

Upgraded emergency radio, eyeing tax, could fill dead spots

By Mackenzie Mount
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The joint powers organization that runs Marin County's emergency radio system is seeking public and member support for a \$40 million upgrade to be implemented by 2018.

Partnering emergency response agencies in West Marin, however, have not wholly benefited from the current system; in rural areas, the terrain can make communication difficult and volunteer fire firefighters require simpler technology.

The tax proposed by Marin Emergency Radio Authority—comprised of 25 public agencies, including the Bolinas and Stinson Beach Fire Protection Districts, the Inverness Public Utility District and the Marin Municipal Water District in West Marin—would likely not appear on a ballot until November 2014.

It has been tentatively described as an annual \$29 parcel tax per single-family home, an amount early polling suggests is low enough to garner the two-thirds public support required for the measure to pass.

State and federal grants would supplement revenue generated by the tax, and local agencies would continue to help shoulder the system's operating costs.

But according to a radio expert who asked to remain anonymous, the current digital system, as well as the planned "next-generation" system, are not the best suited to West Marin.

The relatively low frequencies used before 2004, when the current system was implemented, "just got around hills and blanketed into valleys," making local coverage more consistent.

"In other areas, the new MERA system works fine, but here and there are a lot of dead spots," he said.

MERA formed in 1998 to consolidate the systems of the county's myriad public safety agencies, and, ideally, to foster communication between them. The buzzword, not just in Marin, but also at the Federal Communications Commission, was "interoperability" between agencies.

Many local agencies had used conventional analog radio until the new "trunked," or computer-controlled, system went live in 2004.

Whereas analog often consisted of radios communicating directly on a set

frequency, the trunked system involves a computer coding a human voice into ones and zeroes and transmitting them over one of a select few frequencies available, which are then decoded by the target radio.

In short, emergency responders communicate over fewer frequencies that are accessible to them through an assigned “talk-group.”

Construction of the current system cost about \$29 million, according to MERA executive officer Maureen Cassingham. It has an annual operating cost of about \$1.6 million, she said, paid by each member agency based in part on a calculation of the agency’s jurisdiction’s physical size, population and how much it uses the system.

The Inverness Public Utility District, for instance, paid \$21,043.42 for the 2012-2013 fiscal year, according to general manager Scott McMorro. The majority of that fee covered paying back bonds that funded the construction of the current system, with about \$8,000 of it covering the annual operations budget.

The operating cost of the next-generation system has not yet been determined, but the annual operating budget would be supported by member agencies.

The overhaul campaign officially began Tuesday morning over coffee and bagels with the Board of Supervisors, who have the ability to propose a tax that cover fund much of the implementation costs.

District Four Supervisor Steve Kinsey asked MERA’s board about his district’s dead zones. “West Marin has been in the hole with MERA. There are a number of spots in West Marin that are still radio-free, but this [next-gen system] is going to improve that?” Mr. Kinsey asked.

County fire chief Jason Weber said MERA’s new system would add four antenna sites to known dead zones between Stinson Beach and Muir Beach, as well as in Tomales, Tiburon and Wolfback Ridge. The current system has 17 sites throughout the county.

Though MERA’s higher-frequency, longer-distance digital communication has faltered in West Marin, the emergency responder said the system has also failed the entire county at times. “In 2005, there were some winter storms. The MERA system got overloaded. Everyone wanted to talk at the same time—public works, the roads crews,” said an emergency responder, who also asked to remain anonymous.

The talk-groups used to communicate among agencies air on fewer channels. A responder does not know when all of the channels are in use, instead getting bumped into a queue until the computer gives him or her a brief window to speak.

The talk-group for the road crews, for example, was assigned “a lower pecking order than the fire departments or police departments,” the emergency responder said. “They couldn’t even talk during that flooding. They had to figure out something else to do. There’s no audible way to tell how busy things are.”

MERA special project manager and Novato police captain Dave Jeffries said the system has encountered exceptional cases when it didn’t have enough voice

channels to support everyone. But MERA has obtained a few more frequencies, undergone some technical updates and has trained members on using the system judiciously, he said.

The anonymous radio expert said that a digital radio system operating in the higher mandated bandwidth offers the possibility of transmitting more than just voices, which will require the installation of more towers.

“In the [current] system, the radios are still radios, but they are computer controlled. So the central computer tells them what to do, what channels to go on, what frequencies to use. In the next-gen system, the radios almost become closer to being smart phones... It’s a computer terminal, but as you may know, sometimes your computer doesn’t work, and sometimes it does inexplicable things. Sometimes your cell phone drops a call. It’s inconvenient to lose an email. It can be life or death in an emergency radio system.”

Volunteer firefighters in West Marin also still rely on alerts from a dispatcher using low-band, analog technology. Mr. Jeffries said this volunteer pager, a device operating independent of MERA’s 2,900 digital radios countywide, will continue to be used, unless something better comes along.

“If we find out six months from now that there’s a new technology that would work smoother, we’re certainly going to look into that,” Mr. Jeffries said

For now, the first phase of MERA’s planned upgrade consists of presentations like Tuesday’s, which included a video called “Seconds Save Lives” featuring local law enforcement officials as well as former MERA president and current supervisor, Mr. Kinsey. The short film underscores the radio system’s inter-agency nature—spanning countywide police, fire and public works departments—as crucial to safety. The system is aging, public officials say in the video appeal, and it needs updates in order to continue to serve the public, fast.

MERA officials said they have begun planning for a next-generation emergency radio system because the current system is nearly 10 years into a 15-to-20 year shelf life, which they say is standard.

As the system ages, Ms. Cassingham said, “We don’t want to get to the point of any dropped call. Any good stewards of anything need to plan for the future.”

The radio expert noted that the need for a new system with new radios may be in part a factor of big radio business—planned obsolescence from manufacturers.

“The other part of this is that Motorola is always the big player in providing this equipment,” he said. “I may be being a little too skeptical, but I’ve seen it happen again and again. Motorola will say, ‘We’re not supporting that anymore, we’re not providing any spare parts for your system.’

“Radios can last for a long time,” he said. “I’ve got radios that are literally 70 years old and work fine.”

Mr. Jeffries said that while Motorola is the current vendor, no vendor has been selected for the next-generation system. As plans unfold, MERA will invite vendors to bid on supplying the new system.

MERA will present the plan to each of the 24 other member agencies now through November, but at this tender stage, the first responder said that the proposed next-gen system already has an air of inevitability.

Marin is among many major municipalities—New York, Chicago—grappling with the financial ramifications of the overarching reach of Moore’s law, which describes technology’s exponential, seemingly limitless growth trajectory.

“If we all had the same computers or cell phones we had 20 years ago, we’d probably be laughed at a little bit,” Mr. Weber said.