Emergency Alert Broadcast In the Digital Era

SBE – ENNES workshop

By
Efraim Petel
Alerting Systems Solutions, Inc.
February 23, 32012

Network-Centric Emergency Mass Notification Systems
IPAWS Architecture

**Alerting Authorities**
- Local
- State
- Territorial
- Tribal
- Federal

**Alerting Disseminators**
- **Emergency Alert System**
- **Commercial Mobile Alert Service (CMAS)**
- **Internet Services**
- **NOAA HazCollect**
- **State / Local Unique Alerting Systems**
- **Future Technologies**

**American People**
- AM FM Satellite Radio; Digital, Analog, Cable, and Satellite TV
- Commercial Mobile Networks
- Web browsers, Widgets, Web sites, Social media
- FM RBDS
- ETN
- Siren
- Digital Signage
IPAWS Update

- System is in operation
- Connected Organizations
  - 148 COGs*, 93 with public alerting authority

*Collaborative Operating Group
# IPAWS System Authorities

<table>
<thead>
<tr>
<th>STATE</th>
<th>ALERTING AUTHORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK</td>
<td>Kenai Peninsula Borough Office of Emergency Management</td>
</tr>
<tr>
<td>AK</td>
<td>State of Alaska Division of Homeland Security and Emergency Management</td>
</tr>
<tr>
<td>AL</td>
<td>Mobile County Emergency Management Agency</td>
</tr>
<tr>
<td>AR</td>
<td>Arkansas Department of Emergency Management</td>
</tr>
<tr>
<td>AR</td>
<td>Benton County Office of Emergency Communications</td>
</tr>
<tr>
<td>AZ</td>
<td>Arizona Division of Emergency Management (ADEM)</td>
</tr>
<tr>
<td>AZ</td>
<td>Maricopa County Department of Emergency Management</td>
</tr>
<tr>
<td>CA</td>
<td>City of Moreno Valley Emergency Operations Center</td>
</tr>
<tr>
<td>CA</td>
<td>Contra Costa County Office of the Sheriff</td>
</tr>
<tr>
<td>CA</td>
<td>County of Tulare</td>
</tr>
</tbody>
</table>

IPAWS Update

- System is in operation
- Connected Organizations
  - 148 COGs*, 93 with public alerting authority
  - 55 cell carriers online, 11 in process

*Collaborative Operating Group
Provider-specific Wireless Emergency Alert Information

Not all phone are capable of CMASD reception
Below example of AT&T list:

Mobile devices with specific Commercial Mobile Alert System (CMAS) capability can receive Wireless Emergency Alerts. As of 4Q 2012, the following AT&T devices are CMAS capable:

- Samsung Galaxy SII (SGH-i777)
- Samsung Captivate Glide (SGH-i927)
- Motorola Atrix 2 (mb865)
- Samsung Galaxy Appeal (SGH-i827)
- AT&T Fusion 2 (Huawei U8665)
- Alcatel 510A
- BlackBerry 9360, 9810, 9860, 9900
- Alcatel 871A

More CMAS devices will follow throughout 2012. AT&T is working to certify and deploy CMAS service to as many devices as possible, as quickly as possible. We are committed to working with device vendors to support this important alert messaging service.

http://www.ctia.org/consumer_info/safety/index.cfm/AID/12082
System is in operation

Connected Organizations

- 148 COGs*, 93 with public alerting authority
- 55 cell carriers online, 11 in process
- 14 EAS/Public Feed consumers, 2 in process

*Collaborative Operating Group
Some Statistics
IPAWS USAGE
as of January 2013

Messages in

All COGs (566)

Messages out

EAS (81)
CMAS (20)
NWEM (0)
Public Feed (0)

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IPAWS USAGE
as of January 2013
Including NWS

Messages in

- NWS (234,612)
- All COGs (566)
- IPAWS (256)

Messages out

- CMAS (2,694)
- EAS (330)
- NWEM (0)
- Public Feed (0)
IPAWS USAGE
as of January 2013
Including NWS

EAS Messages

CMAS

- Weather (2,667)
- CAE (17)
- RMT (7)
- SPW (1)
- EVI (1)
- CEM (1)

- RWT (322)
- RMT (7)
- DMO (1)

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Contra Costa County Community Warning System

Alerting during the Chevron incident
August 6, 2012
Emergency Alert

Outdoor Sirens

Emergency Alert System: Radio, TV and Cable

Internet Alert Display Portal
RSS, Atom

California Emergency Digital Information System

Social Media: Twitter, Facebook

National Weather Service Radio

Telephone Emergency Notification System

Refinery Activation
Push Button and Terminal

Agencies and Staff Alerts

CCC Community Warning System

Telephone Alert

CWS Terminals

Staff Text Messages

Computer pop-up

Copyright © 2013. AtHoc, Inc. All rights reserved.
**Event:** Health: Hazardous Material Release

**Response Type:** Shelter

**Levels:** Immediate - Extreme - Observed

**Intended Audience:** Richmond, North Richmond and San Pablo

**Code:** SAME = CEM

**Effective:** 18:36 PDT on 2012-08-06

**Expires:** 23:25 PDT on 2012-08-06

**From:** Contra Costa Health Services

**Headline:** Shelter In Place

**Description:** This is a message from Contra Costa health services. There is an emergency at Chevron refinery.

**Instructions:** Residents in Richmond, North Richmond and San Pablo, are advised to shelter in place, go inside, close all windows and doors, turn off all heaters, air conditioners and fans. If not using the fireplace, close fireplace dampers and vents, and cover cracks around doors and windows with tape or damped towels. Media News networks will continue to carry updated emergency information. Stay off the telephone unless you have a life threatening emergency.

**Parameter:** facilityname = Chevron, Richmond

**Parameter:** PPM = 1

**Parameter:** KCBS = 1

**Parameter:** FAS = 1

**Parameter:** BAMBOX = 1

**Parameter:** EDIS = 1

**Parameter:** HAZCOLLECT = 1
Emergency Alert
Outdoor Sirens
Internet Alert Display Portal
RSS, Atom
Emergency Alert System: Radio, TV and Cable
National Weather Service Radio
California Emergency Digital Information System
Social Media: Twitter, Facebook
Telephone Emergency Notification System
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CWS Terminals
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Areas for Immediate Alert (Zone Zero)
Siren Sounding

Play

Play from YouTube
Contra Costa Community Warning System

California CLERS
CA Law Enforcement Emergency Radio System
VHF and UHF channels

IPAWS
Integrated Public Alert and Warning System

SF Bay Area EAS Participants

NWR

EAS Routes

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Alert Message
Voice transmitted by CWS
Text to Speech

EAS
Emergency Alert System
Alert message transmitted by KCBS
1st Alert message by NOAA

This is a clip of the civil emergency message broadcast on NOAA Weather Radio, station KEC49 (Monterey, California / 162.550MHz) for the Chevron refinery fire in Richmond, California on August 6, 2012 at approximately 6:36 pm.

000 WOUS46 KMTR 070136 CEMMTR CAC013-070236-BULLETIN - EAS ACTIVATION REQUESTED CIVIL EMERGENCY MESSAGE CA CONTRA COSTA COUNTY CWS MARTINEZ CA RELAYED BY NATIONAL WEATHER SERVICE SAN FRANCISCO CA 636 PM PDT MON AUG 06 2012

SHELTER IN PLACE

THE FOLLOWING MESSAGE IS TRANSMITTED AT THE REQUEST OF THE CAPCONPUBLICGW.

THIS IS A MESSAGE FROM CONTRA COSTA HEALTH SERVICES. THERE IS AN EMERGENCY AT CHEVRON REFINERY.

RESIDENTS IN RICHMOND, NORTH RICHMOND AND SAN PABLO ARE ADVISED TO SHELTER IN PLACE. GO INSIDE. CLOSE ALL WINDOWS AND DOORS. TURN OFF ALL HEATERS. AIR CONDITIONERS AND FANS. IF NOT USING THE FIREPLACE. CLOSE FIREPLACE DAMPERS AND VENTS. AND COVER CRACKS AROUND DOORS AND WINDOWS WITH TAPE OR DAMPED TOWELS.

MEDIA NEWS NETWORKS WILL CONTINUE TO CARRY UPDATED EMERGENCY INFORMATION.

STAY OFF THE TELEPHONE UNLESS YOU HAVE A LIFE THREATENING EMERGENCY.

$ 3308219GW/IPAWSOPEN_200002

This is a clip of the shelter-in-place warning broadcast on NOAA Weather Radio, station KECC49 (Monterey, California / 162.550MHz) for the Chevron refinery fire in Richmond, California on August 6, 2012 at 9:29 pm.

This is a message from Contra Costa Health Services. There is an emergency at the Chevron Refinery.

Residents in Richmond, North Richmond and San Pablo are advised to shelter in place. Go inside. Close all windows and doors. Turn off all heaters, air conditioners and fans. If not using the fireplace, close fireplace dampers and vents. And cover cracks around doors and windows with tape or dampened towels. Media news networks will continue to carry updated emergency information.

Stay off the telephone unless you have a life threatening emergency.

People that are having skin...nose or throat irritation or are having trouble breathing as a result of this incident may go inside and shut their windows and doors to minimize any exposure. To get up to date information on the incident...please stay tuned into a television or radio station. Contra Costa Health Services works closely with KCBS 740 AM to get information to the public.
ALL CLEAR IN RICHMOND. NORTH RICHMOND. AND SAN PABLO

THE FOLLOWING MESSAGE IS TRANSMITTED AT THE REQUEST OF THE

CWSDO.CCCOES@WEBFORM@ALERTINGSOLUTIONS.COM.

[note: voice actually reads "THE FOLLOWING MESSAGE IS TRANSMITTED AT THE REQUEST OF THE CONTRA COSTA COUNTY HEALTH SERVICES."]

AN ALL CLEAR HAS BEEN ISSUED FOR THE HAZARDOUS MATERIALS ACCIDENT IN RICHMOND. NORTH RICHMOND AND RODEO.

THE EMERGENCY SITUATION HAS ENDED. PLEASE FEEL FREE TO RESUME NORMAL ACTIVITIES. PLEASE OPEN DOORS AND WINDOWS TO AIR OUT BUILDINGS AND HOMES.

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CCC Community Warning System
Agencies and Staff Alerts
Refinery Activation
Push Button and Terminal

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TENS
Alerted Areas
Shelter In Place. For more information go to: http://www.cococws.us/

**David Zucker** Any more info? cococws.us is failing to load.
3 hours ago

**Darryl Holcombe** KTVU just posted story
3 hours ago via mobile


Huge flames shoot from Chevron refinery In Richmond California
www.examiner.com
We are sheltering in place, as ordered in the Civil Emergency Message just issue...
See More

3 hours ago

**CoCoCWS** David, try cococws.us again. But it is Flash based so if you're on Safari, you won't see the map. Sorry! It's on our to do list to change it to html so it can be seen on safari. Thanks for following us!
2 hours ago
Contra Costa CWS
@CoCoCWS

Shelter In Place (cococws.us)

6:38 PM - 6 Aug 12 via JTwtr · Embed this Tweet
Emergency Alert

Outdoor Sirens

Internet Alert Display Portal
RSS, Atom

Emergency Alert System: Radio, TV and Cable

California Emergency Digital Information System

Social Media: Twitter, Facebook

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Telephone Emergency Notification System

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The search returned 4 results for the date range entered.

<table>
<thead>
<tr>
<th>CAPIIdentifier</th>
<th>Headline/Event</th>
<th>Status</th>
<th>Type</th>
<th>Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>KMTR3638592635</td>
<td>CONTRA COSTA COUNTY HEALTH SERVICES -</td>
<td>Actual</td>
<td>Alert</td>
<td>Mon, Aug 06, 2012 09:18:54 PM PDT</td>
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<tr>
<td>KMTR2618085097</td>
<td>CONTRA COSTA HEALTH SERVICES -</td>
<td>Actual</td>
<td>Alert</td>
<td>Mon, Aug 06, 2012 07:28:20 PM PDT</td>
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<tr>
<td>3308219GW</td>
<td>Shelter in Place</td>
<td>Actual</td>
<td>Alert</td>
<td>Mon, Aug 06, 2012 06:36:27 PM PDT</td>
</tr>
<tr>
<td>KMTR4041429376</td>
<td>CA CONTRA COSTA COUNTY CWS MARTINEZ CA -</td>
<td>Actual</td>
<td>Alert</td>
<td>Mon, Aug 06, 2012 06:28:47 PM PDT</td>
</tr>
</tbody>
</table>
GET REAL TIME ALERTS ON YOUR PHONE

FROM: Contra Costa Health Services
FOR: Facility Location: 841 Chevron Way, Richmond.
DESCRIPTION: This is a message from Contra Costa health services. There is an emergency at Chevron refinery.
INSTRUCTION: Residents in Richmond, No
Contra Costa County Office of the Sheriff, Emergency Services Division

**Message:** 1344303790835 from CHVADM@cws.cccounty.us sent at 18:43 PDT on 2012-08-06

System Private Alert

**Source ID:** Chevron Admin. (RSC), Richmond

**Addresses:** CCHS CCCOES COMM1 PPM CHVFIR

**Event:** Terminal PK90Chat Captured on air

**Levels:** Unknown - Unknown - Unknown

**Expires:** 19:08 PDT on 2012-08-06

**Headline:** Terminal PK90Chat Between CHVADM and CCHS CCCOES COMM1 PPM CHVFIR

**Description:** CHVADM > CCHS, CCCOES, COMM1, PPM, CHVFIR: LEVEL 3 INCIDENT CHEVRON REFINERY, RICHMOND CATEGORY: Fires! ACTIVATE TENS ZONES: C&O&M&M&A&N&D 0921 Chevron All Zones! CHEMICAL(S) INVOLVED: See Comments COMME NTS: Fire 4 Crude unit in process of shutting down plant, visible flaring WIND: From 22.2 degrees OR direction. SPEED: 0.5 MPH RESIDENTS IN RICHMOND, NORTH RICHMOND A ND SAN PABLO ARE ADVISED TO SHELTER-IN-PLACE
Public Alerts

- Internet Alert Display Portal, CWS, RSS, Atom
- Outdoor Sirens
- Emergency Alert System: Radio, TV and Cable
- National Weather Service, Radio
- Telephone Emergency Notification System
- Text Message to Cells: FEMA

California Emergency Digital Information System

Social Media: Twitter, Facebook

Mobile App, CCTV, TIS Radio Stations

Refinery Activation

Push Button and Terminal

Staff Alerts

- Telephone Alert
- Staff Text Messages
- CWS Terminals
- Computer pop-up

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CMAS allows public safety authorities to use FEMA’s platform for Emergency Networks to send geographically targeted, text-like Wireless Emergency Alerts to the public.

WEAs will relay the alerts to mobile phones using cell broadcast technology that will not get backlogged during times of emergency when wireless voice and data services are highly congested.
High speed alerting

- Case study – Mexico city – 12 seconds advance notice

- December 10, 2011, 19:47:25 local time
- Major EQ 110 miles from Mexico City
- Warning System activated at 19:48:04
- Arrival of EQ wave: 12 seconds after activation
- Radio activation: <1 second
- Warning time: >11 seconds

Mexico City Governor deploying SARMEX at schools
May 2011