions.

### **VIII. Conclusion**

Prior to 9/11, the concept of interoperability was highlighted within the public safety community by incidents like Columbine – those where multiple jurisdictions responded to high-stress events and found themselves unable to communicate with each other. 9/11 forced the idea of interoperability into the minds of the public.

While that public awareness has lent itself to the creation of FirstNet, there is still much work to be done in this arena. The infrastructure needs required to support a nationwide public safety broadband network are extensive. The operational, leadership, and organizational changes that will need to be made in a cooperative fashion across the public safety spectrum are also numerous.

As a state, California has faced its share of wildfires throughout the past decade. But we have managed to avoid the type of large-scale disasters that highlighted deficiencies in Louisiana, New York, and Washington, D.C. All emergency managers will tell you that it is not a matter of being prepared “if” disaster strikes – but “when.” For this reason, it is imperative that we, as a state, continue to strive for improvement in the arenas of emergency communications and interoperability with a keen eye towards enhanced public safety and emergency management when disasters occur.

---

<sup>14</sup>Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112-96, 126 Stat. 156 (2012), §6206(c)(2).  
Page **12** of **14**

## **Glossary of Terms**

(alphabetical order)

- **BayRICS** – The Bay Area Regional Interoperable Communications System; a joint powers authority which manages BayWEB – a mechanism to deploy a 700MHz interoperable wireless public safety broadband network in the greater San Francisco Bay Area.
- **BTOP** – Broadband Technology Opportunities Program; a grant program administered by the U.S. Department of Commerce.
- **D Block** -- a 10 MHz piece of spectrum in the upper 700 MHz spectral band. It sits adjacent to the spectrum currently licensed to public safety.
- **FCC** – Federal Communications Commission; regulates interstate and international communications by radio, television, wire, satellite and cable in all 50 states, the District of Columbia and U.S. territories. It was established by the Communications Act of 1934 and operates as an independent U.S. government agency overseen by Congress.
- **FirstNet** – the First Responder Network Authority; a new independent authority to be launched by the U.S. Department of Commerce’s National Telecommunications and Information Administration, under the edict of the Middle Class Tax Relief and Job Creation Act of 2012 (H.R. 3630).
- **GIS** – geographic information systems; a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. In the simplest terms, GIS is the merging of cartography, statistical analysis, and database technology.
- **H.R. 3630** – House Resolution 3630; the Middle Class Tax Relief and Job Creation Act of 2012, passed by Congress and signed into law by President Barack Obama in February 2012.
- **Interoperability** -- the ability of diverse systems and organizations to work together (inter-operate).
- **LMR** – Land Mobile Radio; a term that denotes a wireless communications system intended for use by terrestrial users in vehicles (mobiles) or on foot (portables). Such systems are used by emergency first responder organizations, public works organizations, or companies with large vehicle fleets or numerous field staff.
- **LTE** – Long Term Evolution; wireless broadband technology designed to support roaming Internet access via cell phones and handheld devices; often referred to as “fourth generation” or “4G” technology.

- **LA-RICS** – Los Angeles Regional Interoperable Communications System; a joint powers authority which manages the Los Angeles Regional Tactical Communications Subsystem -- a network to unite the region’s 34,000 first responders through voice and data communications.
- **NIMS** – The National Incident Management System; a systematic, proactive approach by which to guide governments and agencies at all levels to work seamlessly during a disaster.
- **NIEM** – The National Information Exchange Model; an end-user driven, federally supported, government-wide initiative to connect communities of people who share a common need to exchange information in order to advance their missions. Offers a common vocabulary to enhance the understanding and communications capabilities of two or more parties.
- **NTIA** – The National Telecommunications and Information Administration; an agency of the United States Department of Commerce that serves as the President's principal adviser on telecommunications policies pertaining to the United States' economic and technological advancement and to regulation of the telecommunications industry.
- **SEMS** -- The Standardized Emergency Management System; provides a consistent template to enable State, tribal and local governments, nongovernmental organizations, and the private sector to protect against, respond to, and recover from all emergencies and disasters regardless of scope, cause, location, or complexity.
- **T-Band** – a reference to the 470-512 MHz frequency band, which is shared between public safety agencies and the television broadcasters (hence the “T-Band” designation); was made available on a shared use basis by the FCC for LMR (Land Mobile Radio) systems.
- **Voice Over IP** – VOIP/Voice-Over Internet Protocol; the term for the convergence of voice and data capabilities into one communications network.



# **MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012**

---

## **TITLE VI – PUBLIC SAFETY COMMUNICATIONS AND ELECTROMAGNETIC SPECTRUM AUCTIONS**

# **MAKING GOOD ON AN OVERDUE PROMISE TO OUR NATION'S FIRST RESPONDERS**

---



- **Act implements key Administration priorities**
  - Public Law No. 112-96 (enacted February 22, 2012)
- **NTIA to establish the First Responder Network Authority (FirstNet)**
- **FirstNet to establish a nationwide public safety broadband network (PSBN) based on a single, national network architecture**
- **Reallocates 700 MHz D Block spectrum to public safety**
  - The Federal Communications Commission (FCC) to grant a single license to FirstNet for the use of both the 700 MHz D block and existing public safety broadband spectrum
- **Deficit-neutral**
  - Funded through proceeds of spectrum auctions through FY 2022
  - Network is self-sustained over long-term through fees

# TECHNICAL ADVISORY BOARD FOR FIRST RESPONDER INTEROPERABILITY



- Act establishes an Interoperability Board within the FCC
- FCC Chairman to appoint 14 voting members not later than 30 days after enactment
- NTIA Assistant Secretary appoints 1 non-voting member (*Dereck Orr of PSCR has been appointed*)
- Not later than 90 days after enactment, the Interoperability Board, in consultation with NTIA, NIST, and OEC, shall:
  - Develop minimum technical requirements to ensure a nationwide level of network interoperability
  - Submit to the FCC for review the recommended minimum technical requirements
- Not later than 30 days after the date on which the Interoperability Board submits recommendations to FCC, the FCC shall approve the recommendations with any revisions it deems necessary and transmit them to FirstNet



# FIRST RESPONDER NETWORK AUTHORITY

## “FirstNet”



- Act establishes FirstNet as an independent authority within NTIA
  - Exempt from Paperwork Reduction Act (PRA), Administrative Procedures Act (APA), and Regulatory Flexibility Act (RFA)
- Headed by a 15-Member Board
- Holds a single public safety 700 MHz wireless broadband license
- Takes all actions necessary to ensure the design, construction, deployment, and operations of the nationwide PSBN, in consultation with Federal, State, tribal, and local public safety entities, Director of NIST, the FCC, and public safety advisory committee
- Ensures deployment phases with substantial rural coverage milestones



- **FirstNet Board shall consist of:**
  - **Secretary of Homeland Security**
  - **Attorney General of United States**
  - **Director of Office of Management and Budget**
  - **12 individuals to be appointed by the Secretary of Commerce not later than 180 days after enactment.**
  - **The appointments shall have:**
    - **Not fewer than 3 individuals to represent collective interests of States, locals, tribes, and territories**
    - **Not fewer than 3 individuals who have served as public safety professionals**
  - **The appointments shall:**
    - **Seek to ensure geographical and regional representation**
    - **Seek to ensure rural and urban representation**



# FIRSTNET BOARD (cont.)



- Each Board member shall have at least **1** of the following qualifications:
  - **Public safety expertise** – Knowledge and experience in Federal, State, local, and tribal public safety or emergency response
  - **Technical expertise** – Technical expertise and fluency regarding broadband communications, including public safety communications
  - **Network expertise** – Expertise in building, deploying, and operating commercial telecommunications networks
  - **Financial expertise** – Expertise in financing and funding telecommunications networks



# FIRSTNET

## PUBLIC SAFETY ADVISORY COMMITTEES

---



- FirstNet shall establish a standing advisory committee for public safety
- FirstNet may also establish, as necessary, additional standing or ad hoc committees, panels, or councils



# STATE AND LOCAL CONSULTATION



- **FirstNet must consult with regional, State, tribal, and local jurisdictions regarding the distribution and expenditures of any amounts required to carry out its responsibilities, including:**
  - Construction or access to the core network and any radio access network build out;
  - Placement of towers;
  - Coverage areas of the network, whether at the regional, State, tribal, or local levels;
  - Adequacy of hardening, security, reliability, and resiliency requirements;
  - Assignment of priority to local users;
  - Assignment of priority and selection of entities seeking access to or use of the nationwide interoperable PSBN; and
  - Training needs of local users



**FirstNet consultation must occur through the designated single officer or governmental body designated by each State**



# STATE AND LOCAL IMPLEMENTATION GRANT PROGRAM

- NTIA shall establish a grant program to States
- Program shall assist State, regional, tribal, and local jurisdictions to identify and plan the most effective way to utilize and integrate the infrastructure, equipment, and other architecture associated with the nationwide PSBN
- Not later than 6 months, and in consultation with FirstNet, NTIA must establish grant program requirements, including:
  - Defining eligible costs
  - Determining scope of eligible activities
  - Prioritizing grants for activities that ensure coverage in rural as well as urban areas
- Each State shall certify a single officer or governmental body to serve as coordinator of implementation of grant funds
  - Also serves as point for FirstNet consultation under §6206



# STATE NETWORK PROCESS



- FirstNet must complete the RFP process for the construction, operations, maintenance, and improvements of the nationwide PSBN
- Upon completion of the RFP process, FirstNet will notify the Governor of each State (or his/her designee) of:
  - Completion of the RFP process;
  - Details of the proposed plan for buildout of the nationwide, interoperable broadband network in the State; and
  - Funding levels for the State as determined by NTIA
- No later than 90 days after being notified by FirstNet, each Governor must choose whether his/her State will:
  - Participate in the deployment of the nationwide PSBN as proposed by FirstNet; or
  - Conduct its own deployment of a radio access network in the State



# STATE NETWORK STEPS



- If State decides to opt-out, the Governor must notify FirstNet, NTIA, and the FCC
- The State then has 180 days to develop and complete RFPs for the construction, maintenance, and operations of the radio access network (RAN) within the State
- The State shall submit an alternate plan for the construction, maintenance, and operations of the RAN within the State to the FCC and the plan must demonstrate:
  - That the State will be in compliance with the minimum technical interoperability requirements
  - Interoperability with the nationwide public safety broadband network
- FCC shall review and either approve or disapprove the plan





# STATE NETWORK PLANS AND POTENTIAL GRANT

---

- **If the FCC approves the plan:**
  - State may apply to NTIA for a grant to construct (not operate and maintain) the RAN within the State
  - State shall apply to NTIA to lease spectrum capacity from FirstNet
- **In order to obtain a grant and lease, the State must demonstrate it has:**
  - Technical capability to operate, and the funding to support, the State radio access network;
  - Ability to maintain ongoing interoperability with the nationwide PSBN;
  - Ability to complete the project within the specified comparable timelines specific to the State;
  - Cost-effectiveness of the State plan; and
  - Comparable security, coverage, and quality of service to that of the nationwide PSBN





# STATE NETWORK PLANS AND POTENTIAL GRANT

- **If the FCC disapproves the plan:**
  - The construction, maintenance, operations, and improvements of the network within the State shall proceed in accordance with the plan proposed by FirstNet
  - U.S. District Court for the District of Columbia has exclusive jurisdiction to review a decision of the FCC
- **Additional State Network Items:**
  - If a State chooses to build its own RAN, the State shall pay any user fees associated with the State use of elements of the PSBN
  - **Matching Share Requirement:** Section 6302 requires that the federal share of any activity carried out under that section using a grant may not exceed 80 percent of the eligible costs of carrying out that activity
  - Therefore, there will be a minimum 20 percent matching requirement for both the State and Local planning grants and the State construction grants





# FUNDING

## NTIA BORROWING AUTHORITY

---



- The Act grants NTIA borrowing authority not to exceed \$2B to implement Subtitle B – Governance of Public Safety Spectrum



- The Act grants NTIA borrowing authority not to exceed \$135M to implement Section 6302 – State and Local Implementation
- In each case, NTIA borrows the initial funds from the general fund of the Treasury prior to the deposit of auction proceeds into the Public Safety Trust Fund (PSTF)



# FUNDING

## PUBLIC SAFETY TRUST FUND

- Amounts deposited in the PSTF are funds from the incentive auctions to be carried out by the FCC under 47 U.S.C. § 309(j)(8)(G) or the auction of spectrum pursuant to Section 6401
- Funds deposited in the PSTF are available on a cascading order of priority:
  - Repayment of amounts borrowed by NTIA - up to \$2B
  - Repayment of amounts borrowed by NTIA - up to \$135M
  - Buildout of PSBN in the amount of \$7B minus amount borrowed initially by NTIA (Section 6207 of the \$2B)
  - Public Safety Research and Development - \$100M
  - Deficit Reduction - \$20.4B
  - 911, E911, and NG911 - \$115M
  - Additional Public Safety Research - \$200M
  - Any additional deficit reduction
- *Note: PSTF may not be the first fund to receive auction proceeds*





# TIMELINE

2/22/12 Enactment of Statute

3/23/12 30 days/FCC appoints Interoperability Board

5/22/12 90 days/Interoperability Board submits recommendations to FCC

6/21/12 +30 days/FCC approves recommendations with any necessary revisions

8/20/12 180 days/Secretary of Commerce appoints FirstNet Board

8/22/12 6 months/NTIA establishes requirements for State and local planning grants

TBD FirstNet forms Advisory Committee for Public Safety

TBD FirstNet establishes itself with resources, develops RFIs, consults with designated agent for States, completes RFPs, and releases notice

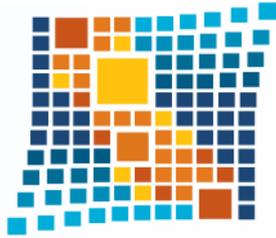
TBD States have 90 days after receipt of notice to opt in or opt out



**Anna M. Gomez, Deputy Assistant Secretary**  
**National Telecommunications and Information Administration**  
**U.S. Department of Commerce**

---

# **QUESTIONS AND COMMENTS**



California  
**TECHNOLOGY AGENCY**

# Joint Legislative Committee on Emergency Management

Informational Hearing – Emergency Interoperability:  
What’s Next for California?

Karen Wong, Director, Public Safety Communications Office  
July 2012

# Middle Class Tax Relief and Job Creation Act of 2012

- Signed by the President on February 22, 2012
- Act includes reallocation of 10 MHz portion of 700 MHz spectrum referred to as the D Block, to public safety for the establishment of a nationwide public safety broadband network
- The Federal Communications Commission (FCC), Department of Commerce, and the National Telecommunications and Information Administration (NTIA) will create an advisory body called the First Responder Network Authority (FirstNet) to manage and oversee the network

# Act Highlights to Establish a Nationwide Public Safety Broadband Network

- Reallocates the D-Block portion of radio spectrum to public safety;
- Funding for the network will be based on proceeds of future FCC auction(s) of other segments of available spectrum
- \$7 billion is designated from auction proceeds for build out of the network
- \$135 million is designated from auction proceeds for funding state planning grants
- NTIA has the ability to borrow \$2 billion prior to the auction
- If auction(s) proceeds exceed \$27.6 billion, \$115 million will be provided for Next Generation 9-1-1

# State's Responsibilities

- Each Governor has statewide responsibility for the public safety broadband network implementation including state, county, city, and tribal public safety agencies supporting all first responders
- Each State must designate a state officer or governmental body for FirstNet to coordinate state, local and tribal assets, users, partnerships, funding, technical, and administration requirements.
- Governors may choose to participate in construction of the nationwide broadband network through FirstNet or to seek a waiver to deploy their own interoperable network (opt in or opt out of the network)
- ***Current public safety voice radio communication systems must remain intact***

# State's Role – First Steps

- Notification to Public Safety Entities Regarding State's Role
- Define Stakeholders
- Develop Statewide Governance Organization
- Develop Project Team (Project Manager, Subject Matter Experts, Resources)
- Develop Communication Plan
- Develop a Roadmap
  - Development of an Education & Awareness
  - Develop an Architecture Concept/Design
  - Infrastructure Survey/Requirements
  - Define Users & Stakeholder
  - Define Costs/Liability
  - Identify Public/Private Partnership Stakeholders
  - Partnering with Bordering and Western States

# How will the Network be Funded

- Legislation Identified \$7 billion
- Leverage BayRICS/LA RICS Investments
- Potential Grants
- Public/Private Partnership
- Potential for Local/State/Tribal Commitments
- Ongoing Sustainability of Network
- Other Alternatives
- Many Unknowns

# California's Readiness in Comparison to Other States

- Currently Situated to be an Early Adopter
  - BayRICS - \$50 million BTOP Grant Project
  - LA RICS - \$150 million BTOP Grant Project
- Most Public Safety Organizations currently utilize the public networks to access data necessary to perform their day to day duties

# What We Don't Know

- FirstNet Board Governance Structure
  - Members will be appointed by the Department of Commerce/National Telecommunications Industry Authority by August 20, 2012
  - Board will establish action items and timelines
- FirstNet must develop a Request for Proposal – currently unknown what the Request for Proposal will contain and when it will be complete
- Cost of the Network
- “We Don't Know What We Don't Know”

# Challenges for California

- \$7 billion will not provide adequate funding for a nationwide public safety broadband network; therefore California will need to identify additional funding sources/alternatives
- State's current physical infrastructure (vaults/towers/fiber optic networks) is not adequate to support a public safety broadband network, especially in the rural and remote areas where minimal infrastructure exists
- Ensuring that the system meets the State's First Responder needs
- Managing Expectations
- Identification of the "Total Cost for Ownership" – what is the State's Investment?

# What We are Keeping in the Forefront as We Begin the Planning Efforts

- Importance to have a holistic (broad) view of a Public Safety Broadband Communications Network
- How can we Leverage the Next Generation of 9-1-1 Planning and Infrastructure?
- How can we Leverage efforts to support an Emergency Notification System?
- How can we Leverage Convergence of Technologies?



## **Summary of the Middle Class Tax Relief and Job Creation Act of 2012 as it relates to Public Safety Communications (House Bill H.R. 3630 Title VI)(Public Law 112-96)**

The Middle Class Tax Relief and Job Creation Act of 2012 was signed by the President on February 22, 2012. In addition to tax relief, this bill allocates a 10 MHz portion of 700 MHz spectrum referred to as the D Block, to public safety for the establishment of a nationwide public safety broadband network. The Federal Communications Commission (FCC), Department of Commerce, and the National Telecommunications and Information Administration (NTIA) will create an advisory body called the First Responder Network Authority (FirstNet).

### **Act Highlights to Establish a Nationwide Public Safety Broadband Network**

- Funding for the network will be based on proceeds of future FCC auction(s) of other segments of available spectrum.
- \$7 billion is designated from auction proceeds for build out of the network.
- \$135 million is designated from auction proceeds for funding state planning grants.
- NTIA has the ability to borrow \$2 billion prior to the auction.
- If auction(s) proceeds exceed \$27.6 billion, \$115 million will be provided for Next Generation 9-1-1.

### **States Responsibilities**

- Each Governor has statewide responsibility for the public safety broadband network implementation including state, county, city, and tribal public safety agencies and first responders.
- Each Governor must designate a state officer or government body for FirstNet to coordinate state, local, tribal assets, users, partnerships, funding, technical, and administrative requirements.
- Enables Governors to choose to participate in construction of the nationwide broadband network through FirstNet or to seek a waiver to deploy their own interoperable network (opt in or opt out of the network).
- Current public safety voice radio communication systems must remain intact.

### **Challenges for California**

- \$7 billion will not provide adequate funding for a nationwide public safety broadband network; therefore California will need to identify additional funding sources/alternatives.
- State's current physical infrastructure (vaults/towers/fiber optic networks) is not adequate to support a public safety broadband network, especially in the rural and remote areas where minimal infrastructure exists.
- Issues undefined until the FirstNet Board is established.



Dave Heineman  
Governor of Nebraska  
Chair

Jack Markell  
Governor of Delaware  
Vice Chair

Dan Crippen  
Executive Director

March 14, 2012

**M E M O R A N D U M**

*To:* Washington Representatives  
*From:* Heather Hogsett  
*Re:* Implementation of the Public Safety Broadband Network

This memorandum highlights key milestones for states as legislation to reallocate the D block of spectrum and construct a nationwide public safety broadband network is implemented. It also addresses several frequently asked questions.

**Key Dates for Network Development**

The legislation requires the establishment of two boards that will play important roles in the development of the nationwide public safety network. The first is the technical advisory board that will be established by the Federal Communications Commission (FCC) to develop technical standards to ensure interoperability across the country. The second is the board of the First Responder Network Authority (FirstNet) that will hold the license for the spectrum and is responsible for network construction, maintenance and upgrades.

Once these boards are established, FirstNet must develop and present to governors a plan to build the network in the state. Governors will then have 90 days in which to decide whether to build a separate state network or participate in the national network.

	<b><i>Deadline</i></b>	<b><i>Requirements/Background</i></b>
<b><i>FCC Board Appointments</i></b>	March 22, 2012	-FCC has solicited nominees -3 designated state and local slots available and 3 public safety -Board must develop technical requirements to ensure interoperability by 5/22/12 - Board terminates 7/7/12
<b><i>FirstNet Board Appointments</i></b>	August 22, 2012	-Appointments will be made by the Department of Commerce/NTIA - 3 designated state and local slots and 3 public safety
<b><i>State Implementation Grants</i></b>	August 22, 2012	-NTIA must develop grant guidance, including prioritization of activities to ensure coverage in rural and urban areas -total funding available will be \$135 million
<b><i>Governor Decision to Opt-Out</i></b>	90 days	-After FirstNet provides plan for construction within the state, including the state's funding level, the governor must decide whether to participate in national network deployment or to deploy a state network that would be interoperable with the national network -if opting out, the state must submit an alternative plan for construction and operation to the FCC that demonstrates compliance with technical requirements and interoperability with national network; must also apply to NTIA to lease the spectrum and for a grant to

		construct the radio access network within the state
<b><i>State Request for Proposals (if opting out)</i></b>	180 days	-If the governor chooses to opt-out of the national network, governor must complete RFP for construction, maintenance and operation of network within 180 days

## **Frequently Asked Questions**

### ***When will funding be available to states?***

The first funding available to states will be \$135 million in implementation grants from the National Telecommunications and Information Administration (NTIA). NTIA must establish requirements for the use of these funds by August 22, 2012. These grants are intended to assist states and localities in utilizing and integrating infrastructure and equipment with the nationwide broadband network to meet the needs of the jurisdiction. These grants will require a 20 percent match by the state unless waived by NTIA.

In addition to state and local implementation grants, \$7 billion will be available to construct the nationwide network. This funding will not be available until FirstNet is ready to begin construction. States choosing to build their own network rather than participate in construction of the nationwide network may apply to NTIA to receive a portion of these funds.

### ***How will the legislation impact jurisdictions with current or pending waivers?***

Prior to the passage of the legislation, 21 jurisdictions had received waivers from the FCC to begin construction on their own broadband networks. A number of other jurisdictions have waiver requests pending with the FCC. Neither the FCC nor NTIA have provided guidance to these jurisdictions regarding whether or how they should move forward. NGA continues to coordinate with these agencies and will share information as it becomes available.

### ***What should states do now?***

States should begin updating their public safety communications plans to incorporate broadband technologies and ensure that statewide interoperability governing boards include the appropriate state and local representatives. Broadband technologies are different in many ways from traditional public safety radio communications and offer new opportunities. For instance, states may be able to leverage other broadband initiatives under the purview of chief information officers (CIOs) for public safety purposes. In the coming weeks, the NGA Center for Best Practices will announce plans to provide states with technical assistance surrounding implementation of public safety broadband.

### ***How can a state nominate someone to the boards?***

The FCC will announce members of its technical advisory board in the next several weeks. NGA solicited nominees from governors' offices, whose names were submitted to the FCC.

NTIA will be responsible for coordinating appointments to the FirstNet board. When information regarding NTIA's nominations process is released, NGA will share it with governors' offices and facilitate the submission of nominees.

If you have any questions please contact Heather Hogsett ([hhogsett@nga.org](mailto:hhogsett@nga.org); 202.624.5360) or Mike Obrock ([mobrock@nga.org](mailto:mobrock@nga.org); 202.624.5390).

## NEXT GENERATION 9-1-1 IN CALIFORNIA

### Purpose:

Advances in technology present ever-growing opportunities for the State to define, adopt and implement new and more efficient services that support the people of California. Nowhere is this opportunity greater today than in the delivery of 9-1-1 emergency services where the need to transform California's legacy 9-1-1 services into the Next Generation of 9-1-1 (NG9-1-1) is both real and achievable. Today's 9-1-1 platform does not support prevalent technologies like text, video or photos nor do they offer methodologies to easily adapt and deal with call congestion or workload overflows.

### Background:

In 2010, the California 9-1-1 Emergency Communications Division (CA 9-1-1 Division) published the 9-1-1 Strategic Plan as well as the Proposed California NG9-1-1 Roadmap to guide the State in achieving the successful implementation of NG9-1-1.

### Current Projects:

The CA 9-1-1 Division has five (5) NG9-1-1 projects underway in California.

Project Name	# of Counties/#PSAPs	Type of Solution	Contractor	Current Status	Completion Date
E9-1-1 Grant Project	13 Counties 37 PSAPs	IP Network Based Connectivity – overlay to existing legacy 911 CPE using Gateways	Verizon	All IP network and NG911 Equip installed , implementation to begin mid Aug 2012	September 30, 2012
Imperial Project	1 County 4 PSAPs	Hosted	AT&T	Install completed - Waiting for customer acceptance	September 30, 2011
Ventura Project	1 County 3 PSAPs	Hosted	AT&T	PSAP Equipment ordered, IP Network ordered	Projected completion 4th Quarter 2012
RING (Pasadena) Project	1County 8 PSAPs initially	Turnkey IP Network Based Configuration	AT&T	7 of 8 PSAPS SOW approved, CPE ordered, IP Network ordered , installing Network control centers	Est. completion 2 <sup>nd</sup> Quarter 2013
Mendocino Project	1 County 3 PSAPs	TBD	TBD	PSAPs are in the process of choosing a vendor	TBD

### Key Information:

- Each of the five (5) NG9-1-1 projects list above will utilize an IP based network solution, which is the foundation upon which NG9-1-1 is built.
- An IP enabled NG9-1-1 system will allow for policy and location based routing and, in the future, multi-media (e.g. text messaging, pictures, and video) and other emerging technology capabilities.
- At the completion of the pilot projects, the CA 9-1-1 Division will review and analyze the benefits of each to determine the next steps California will take toward full implementation of NG9-1-1 in California.



## **Bay Area Wireless Enhanced Broadband (BayWEB)**

### **What is BayWEB?**

BayWEB is a regional data communications network that will allow first responders throughout the Bay Area to communicate seamlessly during a disaster and for day-to-day public safety needs. BayWEB incorporates cutting-edge 4G LTE technology to deliver data over wireless spectrum reserved for public safety broadband use. The network will enable first responders to share text, graphics, real-time video and other mobile “apps” designed specifically for public safety. The project was launched in 2007 by the mayors of San Francisco, Oakland, and San Jose, and is consistent with a key public safety priority of the 9/11 Commission Report and the Obama Administration to improve interoperable communications for first responders.

### **How is BayWEB governed?**

BayWEB is governed by a 13-member Joint Powers Authority (JPA), called the Bay Area Regional Interoperable Communications System Authority (BayRICS), which was formally established in August 2011. BayRICS oversees funding, policy, and negotiating contracts with vendors to construct BayWEB. Members of the BayRICS Authority include State of California, City and County of San Francisco, City of Oakland, City of San Jose, Counties of Alameda, Contra Costa, Marin, San Mateo, Santa Clara, Sonoma, and “hub” city groups from the East Bay and South Bay. Each member jurisdiction has appointed a representative to the BayRICS Board of Directors.

### **How is BayWEB Funded?**

In 2010, the region received a \$50.6 million federal stimulus grant called the Broadband Technology Opportunities Program (BTOP) to fund the wireless broadband portion of the project. The BTOP grant is administered by the National Telecommunications and Information Administration (NTIA), a federal agency in the Department of Commerce. The grant was awarded to Motorola, the vendor selected to partner with BayRICS to build, own, operate and maintain the network. Motorola will contribute an additional \$21 million match to the grant, and up to \$24 million more for radio site upgrades.

### **What Will Be the Benefits to the Region?**

- Interoperable – One network allows faster, coordinated response among Bay Area first responders
- Private – Network is exclusively for public safety users, not shared with commercial traffic
- Controlled – Ability to prioritize data transmissions by user, application or event
- Secure – Reliability of a hardened network dedicated to public safety use
- Low Cost – No site construction costs or minimum service commitments for BayRICS members

### **What Will Be the Project Costs to the Region?**

- Use of some leased radio sites may require an increase in monthly lease fees
- One-time permitting fees for improvements to radio sites
- BayRICS member jurisdictions are expected to contribute assets (sites, fiber and personnel).
- Monthly service fees for all users (proposed \$43 per month per user, with unlimited data usage).
- Hand-held, tablet and in-vehicle devices (data enabled) for Police, Fire, etc.

### **What is the BOOM Agreement?**

In January 2012, BayRICS approved a Build-Own-Operate-Manage (BOOM) Agreement with Motorola that describes the specific parameters and costs of the system, including:

- Project deployment schedule, system design and capabilities
- Fee structure for basic service and enhanced options
- Open standards requirements, allowing competitive procurement of end user devices
- Rules for use of 700 MHz spectrum
- Timetable for transfer of system ownership to the JPA in 10 years.

### **What are the Site Access and Use Agreements?**

Cities and counties around the Bay Area have approved Site Access and Use Agreements with the project vendor, Motorola, which will allow Motorola to access to sites and facilities in order to install communications equipment (like antennas) for the project. There will be approximately 140 project sites throughout the Bay Area.

### **What Are the Key Project Deadlines?**

- May 31, 2012: Motorola deadline to change any of the sites where BayWEB equipment will be installed.
- July 31, 2013: Federal grant deadline by which Motorola must spend all BTOP grant funds.

### **What is FirstNet?**

On February 22, 2012 President Obama signed H.R. 3630, the Middle Class Tax Relief and Job Creation Act of 2012. Title VI of this legislation, often referred to as the "Spectrum Act", established spectrum allocations, funding and governance structure for the First Responder Network Authority (FirstNet), a nationwide wireless broadband network for public safety. Public safety groups have pressed for this legislation for several years in response to the 9-11 tragedy and subsequent reports that have identified the critical need for a nationwide, interoperable broadband network for first responders.

FirstNet will become a nationwide counterpart to the BayWEB network and will eventually interconnect with BayWEB, providing interoperability on regional, state and national levels. Although many details are still being developed, FirstNet represents a great opportunity for public safety in the Bay Area and a potential source of additional funding, enhancement and expansion for BayWEB.

## **Legislative Recommendations** (Listed by issue area or agency)

### **Disaster Response**

- 1) The Legislature should consider providing funding to agencies like the State Water Control Board for the purposes of investigating spills and other incidents during a disaster.

### **Emergency Planning**

- 1) The state's water stakeholders should coordinate, in advance, resource-sharing and the use of equipment and materials during a disaster, particularly within the Delta.
- 2) A unified command structure should be implemented within in the Delta region to adequately and efficiently address emergencies.
- 3) A Delta-specific multi-hazards catastrophic plan should be created to detail evacuation and interoperability and communications procedures during an incident.
- 4) The Legislature should require agencies within the Delta to have up-to-date catastrophic emergency plans and to update those plans every three years. DWR local assistance monies could be used to further this activity.
- 5) Utilities could adopt, train in, and utilize SEMS (the Standardized Emergency Management System employed by first responders throughout California for unified command during a disaster) and NIMS (the National Incident Management System).
- 6) The Legislature could require private utility companies to work with local first responders on the development of their ERPs.

### **Environment**

- 1) The Legislature should be prepared, moving forward, to engage in a conversation about the siting of towers for cellular communications technology – especially for the use of public safety communications.
- 2) The Legislature should approve pending legislation pertaining to environmental approvals and CEQA exemptions to allow LA-RICS to move forward with several sites.

### **Federal Issues**

- 1) The Legislature should work with BayRICS and LA-RICS to lift the grant suspensions imposed by the NTIA.
- 2) The composition of the FirstNet Board is supposed to include 15 members. The Legislature should work separately, or in conjunction with others, to encourage the seating of a California representative on the FirstNet Board.

## **Funding**

- 1) Web enterprise technology and software to support PLAN will need to be developed by someone and purchased by all counties and local governments. It is unclear who will be responsible for development, but funding will be needed for local governments to purchase access to this system.
- 2) The Legislature could encourage DWR to accelerate funds for maintenance and repair of the State Water Project. This will require no General Fund money as it has already been provided and earmarked via bond measures.
- 3) The Legislature should continue the Levee Subvention Program as a discretionary program, not a mandatory program.

## **Governmental Organization**

- 1) A multi-agency task force should be established within the Delta region to further examine emergency management issues.
- 2) The Legislature could create a five Delta county emergency response authority with fee assessment capabilities.
- 3) A statewide governance organization is needed to implement the recommendations and protocols handed down by the FirstNet Board. Project teams will be required and that they will need to develop the following:
  - a. Communications Plan
  - b. Road Map
  - c. Public Awareness Campaign for First Responders
  - d. Architecture Concept & Design for Infrastructure
    - i. Ownership will need to be discussed
    - ii. The possibility of partnerships will also need to be discussed
  - e. Funding
    - i. California is currently slated to receive approximately \$7 billion for our share of this new interoperability infrastructure. This will not cover our costs and the state will need to look for grants and partnerships. Additionally, we will need to find funding to sustain the system once it is built.

## **Infrastructure**

- 1) The Legislature should encourage the building of setback levees and flood plains protection within the Delta.

## **Public Education**

- 1) The state should be seeking to leverage private companies and social media outlets as avenues to educate the public about PLAN.
- 2) The state should look into using homeland security grant funding to better educate coastal area residents about tsunami warning signs and tsunami warning protocols.

### **Public Education (continued)**

- 3) Anyone purchasing a phone beginning during the 2011 holiday season and beyond will receive the ability to opt-in or opt-out of alerts issued via PLAN. Because of this, a public awareness campaign is vital to maximizing participation.
- 4) Ongoing communication is needed on the part of governments (both state and local) with Californians in regards to messaging during a disaster. With the increased use of cellular technology, there will never be enough network capacity to handle everyone calling a loved one during a disaster.
- 5) The public should be reminded to have corded phones, where possible, that will allow for use of 9-1-1 and Reverse 9-1-1 technologies during incidents.
- 6) Californians should be encouraged to make use of battery radios during emergencies.
- 7) The public should be encouraged to have cash on hand for possible emergencies.
- 8) The Legislature should lead that effort to inform and educate stakeholders about FirstNet to ensure that all possible interests are taken into account.

### **Risk Assessment**

- 1) The state could study the gaps, strengths, and weaknesses within the state's emergency alert system to further educate our policy-making process moving forward.
- 2) As a state, we will need to undergo a needs assessment to ascertain our own requirements for public safety and then determine additional requirements that will be needed to support FirstNet

### **Telecommunications**

- 1) Updates to the code will be needed to facilitate the Next Generation 9-1-1 system.
- 2) To alleviate the possibility of "unofficial" emergency messages being delivered to the public, the state should explore the possibility of creating a dedicated channel on television for emergencies.
- 3) Conversations and/or legislation may be needed in regard to liability protection for cellular companies employing PLAN. Most are hoping for the same liability protection that exists under current 9-1-1 rules.

### **California Public Utilities Commission**

- 1) The CPUC's General Order 166 defines a major outage as one affecting greater than 10% of a utility's customers. It is possible that this rule and these protocols should be reviewed and updated to allow for additional flexibility by utilities when managing windstorm-related events.
- 2) The CPUC should consider applying GO 166 to regional events, as well.
- 3) The CPUC should ensure that all utilities are aware of rules pertaining to evidence retention during, and in the wake of, disasters.

### **California Public Utilities Commission (continued)**

- 4) The CPUC should conduct a more robust review of the ERPs submitted by utilities.
- 5) The CPUC should consider hiring or appointing a safety advocate dedicated solely to planning for and managing events affecting utilities.
- 6) The CPUC could consider strengthening vegetation management requirements by the utilities.
- 7) The Legislature could encourage the California Public Utilities Commission to ask the owners of energy infrastructure crossing the Delta to pay their fair share of maintenance and upgrades.

### **California Technology Agency**

- 1) CTA should engage seniors groups, like the Congress of California Seniors, in an effort to meet their needs in a public information campaign about Next Generation 9-1-1.
- 2) CTA should reach out to the Riverside County Sheriff's Office to ascertain the status of any upgrades they are undertaking to their system in an effort to ensure compatibility with FirstNet

### **County of San Diego**

- 1) The County should install back-up battery power for traffic signals.
- 2) The County should consider planning to establish centers within affected communities to care for populations needing oxygen in the future to avoid overcrowding emergency rooms.

### **City of San Diego**

- 1) The City should timeframe and capabilities of agencies to report spills and other incidents during emergencies.
- 2) The City should invest in emergency back-up generation capabilities for all of their water plants and facilities.

### **Los Angeles Department of Water and Power**

- 1) LADWP should have their field crews use company radios in an effort to avoid overloading the company's call centers.
- 2) LADWP could consider revamping internal protocols dictating when to activate the utility's command center during an event.

### **San Diego Gas & Electric**

- 1) SDGE&E should initiate an effort to collect cell phone numbers for their customers.
- 2) The utility should remind their large customers to test their generators periodically.

## **Southern California Edison**

- 1) SCE should, in times of crisis, provide more general, but more accurate information to the public in an attempt to keep information up-to-date.
- 2) SCE should explore a new call management system to avoid first responders and local governments using the same system as the public.
- 3) SCE needs to develop protocols by which to reach out to all medical accounts for up-to-date information about their populations served.
- 4) SCE needs to coordinate with local agencies in regards to improved response.
- 5) SCE needs to institute staffing guidelines and parameters for participation in city and county command centers and shelters.
- 6) SCE should strongly consider documenting new or revamped emergency plans and sharing those plans with local first responders.

**Joint Legislative Committee on Emergency Management  
(formerly the Joint Legislative Committee on  
Emergency Services and Homeland Security)  
Accomplishments 2004-2012**

**Hearings**

- 1) 10/5/04 – 2003 Historic Southern California Fires: An Assessment One Year Later
- 2) 10/24/05 – Is California Prepared for the Big One: Earthquake, Tsunami, Wildfire, Flood, an Act of Terrorism?
- 3) 11/29/05 – How Do We Prevent the Next Firestorm?
- 4) 12/5/05 – How Counterterrorism has Evolved in California since 9/11; Are We Better Prepared to Prevent, Respond to and Recover from an Attack?
- 5) 3/17/06 – Is California Prepared for a Bird Flu Pandemic
- 6) 8/11/06 – Securing California’s Maritime Transportation System: Seamless Operational Security (Joint hearing with the Assembly Select Committee on Ports)
- 7) 7/18/07 – California Fire Season and Emergency Preparedness and Response Report
- 8) 8/21/07 – Federal Homeland Security and Emergency Preparedness and Response Grant Programs: How Will Funds be Distributed and Used by State and Local Governments
- 9) 12/12/07 – The 2007 Southern California Wildfires: Assessing Preparedness, Response and Recovery Efforts in San Diego County
- 10) 12/13/07 – The 2007 Southern California Wildfires: Assessing Preparedness, Response and Recovery Efforts in Los Angeles, San Bernardino and Orange Counties
- 11) 8/27/09 – Evaluating the Impact of H1N1 Pandemic on California’s Public Health and Education Systems: Are We Ready for the Flu Season (Joint hearing with the Senate Health Committee and the Senate Select Committee on Disaster and Emergency Response)
- 12) 9/23/09 – Evaluating the Cost and Effectiveness of California’s Year Round Firefighting Capability
- 13) 3/24/10 – A Review of the Draft 2010 Strategic Fire Plan for California
- 14) 11/30/10 – As Local Tax Dollars Disappear, Can the End of Mutual Aid Agreements Be Far Behind?
- 15) 08/12/11 - Emergency Communications: Who’re You Going to Call?
- 16) 10/20/11 - Water Reliability and Seismic Risk (Joint hearing with the Assembly Select Committee on Regional Approaches to Addressing the State’s Water Crisis)
- 17) 10/26/11 - Addressing Grid Vulnerabilities: September 8, 2011 Southwest Power Outage (Joint hearing with the Assembly Committee on Utilities and Commerce)
- 18) 02/03/12 - Investigation of December 2011 Southern California Windstorm Outage (Joint hearing with the Assembly Committee on Utilities and Commerce)
- 19) 08/06/12 - Emergency Interoperability: What’s Next for California?

## Activities

- The Committee has been the legislative point of contact for OES (the Governor's Office of Emergency Services, formerly CalEMA, formerly the Governor's Offices of Emergency Services and Homeland Security), CalFIRE, the Emergency Medical Services Authority, the Department of Public Health and others, and as such, has taken the lead on keeping legislators up to date on emergency preparedness and response issues.
- Received daily situations reports from CalEMA and participate in periodic updates by CalEMA and federal emergency agencies in response to both natural and man-made disasters.
- Worked with former Governor Schwarzenegger's office regarding his proposed Emergency Response Initiative.
- Worked with CalEMA to create the Office for Access and Functional Needs within the agency. Also worked to ensure that people with functional needs have representation on appropriate emergency planning committees. Attended a statewide meeting on functional needs within the emergency management system.
- Participated in numerous conference calls with CalEMA and federal emergency agency partners related to pandemic flu, fire damage, winter storms, the San Bruno explosion, and earthquake, and tsunami updates.
- Provided oversight to an independent third party contractor that was hired under the direction of former Senate pro Tem Don Perata, to prepare a report on gaps in California's emergency services and response needs. The report was never released by former Governor Schwarzenegger.
- Met with several foreign delegations interested in learning about California's emergency preparedness.
- Researched problems concerning defensible space issues and independent third party contractors with local fire departments based on complaints from California citizens.
- Participated in meetings and calls regarding the Draft 2010 Strategic Fire Plan for California.
- Coordinated information flow between the Legislature and CalEMA to facilitate disaster declarations for the state's many emergencies and disasters.
- As a result of information presented at the November 30, 2010 hearing noted above, Senator Kehoe presented a request to the Joint Legislative Audit Committee for an audit of the California Mutual Aid System. That request was approved by the Committee on February 16, 2011. California's mutual aid system is a model for the country, but is being threatened by a number of stressors. Without a robust mutual aid system, public safety could be at risk. The purpose of the audit is to conduct a performance review of the current mutual aid system, identify concerns and provide recommendations on how it can be improved, so the Legislature and other stakeholders can take appropriate action.

### **Educational Opportunities and Demonstration Participation**

- Attended a CalFIRE field trip to learn about how homeowners are implementing defensible space requirements as models for other communities.
- Attended a briefing by CalEMA on the Homeland Security Grant Program for 2010.
- Attended a number of interoperability and other disaster-related product and equipment demonstrations.
- Participated as an observer in a number of emergency preparedness drills in Sacramento and southern California.
- Attended multiple legislative tours of CalEMA.
- Attended multiple legislative tours of CalFIRE's aerial fleet.
- Attended a legislative tour of CalFIRE's Training Academy in Ione, CA.

### **Committee-Generated Legislation**

- 1) AB 823 (Nava) Chapter 233, Statutes of 2005: Enacts a modified version of the Emergency Management Assistance Compact (EMAC) that has been adopted by other states and ratified by Congress, until January 1, 2008.
- 2) AB 1889 (Nava) Chapter 502, Statutes of 2006: Requires the membership of the California Emergency Council to include a representative of a local public health agency, to be appointed by the Governor. Requires the council to have two advisory committees with specified memberships and duties, and includes the encouragement of certain community, business, and school preparedness efforts and the publication of a biennial report on emergency preparedness, among the council's duties.
- 3) AB 2041 (Nava) Chapter 855, Statutes of 2006: Modifies the membership of the Public Safety Radio Strategic Planning Committee (PSRSPC) to ensure that the appropriate partner organizations are involved in shaping the state's policies to achieve communications interoperability and requires PSRSPC to coordinate with the California State Interoperability Executive Committee (CALSIEC) and first response agencies at various levels of government.
- 4) AB 2852 (Nava, 2006): Created the California Tsunami Steering Committee to guide the state in preparing a tsunami mitigation plan. (Died on the Assembly Appropriations Committee Suspense File.)
- 5) SB 1451 (Kehoe) Chapter 600, Statutes of 2006: Required the Office of Emergency Services to ensure that members of the disability community are represented on all pertinent emergency preparedness committees.

- 6) AB 287 (Nava, 2007): Provided certain agricultural employers affected by the January 2007 freeze with a credit equal to 40% of wages paid to employees through January 1, 2009. (Died on the Assembly Appropriations Committee Suspense File.)
- 7) AB 319 (Nava, 2007): Would create the “California Tsunami Hazard Preparedness and Mitigation Steering Committee” to guide tsunami hazard preparation activities and require the Office of Emergency Services to establish a statewide tsunami hazard preparedness and mitigation program to assist local governments in preparing for, responding to, and mitigating the effects of tsunamis. (Vetoed by the Governor.)
- 8) AB 1564 (Nava) Chapter 414, Statutes of 2007: Extends from January 1, 2008, to January 1, 2013, the operation of the Emergency Management Assistance Compact. In addition, the bill prohibits the state from giving or receiving assistance for any condition resulting from a labor controversy.
- 9) AJR 6 (Nava, 2007): Memorializes the President of the United States to expeditiously declare as a federal natural disaster area the portions of this state affected by severe freezing conditions and consequent frost damage that occurred in January 2007 to allow critical relief to this state's small-business owners, farmers, and workers.
- 10) SB 426 (Kehoe, 2007): Would require the Director of the Governor’s Office of Emergency Services (OES) to create the position of Deputy Director of Access and Functional Needs Coordination. (Died in Senate Appropriations, but the issue was successful by working with the Governor’s office and OES.)
- 11) SB 1595 (Kehoe) Chapter 366, Statutes of 2008: Updated defensible space laws and recast them in terms of fuels management instead of vegetation management.
- 12) AB 38 (Nava) – Chapter 372, Statutes of 2008: Created CalEMA as an independent agency, reporting directly to the Governor, and vested with the duties, powers, purposes and responsibilities, and jurisdictions previously held within the Office of Homeland Security and the Governor’s Office of Emergency Services.
- 13) AB 2796 (Nava) Chapter 363, Statutes of 2008: Authorizes the Office of Emergency Services to establish a statewide registry of private businesses and nonprofit organizations that are interested in making donations, at no cost to the state, to prepare the state for emergencies and disasters, and imposes certain duties on these entities in this regard.
- 14) SB 1617 (Kehoe, 2008): Would require the State Board of Forestry and Fire Protection to establish an annual fire prevention fee of \$50 to be collected for all occupied structures in SRAs beginning with the 2010-11 fiscal year to be used for fire prevention activities. (Died on the Assembly Floor.)
- 15) AB 1214 (Nava) Chapter 517, Statutes of 2009: Requires any privately owned or operated resources hired by an insurer to protect structures threatened by fire or to perform firefighting duties to report to and follow the direction of the Incident Commander as that term is used in California’s Standardized Emergency Management System (SEMS).

- 16 & 17) SCA 21 (Kehoe, 2008) and SCA 12 (Kehoe, 2009): Would allow local governments to fund certain emergency and public safety infrastructure, services, equipment, interoperable communications equipment, etc. with the approval of 55% of its voters. (SCA 21 died in Senate Revenue and Taxation and SCA 12 died on the Senate Floor.)
- 18 & 19) SB 505 (Kehoe, 2009) and SB 1207 (Kehoe, 2010): Would require local governments that have State Responsibility Areas and very high fire hazard severity zones in their jurisdictions, to include in the safety elements of their general plans key information about planning for fire hazards. (Both were vetoed by the Governor.)
- 19 & 21) SBX8 40 (Kehoe, 2010) and SB 1258 (Kehoe, 2010): Governor's Emergency Response Initiative: Would impose a 4.8% emergency response surcharge on all new or renewed commercial and residential fire or multi-peril insurance premiums issued or renewed on or after July 1, 2010 in California. (SBX8 40 died on Senate Floor and SB 1258 died in Senate Appropriations.)
- 22) ACR 38 (Lowenthal), Chapter 31, Statutes of 2011: Reconstituted the Joint Committee on Emergency Management in perpetuity, until it is eliminated by the Legislature. Also required the Joint Committee to report biennially to the Governor and the Legislature the Joint Committee's progress and recommendations on the status of the services and policies necessary to address public safety and essential emergency management services and policies.
- 23) AB 946 (Lowenthal), Chapter 400, Statutes of 2011: Allowed the County of Los Angeles or the Los Angeles Regional Interoperable Communications System (LA-RICS) the option to use a solicitation process to award a contract for design, construction, and delivery or a regionally interoperable communications system and all related infrastructure. This authority will help decrease the overall project risk, time required for implementation, and overall costs.