

**QUESTIONS AND ANSWERS
OF THE
MARIN EMERGENCY RADIO AUTHORITY
Updated January 18, 2011**

1. What is MERA?

MERA, the Marin Emergency Radio Authority, is a countywide public agency consisting of the County, all cities and towns, fire districts, and other special districts like MMWD that joined together in 1998 to replace the aging and obsolete public safety communications system.

2. Why is it necessary?

Efforts to build a new system were started when it became known that replacement parts for the existing system would no longer be available, making the system obsolete and inoperable. The new system would be a state-of-the-art digital emergency communications system.

MERA allows all of the fire, paramedic, police, and public works employees within the County to dependably communicate with each other. Many narrow canyon neighborhoods have gained critical emergency radio linkage for the first time, as have the unincorporated areas of the County.

3. What agencies belong to MERA?

The following agencies comprise MERA: City of Belvedere, Bolinas Fire Protection District, Town of Corte Madera, Town of Fairfax, Inverness Public Utility District, Kentfield Fire Protection District, City of Larkspur, County of Marin, Marin Community College District, Marinwood Community Services District, City of Mill Valley, Novato Fire Protection District, City of Novato, Town of Ross, Ross Valley Fire Department, Town of San Anselmo, City of San Rafael, City of Sausalito, Southern Marin Fire District, Town of Tiburon, Tiburon Fire Protection District, Twin Cities Police, Marin County Transit District, Marin Municipal Water District, Stinson Beach Fire District.

4. What is the technology for this system?

There are 17 sites in the Authority's system, ensuring coverage to the incorporated and unincorporated areas of the County. Each site in the system contributes coverage to the local area, along with other surrounding areas, which allows communication with one another through a main processing site located at the Marin Civic Center. The antennas and equipment located at each site provide a radio communication link between the system and its members, as well as each remote site and central processing site.

The transmit antennas send the transmissions to mobile and portable radios. The whip antennas receive the transmissions from mobile and portable radios. The microwave system provides a site-to-site link, or backbone, which connects the remote sites to the central processing site. The

system technology allows agencies to share the backbone but retain their individual autonomy as required for day-to-day operations.

5. What does a typical MERA facility look like?

Generally, there is a shelter housing the electronics equipment; a 45-kw generator; 500-gallon propane fuel tank; a 20- to 60-foot monopole or lattice tower with one or two microwave dish antennas; two transmit antennas and a 12-foot whip on top. Some of these specs will change depending on the location of the tower. All transmissions use RF (radio frequency) energy.

6. What are Radio Frequency Emissions and who determines the safety standards?

Radio frequency emissions, widely used for telecommunication purposes from cell phones to microwaves, are closely regulated by the Federal Communication Commission. In October 1997, the FCC adopted the human exposure limits for field strength and power density recommended in Report No. 86. "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the National Council on Radiation Protection and Measurements ("NCRP"). The FCC mandates that all communication facilities meet strict exposure guidelines that have been established by leading scientific and medical research associations.

The RF energy measurement is based upon the type of transmitter emissions, power of the transmission, duration of the transmission, the angle and direction of the transmission antennae, and distance to the site being measured. RF energy drops dramatically as distance grows. Radio emissions from a typical MERA transmission site are well below federal standards, less even than what could be received when using a cellular phone for a prolonged period of time.

7. When did this project start and how is it funded?

The project description was approved and the Authority was created in 1998 and financing was approved in 1999, with a total cost of \$27 million.

The contract was awarded to Motorola in 1998 and given authority to proceed in early 1999 with a completion date of December 2002. The Motorola system uses the most current narrow band digital technology available for Public Safety operations, based on standards developed by the Association of Public Safety Communications Officials (APCO). This same technology is being used by many agencies similar to MERA, including the City and County of San Francisco, the County of San Diego and Orange County.

8. Where are the towers located?

The prime site is located at Marin Civic Center with remote antenna sites at Mt. Burdell, Pt. Reyes, Big Rock, Mt. Barnabe, Dollar Hill, Forbes Hill, Tiburon, San Pedro, Bay Hill, Mill Valley, Sonoma, Bolinas, and Mt. Tam. Each site is extensively researched for maximum coverage and fiscal responsibility. A system-wide Environmental Impact Report (EIR) was done which included all sites.