

**SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**



FROM: Supervisor John J. Benoit &
Supervisor Marion Ashley

SUBMITTAL DATE: May 3, 2011

SUBJECT: Resolution 2011-121 in Support of the Coachella Valley Regional Earthquake Warning

RECOMMENDED MOTION: That the Board of Supervisors adopt a resolution in support of the Coachella Valley Regional Earthquake Warning System (CREWS) and request recognition, support and financial assistance from state and federal legislators for this regional model.

BACKGROUND:

Executive Summary

According to the USGS, there have been more than 68 major earthquakes worldwide since the beginning 2010, including a recent and particularly devastating earthquake in Japan. The 7.1-magnitude earthquake in neighboring Mexicali one year ago, in particular, was wake-up call for our community. Felt widely throughout the region, this event served as a reminder of our continued need to be prepared and to aggressively pursue active mitigation opportunities.

CREWS is a proven, cost-effective, earthquake warning (EQW) system and will be the first user-driven earthquake early warning network in the United States. Once the system is established, CREWS operation and maintenance will be self-sustaining with user-paid subscription fees. With a proposed capital budget of \$3 million, CREWS demonstrates that a public-private partnership's approach to regional preparedness and mitigation needs can be cost effective and implemented quicker than other potential programs of this nature.

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John J. Benoit
Supervisor, Fourth District

Handwritten signature of Marion Ashley in black ink, written over a horizontal line.

Marion Ashley
Supervisor, Fifth District

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BACKGROUND CONTINUED:

Initial Steps

Twelve Seismic Detection Devices have been installed throughout the Coachella Valley since 2001. The City of Palm Springs was the first to install Seismic Detection Devices in its fire stations. Due to the Seismic Detection Devices mitigation capabilities and our cities' desire to be "Disaster Resilient, the cities of: La Quinta, Rancho Mirage, Indio, and Desert Hot Springs followed suit and installed Seismic Detection Devices in their fire stations. These Seismic Detection Device installations form the core of CREWS.

Proposal

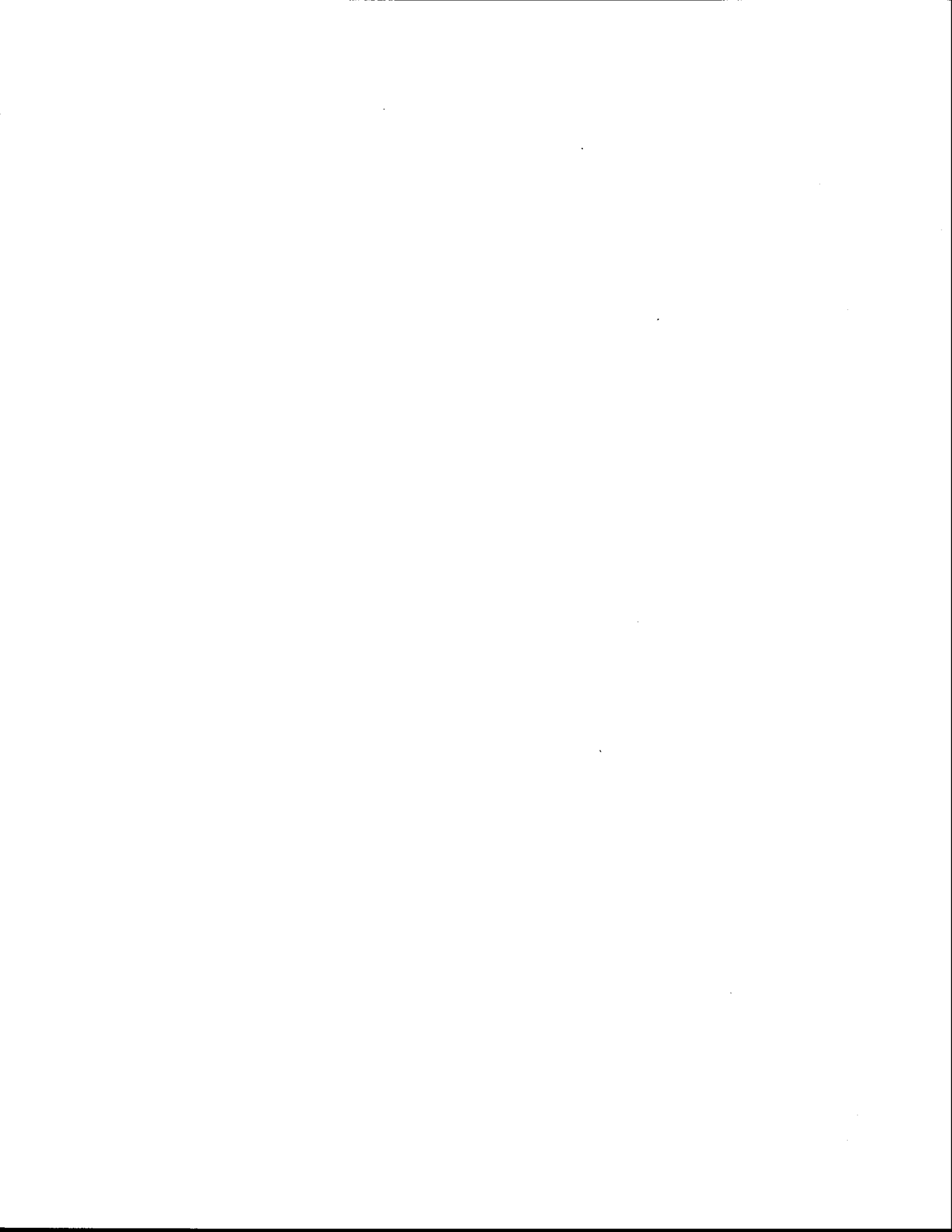
The CREWS project is exploring opportunities to fund the expansion of the local EQW systems to our local school districts to provide a regional networked EQW system to thousands of students, faculty and staff, public safety personnel and eventually to those who want it. CREWS will not only reduce damage and loss of life, but will reduce the fire following earthquake threat as well. The CREWS project will also develop EQW response procedures and education efforts to optimize safety. Upon completion, the project will provide the most robust and comprehensive private regional EQW system and model in the nation.

This is a "shovel ready" project with completion capable within 18 to 24 months of full funding. CREWS represents an organized response to a regional threat and could eventually connect to a federal/state early warning system. The system will accelerate the adoption and deployment of EQW and provide essential protection. Our public/private partnership is ready to take this project to the next level. This project will help demonstrate, in a quick and cost-effective manner, the capability of a regional automated EQW system in reducing the impact of earthquakes to critical infrastructure in urban centers at a distance from the earthquake epicenter.

Future

The Coachella Valley Association of Government (CVAG) is the lead agency tasked with identifying funding and implementing CREWS. CVAG is currently talking with other agencies, including Riverside, Imperial and San Bernardino Counties, about the possibility of developing similar projects and linking them. The goal of this coordination is to more easily identify funding and help spread early earthquake warning across the state.

FISCAL IMPACT: There is no fiscal impact associated with the adoption of this resolution.



RESOLUTION NO. 2011-121

A RESOLUTION ENDORSING THE COACHELLA VALLEY REGIONAL EARTHQUAKE WARNING SYSTEM (CREWS) AND REQUEST RECOGNITION, SUPPORT AND FINANCIAL ASSISTANCE FROM STATE AND FEDERAL LEGISLATORS FOR THIS REGIONAL MODEL.

WHEREAS, in at least three countries [Japan (2007), Mexico (1991), and Taiwan (2001)] disaster preparedness includes operational early warning earthquake systems, which can provide several tenths of seconds to a few seconds of warning of a large magnitude earthquake, both to mitigate injury and to aid disaster response and recovery efforts; and

WHEREAS, standalone early earthquake warning units in the Coachella Valley, QuakeGuards have the ability to provide 0-60 seconds warning time depending on the location of the unit from the hypocenter; and

WHEREAS, CVAG and the Coachella Valley Emergency Managers Association CREWS proposal will expand the early earthquake core units in the Coachella Valley from 12 to 52 and network them into a system that can afford double the warning time; and

WHEREAS, Geologic studies show that over the past 1,400 to 1,500 years large earthquakes have occurred at about 150-year intervals on the southern San Andreas Fault. As the last large earthquake on the southern San Andreas occurred in 1857, that section of the fault is considered a likely location for an earthquake within the next few decades. (United States Geological Survey-<http://pubs.usgs.gov/gip/earthq3/when.html>)

WHEREAS, because the southern section of the San Andreas Fault spans throughout the Coachella Valley, a thorough emergency preparedness plan must include earthquake response and awareness, and local municipalities must strive to mitigate the devastating effects of earthquakes; and

WHEREAS, in 2001, the City of Palm Springs began deploying early earthquake warning units, QuakeGuards, in local fire stations. These units provide an audio warning before the earthquake is felt that says "a seismic motion has been detected". Simultaneously, the QuakeGuard units open fire station apparatus room doors and turn on station lights, allowing staff to take cover and shut down critical equipment; and



1 **WHEREAS**, on December 7, 2009, the Coachella Valley Association of Governments'
2 Executive Committee approved CVAG's participation to co-lead the creation and
3 implementation of the Coachella Valley Regional Earthquake Early Warning System
4 (CREWS) with the Coachella Valley Emergency Managers Association (CVEMA) and local
legislators; and

5 **WHEREAS**, CREWS will be critical to the safety of first responders, approximately 69,000
6 students and faculty of the local school districts, healthcare facilities; those people at critical
7 infrastructure sites, an estimated 100,000 seasonal residents and visitors, as well as the entire
8 population of 477,948 permanent residents (Riverside County 2009 Progress Report), such
9 that CREWS participating partners and affiliates will receive an advanced alert of an
earthquake, thereby enabling them to take mitigating actions, potentially reducing the number
and severity of injuries; and

10 **WHEREAS**, the implementation of CREWS will require a collaboration between the Coachella
11 Valley Association of Governments (CVAG), Coachella Valley Emergency Managers
12 Association (CVEMA), the local school districts and both the academic and private sector
13 (Seismic Warning Systems, Inc.). Therefore, the CVEMA formed an Earthquake Early
Warning Subcommittee to establish an Action Plan to develop the project; and

14 **WHEREAS**, the CREWS Project will: 1) seek funding for the expansion of the Coachella
15 Valley Regional Earthquake Warning System to provide early earthquake warnings, 2) be
16 responsible for the development of earthquake warning response procedures, 3) develop and
17 implement sustainable and periodic education and training programs for each school district
18 partner, and 4) focus on regional needs, hazards, and priorities, and include collaboration with
other regions; and

19 **WHEREAS**, CVAG's role will be to: 1) research and administer grant applications and other
20 revenue streams for funding of this project; 2) work with jurisdictions to secure strategic sites
21 for system locations; 3) work with the CREWS partners to facilitate, implement, expedite, and
expand the CREWS networking capability thus doubling the warning time; and, 4) work to
expand the early earthquake warning system through regional partnerships; and

22 **WHEREAS**, it has been determined by the CVEMA that the CREWS project will need
23 approximately \$3 million to expand the current 12 sites to include early earthquake warning
24 devices along the Southern San Andreas Fault and the San Jacinto fault zone and to provide
25 education and training; and



1 **WHEREAS**, the budget will include the CREWS Self-Funding Cooperative model in which
2 those interested in receiving early earthquake warnings (CREWS Affiliates) would subscribe
3 to the Network Earthquake Warning Service (NEWS). Subscription fees (approximately \$100
4 per site per month) for NEWS will pay for system operation, maintenance, upgrades, and on-
5 going training and education efforts and relieve the school districts of significant long term
6 cost. This model for long-term support of the system ensures that CREWS will continue to be
available as long as needed, thus, creating a sustainable funding model for on-going
operations, maintenance, and education; and

7 **WHEREAS**, The County of Riverside requests that local State and Federal Representatives:
8 1) endorse and recognize the importance of CREWS, 2) facilitate, in coordination with CVAG
9 and the CREWS partners, any legislation, to support and assist with the development of
10 CREWS and 3) assist with and identification of funding streams to facilitate the
11 implementation of this project which will monitor the southern section of the San Andreas
Fault, mitigate the loss of life, prevent injuries, and protect first responders, from a major
earthquake in Southern California; and

12 **WHEREAS** The County of Riverside requests that local State and Federal legislators
13 recognize the importance of CREWS in providing a collective and regional disaster
14 preparedness response to earthquakes, and assist CVAG using legislative means and efforts
as available to fund such disaster preparedness is necessary to the safety of the population.

15 **NOW, THEREFORE, BE IT RESOLVED**, that by adoption of this resolution, the Board of
16 Supervisors of the County of Riverside hereby declares the public safety need for the CREWS
17 program to assist with the protection of life and property from a large magnitude earthquake in
18 the Coachella Valley and call upon local state and federal legislators to endorse and support
the regional program through financial and/or legislative support.

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