POINT REYES LIGHT

# Plan released for upgrade to emergency radio system

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The county's emergency radio system is getting a major overhaul: the Marin Emergency Radio Authority is proposing the construction of eight new antenna sites and improvements on 10 others as part of an improved next-generation system.

The details of the system are laid out in an environmental impact report released on Friday by MERA, a collection of 25 public agencies that manages the countywide emergency radio system that is the backbone of public safety communication. The authority has been planning an upgrade for the last decade as it seeks to improve communication, increase capacity, comply with federal law and reduce coverage gaps, which exist in the northern and southern corners of West Marin.

The current system, which uses microwaves that require a direct line of site to each other, was designed for a maximum of 2,500 radios and now supports nearly 3,000 radios. Projections for the next 20 years indicate a need for 5,000 radios.

When police, firefighters or public works crews use their radios, their messages go to the nearest tower, which connects back to the network core. From there, the message is relayed via broadband to a dispatch center. In the next-generation system, more channels will be available, shortening wait times for users. The aim is to provide 97 percent reliability and audio quality above a certain standard.

"The coverage we will get from this is better than what we have today," said Dave Jeffries, the MERA spokesman. "But the reality is, with the terrain in Marin, there's no system that will provide 100 percent coverage."

There is another pressure on Marin to upgrade its system. By 2023, the county must vacate the 488 MHz frequency and switch to a frequency of 700 MHz to comply with a Federal Communications Commission order. (Once local governments vacate the 488 MHz frequency, those airwaves will be sold to private users.)

The higher frequency does worse in rugged terrain, but Motorola—the county's current radio provider and the only company to submit a project proposal in 2016—has guaranteed the new towers and equipment would make up for the lost efficiency, Mr. Jeffries said. The 700 MHz frequency also makes the system interoperable with other Bay Area jurisdictions in case of a need for mutual aid.

The estimated $40 million project would be funded by a 2014 ballot measure that imposed a $29 per year tax on single-family homes for 20 years. Expenses include the purchase of new radios, microwave dishes, antennas and other equipment from Motorola.

The current system has 15 linked antenna sites at various elevated points across Marin. In the upgraded system, five of those would be decommissioned while eight new sites would be constructed. Of the eight new towers, three would be in West Marin: in Tomales, in Muir Beach and on Coyote Peak at Walker Creek Ranch. Existing sites on Point Reyes Hill, Stewart Point, and Mount Barnabe would receive new equipment.

The network's core will be relocated from the civic center to the county's emergency operations facility three miles north, which didn't exist when the original system was built in 1998.

Already, MERA has bought radios from Motorola that are compatible with the higher frequency. The radios are dual-band, allowing users to talk on multiple channels so they can use both the old and new systems for a one year-period while Motorola tests the new equipment.

Once the transition period is over, having multiple channels could save space by reducing the number of radios battalion chiefs must carry. Regular operation of the next-generation system is expected to begin in 2023, for a 20-year lifespan.

**West Marin towers**

The proposed antenna site in Tomales sits next to a cell tower site on the Parks ranch, east of town and accessed by a dirt driveway off Highway 1. MERA proposes the construction of a new 75-foot pole that it acknowledges would substantially degrade public views from the scenic highway. The pole would be mounted with two microwave dishes, three vertical poles and five antennas. A 150-square-foot equipment shelter, a generator and fuel tank, and a six-foot-tall perimeter fence would be built beside it.

The environmental review found the impact on views to be unavoidable, but to minimize contrast in the landscape, the equipment shelter, fuel tank and generator would be painted dark earth-tone colors and the chain link fence would be black. MERA considered using shorter towers but determined that the height was necessary to improve coverage and avoid exposing the public to radio frequencies. Construction is expected to last less than two months.

The second site, at Coyote Peak, lies on a hilltop within Walker Creek Ranch, the outdoor education facility owned by the Marin County Office of Education. The location, like all of the new sites, is next to existing equipment: two water wellheads, a couple of sheds and some solar panels. Here, MERA proposes to build a 60-foot pole, a 240-square-foot equipment shelter and a six-foot fence. The equipment would be painted dark and opaque fencing would mitigate view impacts. The steep and bumpy 1.5-mile road to the site would be graded and widened at the

turns, and underground power lines would be installed. Construction is expected to last six months.

At both of these sites, road work would take place during the day and would pause after rainfall to avoid injuring or killing California red-legged frogs, one of several measures MERA is taking to reduce biological impacts to frogs, badgers, owls and birds during construction on these sites.

Within two weeks of starting construction, a biologist would survey the area for wildlife. If a badger den occupied by a female with young is found, construction will be avoided within 50 feet of the den. To the extent feasible, construction will also occur outside bird nesting season, from September to January. If construction does happen during nesting, a biologist will determine a no-disturbance buffer zone around nests ranging from 25 to 500 feet, depending on the species and its protection status.

The Muir Beach location, adjacent to the scenic overlook, is the least remote of the three proposed West Marin sites. It is also a potential location for a new Muir Beach fire station, but the only infrastructure on the property now is a water tank owned by the Muir Beach Community Services District.

Just east of the Golden Gate National Recreation Area's parking lot and public restrooms for the overlook, MERA proposes a 60-foot pole mounted with three vertical antennas that would bring its apex to 70 feet. Additional improvements include a microwave dish three feet in diameter mounted on the existing water tank, a 150-square-foot equipment shelter, a six-foot perimeter fence and an underground powerline. All of the equipment, including the pole, would be painted rusty-brown to match the color of the restroom, except for the front of the microwave dish, which cannot be painted.

At all three of the new sites, the immediate area around the proposed tower would be graded, and a deep foundation would be built. A tribal monitor with the authority to stop work would be present during excavation to watch for the appearance of tribal cultural resources.

Existing sites at Point Reyes Hill, Stewart Point, and Mount Barnabe would also be upgraded.

On Point Reyes Hill, just south of Mount Vision, a 29-foot wooden utility pole would be replaced with a 40-foot steel monopole to support two new three-foot microwave dishes. A 35-foot monopole north of Bolinas at Stewart Point—which MERA built in 2006 after the authority determined that a tower at the Bolinas fire station would have a significant visual impact—would have its foundation reinforced and the microwave dishes replaced. A 25-foot monopole on top of Mount Barnabe, which is dwarfed by a separate 70-foot lattice radio tower, will undergo the same upgrades.

Even with the new towers in northwest Marin, the telecommunications company projects that large coverage gaps will persist in West Marin. Areas around Chileno Valley and in the seashore would not be covered. But, due to the low number of calls for service in those areas, building more towers to address the dead zones wasn't financially practical, Mr. Jeffries said.

*The Marin Emergency Radio Authority will hold a public hearing on the draft environmental impact report for the next-generation radio system at 6 p.m. on Thursday, Oct. 10 in the Board of Supervisors chambers. Written comments will be accepted by email at mera-deir@marincounty.org until 4 p.m. on Monday, Oct. 21.*