

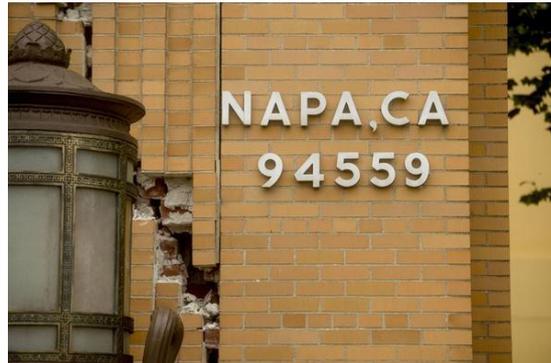
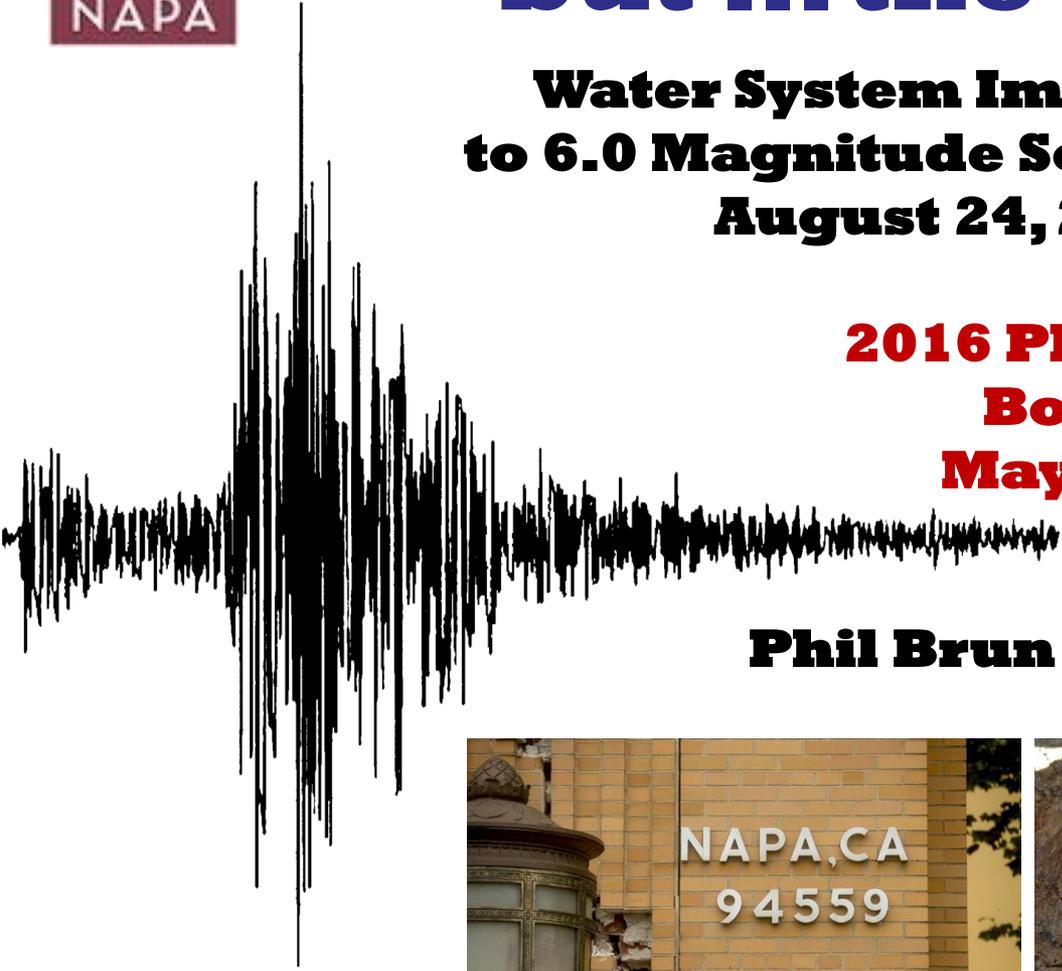


# **NAPA ROCKS** **but ... the WATER is ON**

**Water System Impacts and Response  
to 6.0 Magnitude South Napa Earthquake  
August 24, 2014 at 3:20AM**

**2016 PNWS AWWA  
Boise, ID  
May 6, 2016**

**Phil Brun - City of Napa**





**NAPA ROCKS** but ... the **WATER** is **ON**



## **Napa Water System Overview**

- ❑ 25,000 Services (population = 80,000)**
- ❑ Supply – State Water Project and local reservoirs**
- ❑ 3 Treatment Plants – 43MGD Capacity**
- ❑ 12 Storage Tanks – 30MG storage**
- ❑ 370 Miles of pipeline**
- ❑ 9 Pump Stations (10% of service area)**
- ❑ 14 Pressure regulator stations**
- ❑ 57 Employees**





# NAPA ROCKS but ... the WATER is ON

## The Event

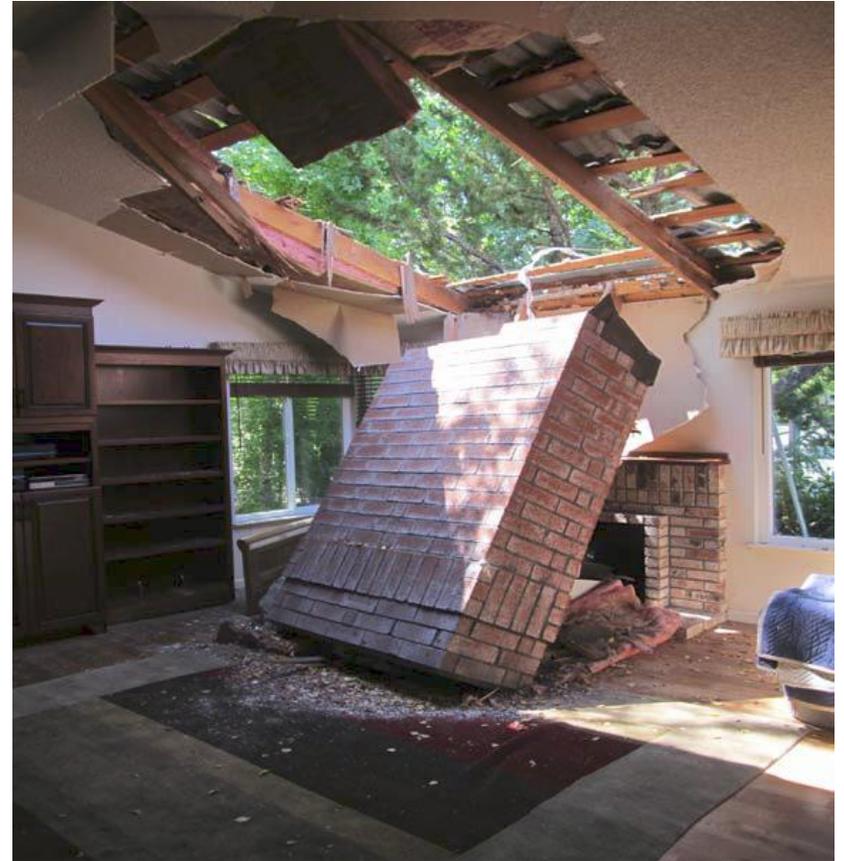




# NAPA ROCKS but ... the WATER is ON



## The Event





# NAPA ROCKS but ... the WATER is ON



## The Event





**NAPA ROCKS** but ... the **WATER** is ON



## **The Event - Water Leaks**





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## **The Event - Water Tank Damage**



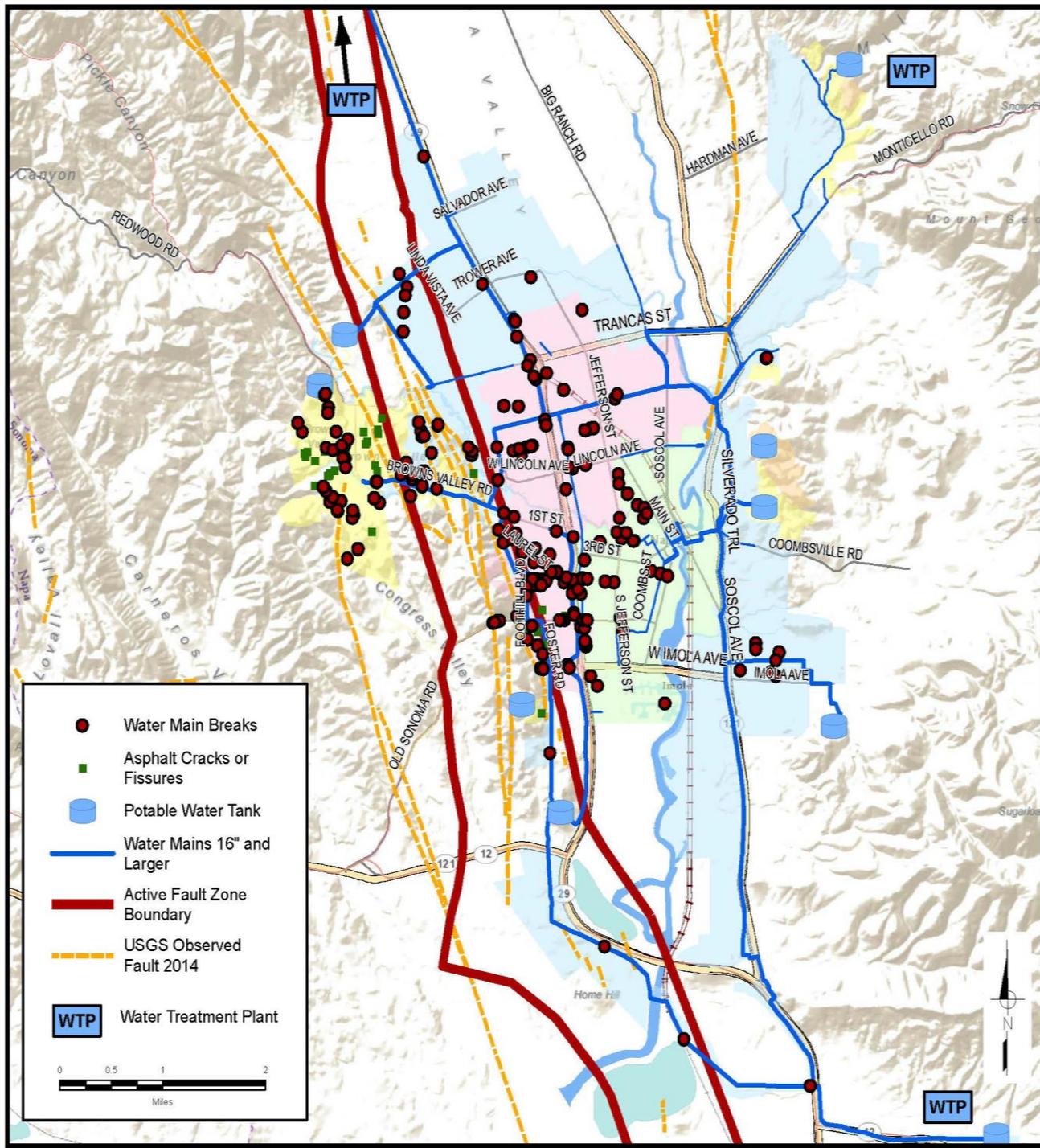


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## **The Event - Water Needs**

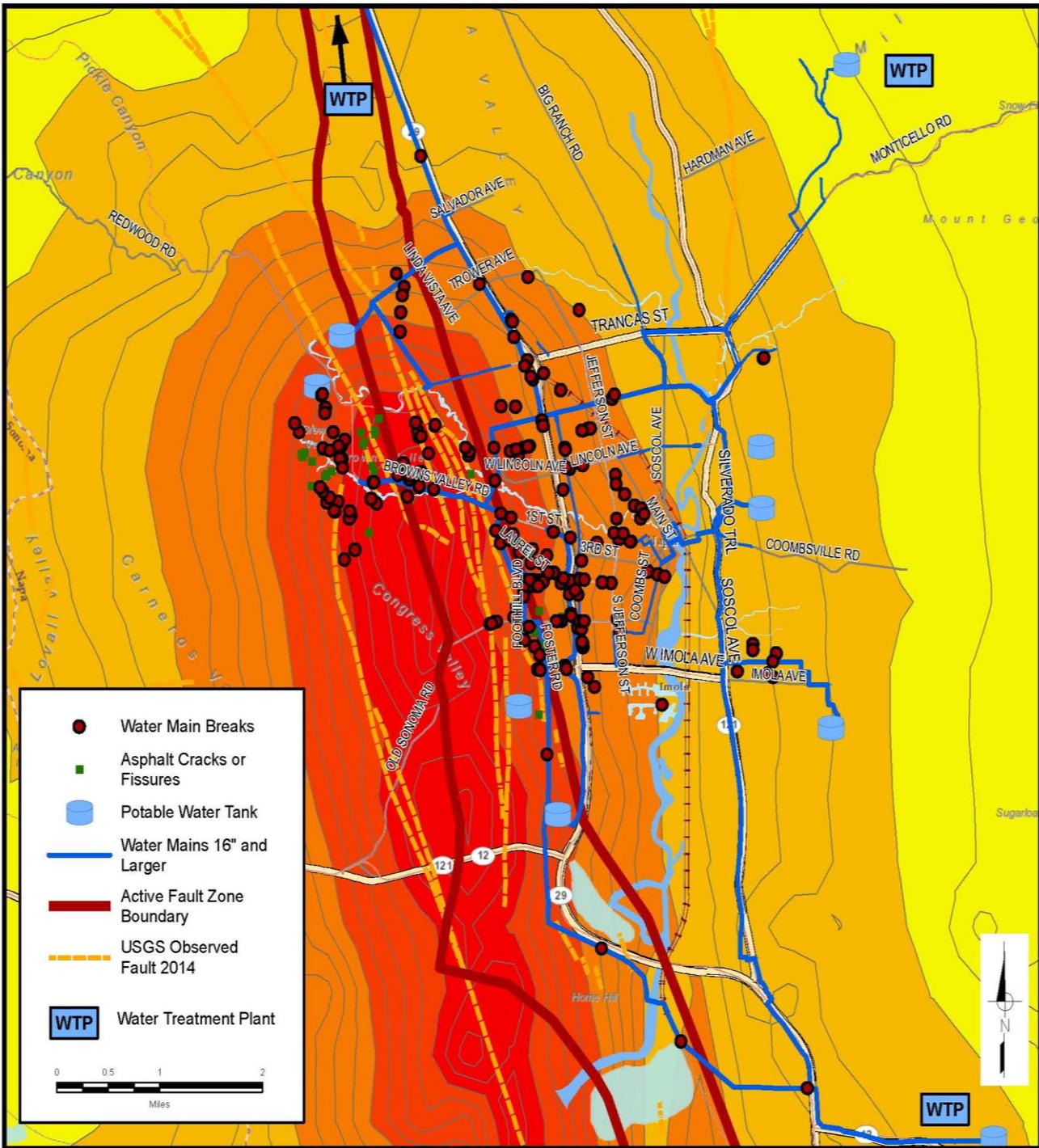




- Water Main Breaks
- Asphalt Cracks or Fissures
-  Potable Water Tank
-  Water Mains 16" and Larger
-  Active Fault Zone Boundary
-  USGS Observed Fault 2014
- WTP Water Treatment Plant

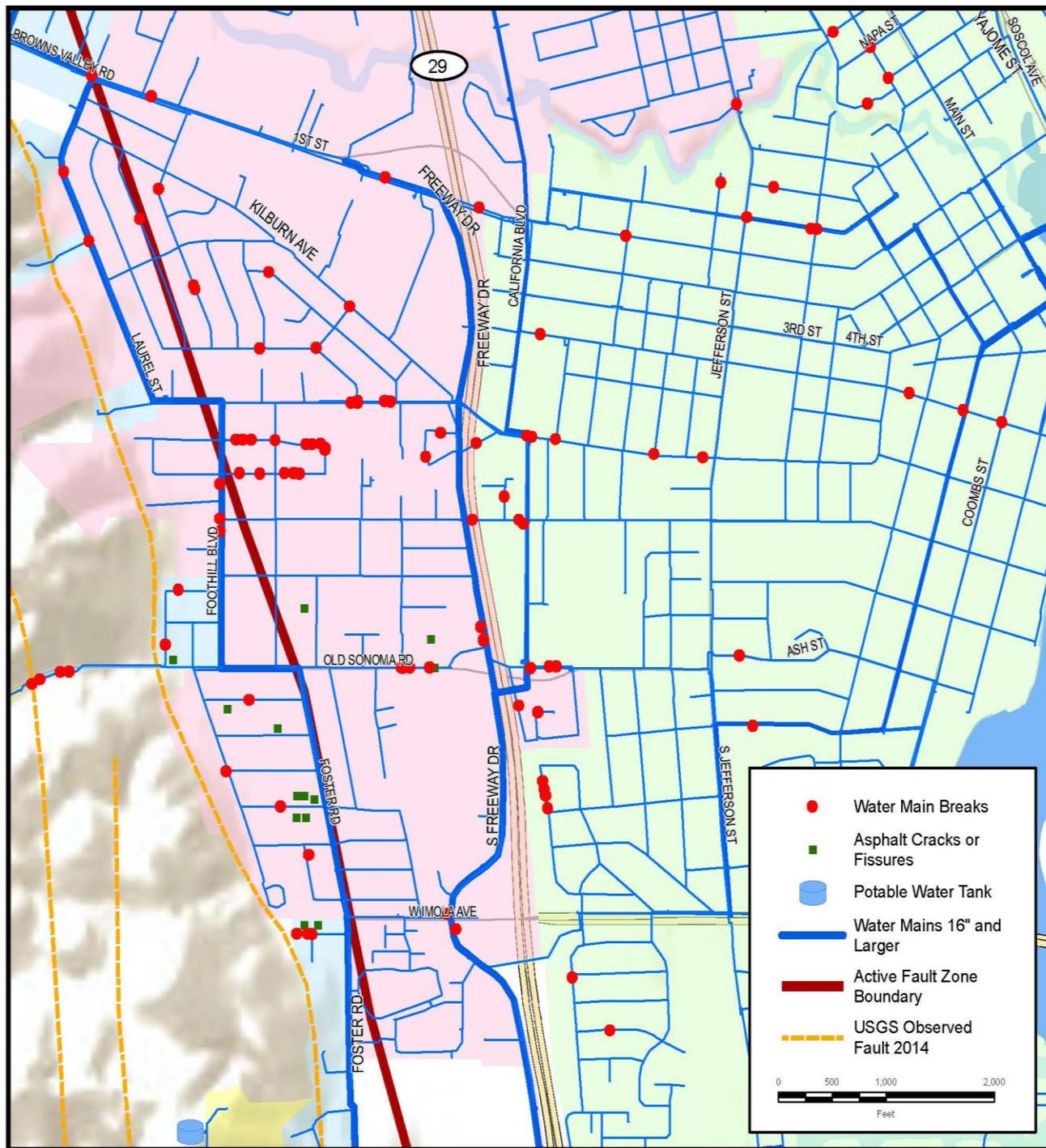
0 0.5 1 2  
Miles

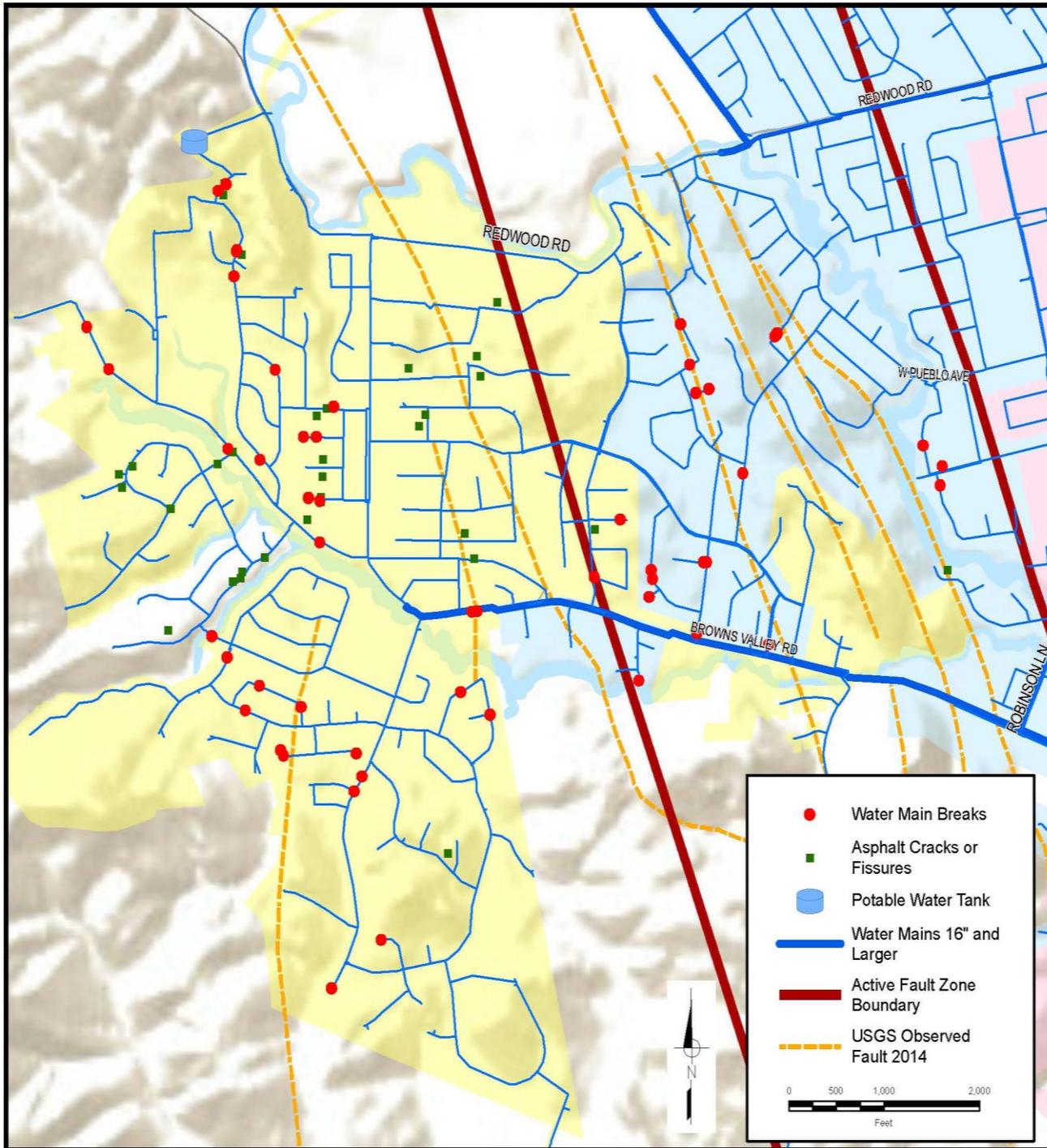




- Water Main Breaks
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0    0.5    1    2  
Miles





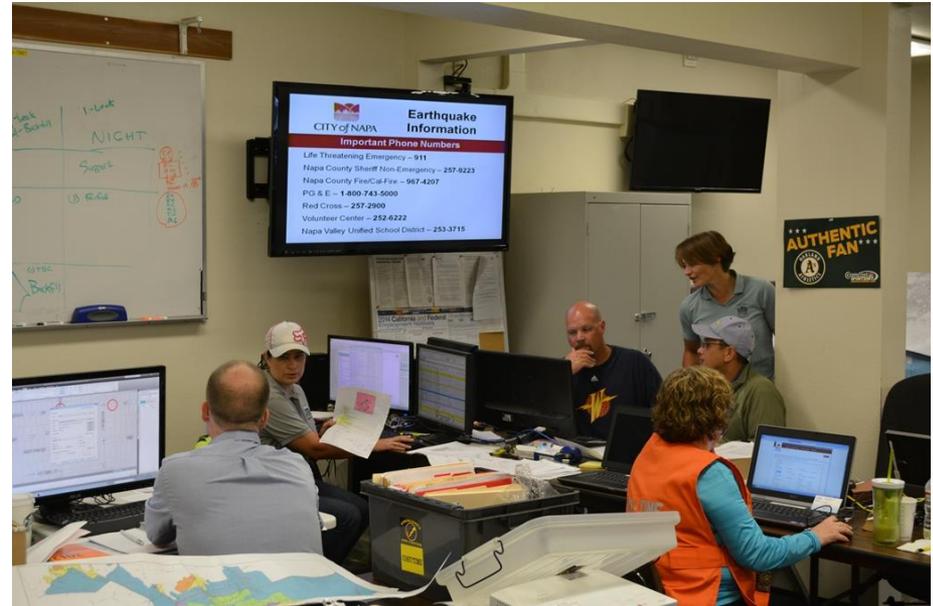
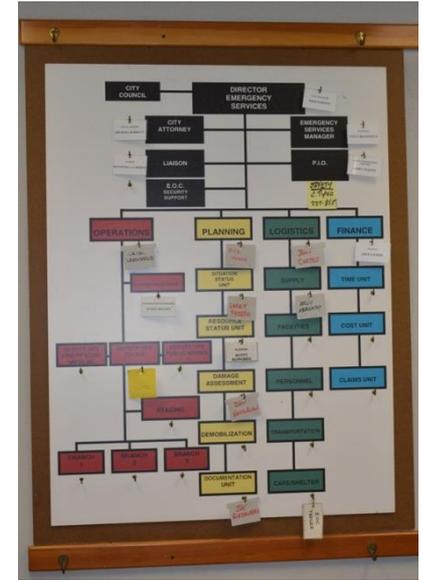


# NAPA ROCKS but ... the WATER is ON



## Day 1 - Sunday

- ❑ EOC Opens
- ❑ DOC Established at Corp Yard
- ❑ Employees Report to Work





**NAPA ROCKS** but ... the **WATER** is **ON**



## **Day 1 - Sunday (System Assessment)**

- Major Facilities - Confirm dams and treatment plants are ok**
- No transmission line damage**
- 60 distribution leaks by early AM**
- Ramp up treatment plants - FEED the leaks to maintain positive system pressure**



**NAPA ROCKS** but ... the **WATER** is **ON**



## **Day 1 - Sunday (We need HELP)**

- ❑ Called in 4 contractors (3 have on-call emergency contracts with City)**
- ❑ CalWARN offered resources approximately 1-hour after quake**
- ❑ Requested five (5) Type III Water Distribution System Damage Assessment and Repair Teams**
- ❑ CalWARN Teams scheduled to arrive at 11AM on Monday**



**NAPA ROCKS** but ... the **WATER** is **ON**



## **Day 1 - Sunday (Logistics)**

- Order fuel tanks for Corp Yard**
- Established 12-hr shifts for staff**
- Stockpile backfill material**
- Opened potable water stations**
- Prepare leak packets - maps, USA tag**
- Hotels, shuttle cars, gas cards, food for CalWARN crews and other mutual aid**



**NAPA ROCKS but ... the WATER is ON**



## **Day 1 - Sunday (Boil Water Advisory Notice)**

If you lost water service completely for any period of time after today's earthquake, the City of Napa advises you to use one of these three options:

- use bottled water for drinking and cooking
- boil tap water for one full minute before use for drinking or cooking
- use water for drinking and cooking from one of the water stations set up by the City, on Pearl Street one block west of Main, or at the Las Flores Center on Linda Vista Avenue

All tap water remains safe for bathing and other household uses. If your water appears cloudy but you did not lose service, let the tap run until the sediment clears.

**Once all the broken water lines are repaired and City water has been restored and tested, the City will rescind this advisory notice.**

Call 707-257-9544 with questions. The Water Division is staffing phones 24 hours a day while repairs are made.

This notice is provided to you by the City of Napa (System No. 2810003) in collaboration with the State Water Resources Control Board, Division of Drinking Water.



# NAPA ROCKS but ...the WATER is ON



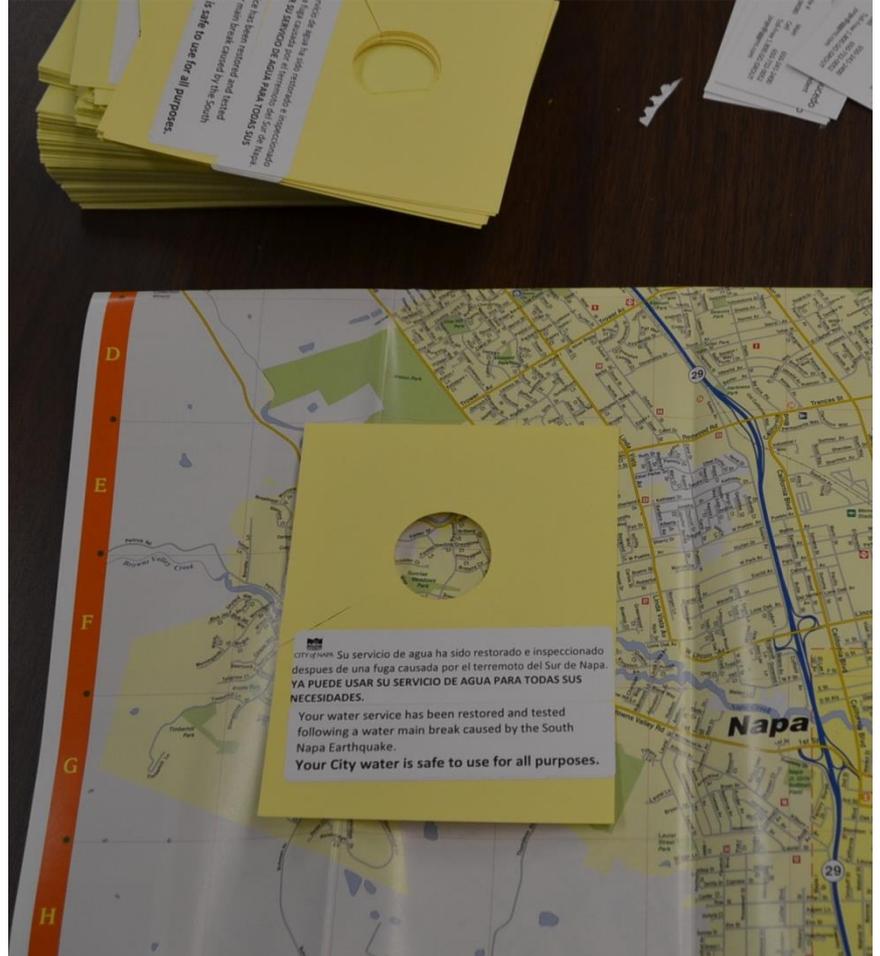
## Day 1 - Sunday (Water is Safe Notice)

Your water service has been restored and tested following a water main break caused by the South Napa Earthquake.

**Your City water is safe to use for all purposes.**

Su servicio de agua ha sido restorado e inspeccionado despues de una fuga causada por el terremoto del Sur de Napa.

**YA PUEDE USAR SU SERVICIO DE AGUA PARA TODAS SUS NECESIDADES.**





**NAPA ROCKS** but ... the **WATER** is **ON**



## **Day 2 - Monday (Highlights)**

- 90 leaks confirmed**
- Ordered repair materials**
- USA Locate Issues**
- Need cost estimates for damages**
- CalWARN Crews Arrive**



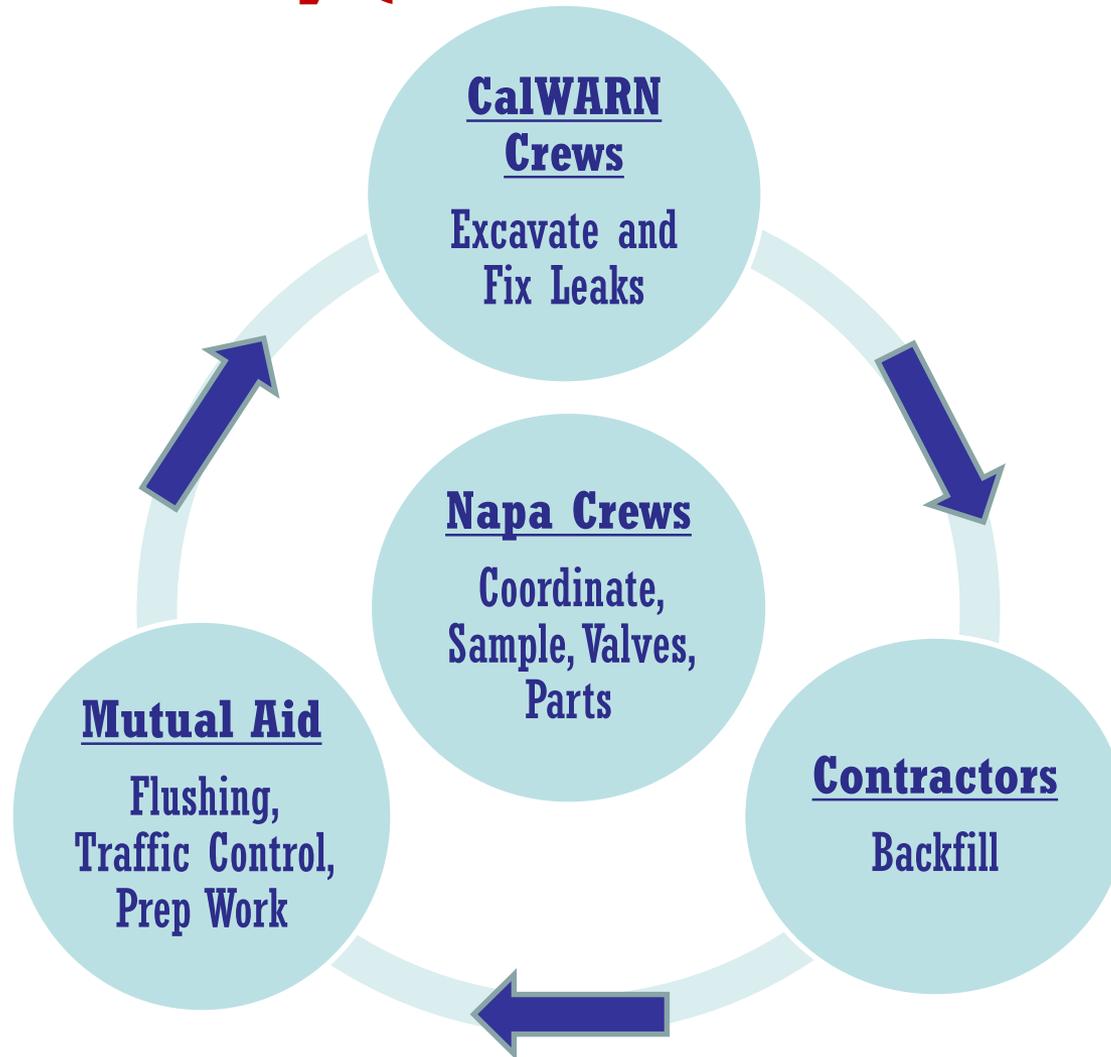




# **NAPA ROCKS** but ... the **WATER** is **ON**



## **Day 2 - Monday (Established the "Dance")**





# NAPA ROCKS but ... the WATER is ON



## Day 2 - Monday (The Paperwork)





**NAPA ROCKS** but ... the **WATER** is **ON**



## **Day 2 - Monday (Feed the Crews)**





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## **Day 3 - Tuesday (Highlights)**

- 120+ leaks confirmed**
- Need more crews - Request to CalWARN**
- Established goal to release CalWARN and Mutual Aid by Friday for Labor Day Holiday**
- USA Locate issues cause delays**



**NAPA ROCKS** but ... the **WATER** is **ON**



## **Day 4-6 (The Media Finds Us)**





**NAPA ROCKS** but ... the **WATER** is **ON**



## **Day 4-6 (The most productive days)**

- 2 additional CalWARN crews arrive**
- The “Dance” Continues**
- Crews have a goal to be done by Friday**





**NAPA ROCKS** but ... the **WATER** is ON



**120 Leaks  
in 5 Days!**





**NAPA ROCKS** but ... the **WATER** is **ON**



# Thank the Crews



## City of Napa – 2014 Earthquake Emergency Response Crews

### City of Napa

#### Mutual Aid

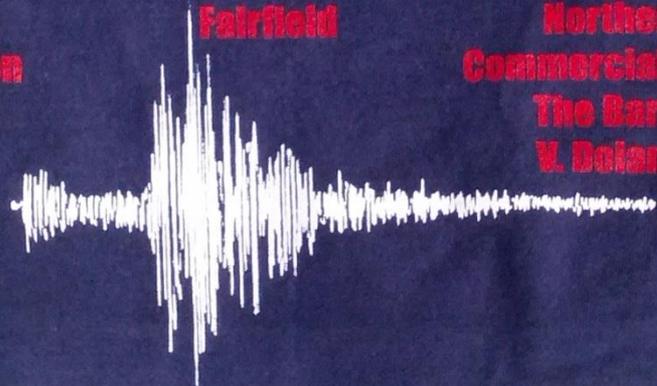
American Canyon  
Benicia  
Colistoga  
Napa County  
Napa Sanitation  
North Marin  
St. Helena  
Yountville

#### CalWARN

ACWD  
CCWD  
EBMUD  
Fairfield

#### Contractors

Atlas Peak  
GD Nielson  
Hess  
Northern Pacific  
Commercial Power Sweep  
The Barricade Co.  
V. Dolan Trucking



**120 Water Leaks Repaired in 5 Days!**



**NAPA ROCKS** but ... the **WATER** is **ON**



## **Lessons Learned**

- Join WARN Now**
- Damage could have been much worse**
- Be ready to take care of Mutual Aid**
- Pre-build potable water stations**
- Develop a tracking and recording system for leaks now**
- Assign water “inspectors” to geographic areas to provide accurate info on leaks**
- USA’s need to be managed and prioritized, join 24-hr online service**



**NAPA ROCKS** but ... the **WATER** is **ON**

## **Lessons Learned**

- Assign leak crews to do what they do best**
- Need more administrative support for record keeping, check in/out, and cost estimating**
- The Admin/Engineering team worked too long of shifts - 16-18 hours**
- Crews need to document each leak with photo, parts, labor, time**
- Customers were understanding**



**NAPA ROCKS** but ... the **WATER** is **ON**



## **Things to Think About Ahead of Time**

- Materials - pipe, leak clamps, etc.**
- Backfill material - availability, stockpile areas**
- Dump locations - asphalt, spoils**
- Food (what if restaurants are closed?)**
- Fuel**
- Drinks**
- Hotels**
- Shuttle Vehicles to Hotel**



**NAPA ROCKS** but ... the **WATER** is **ON**



## **Things to Think About Ahead of Time**

- Damage Assessment and Cost Estimating**
- Mapping**
- Documenting the Event – photos, ICS forms**
- Communicating with Division of Drinking Water**
- Have you trained on WARN deployment?**
- Be prepared to utilize resource typing**
- How you would staff the “Dance”?**



**NAPA ROCKS** but ... the **WATER** is **ON**



## **Recovery (FUN with FEMA)**

**RECOVERY**  
is 10X more  
work than  
the Disaster

- You need LOTS of DOCUMENTATION**
- Significant staff time required**
- Establish clear lines of communication between your team and FEMA/OES**
- Recognize that FEMA has rules to follow and you won't like some of them**



**NAPA ROCKS** but ... the **WATER** is **ON**



## **Recovery (FUN with FEMA)**

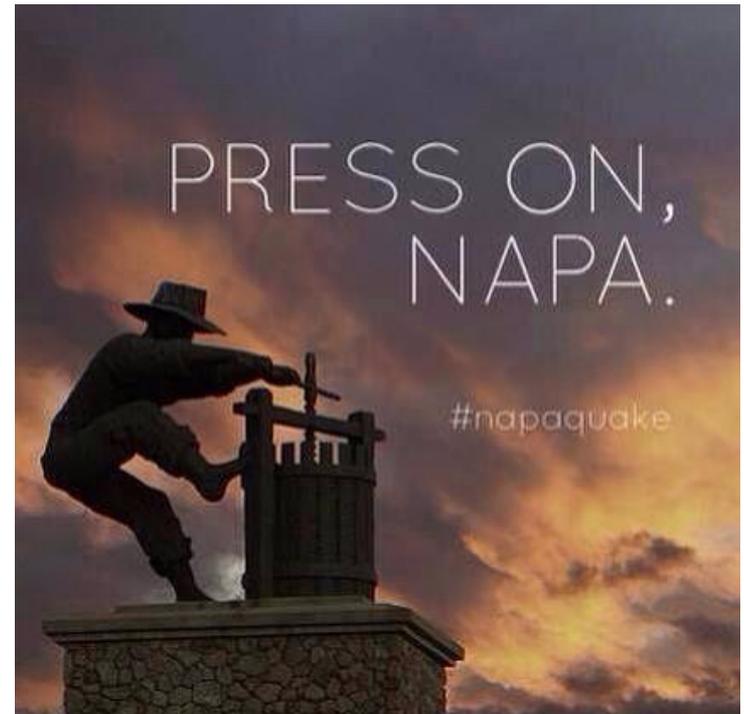
- Talk through process and strategy so you don't do things wrong the first time**
- Have a clear idea of what you need to fix and how you want to approach projects - Be organized**
- FEMA is only the first step, need to do work and get paid (OES) and get audited (OIG)**
- Work together - they have\$ you need**
- DOCUMENTATION**



# WHEN IT HITS

## YOU will make sure the

## WATER is ON

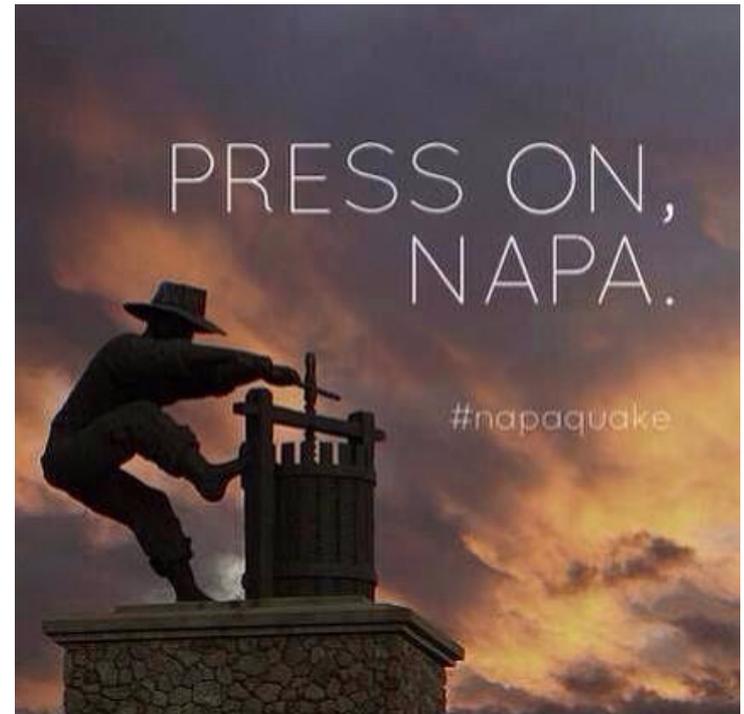
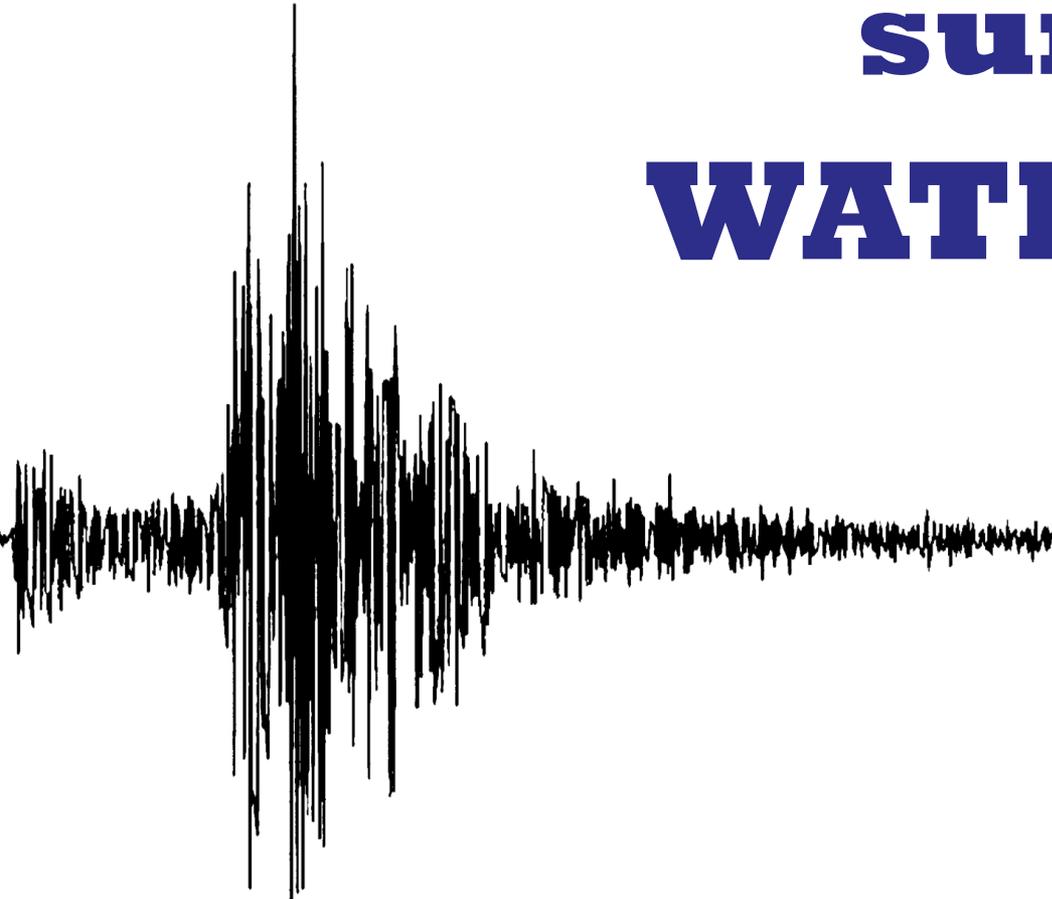




# WHEN IT HITS

## YOU will make sure the

## WATER is ON



# QUESTIONS?