

# **Emergency Radio Communication Alternatives**

Prepared for

**Poway Neighborhood Emergency Coordinators (PNEC)  
Townhall Meeting**

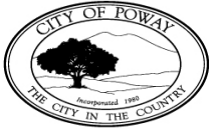
**September 8, 2016**

by

**NN3V, Charlie Ristorcelli**



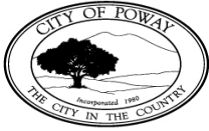
# Agenda



- **Why discuss radio communications**
- **Personal Resources for radio communications**
- **Family Radio Service (FRS) resources**
- **Amateur (Ham) radio resources**



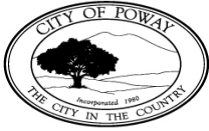
# Why Discuss Radio Communications



- **Our society relies on communications for information**
  - **Broadcast radio and TV**
  - **Telephones**
    - Land line
    - Cellular (they are radios)
  - **Web services**
    - Internet combines fiber with WiFi
- **Those communications rely on two prime resources**
  - **Electric power**
  - **Capacity of the communication system**
    - Amount of traffic it can handle



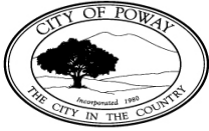
# What If?



- **Disaster strikes**
  - Earthquake
  - Fire
  - Terrorist attack
- **Electric power fails**
  - Quake destroys the grid
  - Fire destroys transmission lines
- **How do you know:**
  - What?
  - Where?
  - How is my family?
  - Etc.



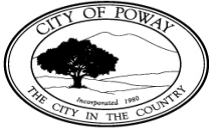
# Disasters & Communications



- **August 2016 Louisiana Floods**
  - **Affected areas lost all power and services**
    - No radio and TV news
    - Internet breakdown
    - Cellular system collapse
- **June 2016 Fire in Potrero area**
  - **Residents accused city leadership of failing to inform citizenry**
  - **Leadership admitted they had no public communications resources**
    - Power loss
    - Telephones overwhelmed
    - Internet inoperative
- **9/11**
  - **Radio, TV, telephone, internet service in NYC completely disrupted**
    - Remained that way for 2 weeks



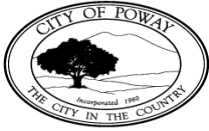
# Personal Impact of Disasters



- **Uncertainty about cause of calamity**
  - Leadership affected by inability to guide response
- **Lessened ability to respond effectively**
  - Safety
  - First aid
- **Family disruption**
  - Inability to communicate to family members
  - Inability to know family situation



# History Lesson

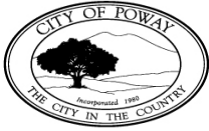


- **Every major disaster results in large loss of communications infrastructure**
  - **Loss of commercial infrastructure**
    - Power
    - Internet
    - Phone service
- **Ham Radio: “The Communication System That Never Fails”**
  - **Totally independent of commercial infrastructure**
  - **Worldwide communications capability**
  - **Fully organized and trained**
    - **Emergency Responders (CERT, etc.)**
      - Health and welfare
  - **Worldwide organization**
    - National and international
- Ham **VOLUNTEERS** assist communities in need.



# Family Disaster Communication Preparedness

## Two Way Radios



- **Family Radio Service (FRS)**

- **Advantages**

- Inexpensive
- No license required
- 14 channels to choose from
- Shared communication with GMRS radios

- **Disadvantages**

- Handheld only
- 1 Mile Range

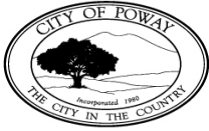






# Family Disaster Communication Preparedness

## Two Way Radios



## General Mobile Radio Service(GMRS)

### – Advantages

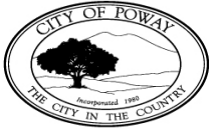
- Inexpensive (Much more easy to find)
- Range of 2-5 miles (varies with terrain)
- Base station or mobile
- Boost signal with external antennas or repeaters

### – Disadvantages

- Requires a license (one per family)
  - Intended for family use
  - Some business licenses are grandfathered
  - Range – better than FRS but still limited



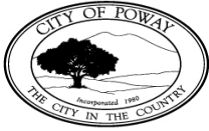
# Amateur (Ham) Radio



- **What?**
- **How?**
- **Where?**
- **Local resources**



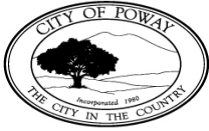
# Amateur Radio



- **Federally Licensed Service**
  - Must have amateur radio license
- **Worldwide Communications**
  - State of the art equipment
  - Ham operators establish infrastructure free systems
- **World famous disaster communications resource**
  - Continuous operation & experience
  - Distributed capabilities
  - Nationally organized for disaster response



# Poway Ham Resources



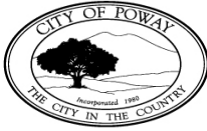
- Local ham **volunteer** operators part of:
  - Radio Amateur Communication Emergency Service (RACES)
    - Federally charged with law and order communication backup
  - Amateur Radio Emergency Service (ARES)
    - National health and welfare communications assistance
  - Community Emergency Response Team (CERT)
    - Operate under auspices of Fire Department
- 50+ local ham radio operators
  - 23 participate in Poway Amateur Radio Society (PARS)
    - Poway Amateur Communications Team (PACT)
    - Ham operator **volunteers** who practice disaster communication response
- Poway City Emergency Operations Center (EOC)
  - Official city team that coordinates emergency response in Poway
  - EOC now equipped with amateur radio equipment to support all ham radio emergency communications volunteer effort



# Poway Neighborhood Emergency Coordinators

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## Amateur Radio



- **Effort to accelerate dissemination of emergency response information within Poway**
  - What, where, how, why, etc.
  - Get information disseminated even if commercial infrastructure collapses
  - Information generated with close association to City of Poway **EOC**
- **Partnership between PNEC local coordinators & volunteer ham radio operators**
  - Ham radio volunteers able to respond to emergency will be communications resource
  - Information to and from EOC will reach ham operators
  - PNEC neighborhood coordinators can associate with ham radio volunteers
    - Disseminate health and welfare information
    - Clarify local conditions
    - Assist in emergency recovery