

Emergency Radio Communication Alternatives

Prepared for

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

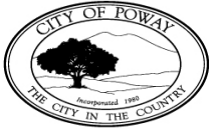
September 8, 2016

by

NN3V, Charlie Ristorcelli



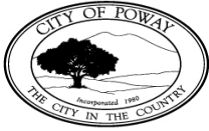
Agenda



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



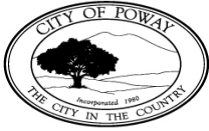
Why Discuss Radio Communications



- **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



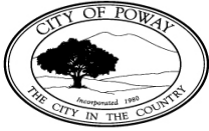
What If?



- **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.



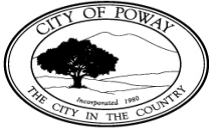
Disasters & Communications



- **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



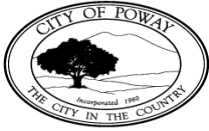
Personal Impact of Disasters



- **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

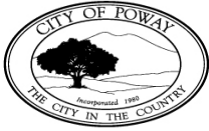


- **Every major disaster results in large loss of communications infrastructure**
 - **Loss of commercial infrastructure**
 - Power
 - Internet
 - Phone service
- **Ham Radio: “The Communication System That Never Fails”**
 - **Totally independent of commercial infrastructure**
 - **Worldwide communications 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**

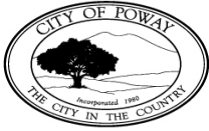
- Handheld only
- 1 Mile Range





Family Disaster Communication Preparedness

Two Way Radios



General Mobile Radio Service(GMRS)

– Advantages

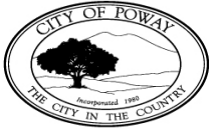
- Inexpensive (Much more easy to find)
- Range of 2-5 miles (varies with terrain)
- Base station or mobile
- Boost signal with external antennas or repeaters

– Disadvantages

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



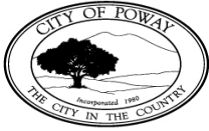
Amateur (Ham) Radio



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



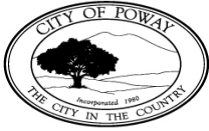
Amateur Radio



- **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



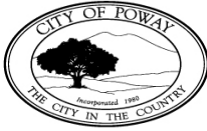
- Local ham **volunteer** operators part of:
 - Radio Amateur Communication Emergency Service (RACES)
 - Federally charged with law and order communication backup
 - Amateur Radio Emergency Service (ARES)
 - National health and welfare communications assistance
 - Community Emergency Response Team (CERT)
 - 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

&

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