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Photo Courtesy of
Wildland Residents Association

The National Fire Protection Association says 88% of all fire departments are either whole or partially volunteer. The San Marcos Pass group here trains to assist with both aerial and land-based responses.



Photo by Bill Talanian
Government Consultant

Michael Williams has served as executive director of Wildland Residents Association and training officer for the volunteer fire department for several years. He's a member of the Tri-County Training Officers Association (Cal-Chiefs) as well as deputy director with the California State Fire Fighters Association (CSFA), where he also serves on the committee for volunteers. Williams is a founding member of the local public information officers association, EPIC, and is also a member of the American Society for Industrial Security. He is a former police officer who now conducts corporate investigations and security consulting. Williams also serves on the board of directors for the American Association of Information Radio Operators (AAIRO).

San Marcos Pass, California

July 2005

Wildfires are on California's shortlist of worst natural disasters. Six hundred homeowners near San Marcos Pass can attest to that. They've been battling the threat for many years. Santa Barbara County's rugged southern coast, where the Pass is located, definitely falls into what the state calls its "Wildland Urban Interface" danger zone.

Residences near the Pass sit high above sea level, relatively isolated. Winding mountain roads inhibit evacuations. To help combat their peril, just over 20 years ago, the homeowners organized to form the Wildland Residents Association. WRA subsequently created (and now oversees) the San Marcos Pass Volunteer Fire Department, an all-volunteer group with initial attack capabilities as well as providing prevention services to the mountain community.

Michael Williams, WRA director, among other improvements, spearheaded the addition of SMPERS 1040 AM, the San Marcos Pass Emergency Radio System. an [ALERT AM System](#).

Below is a detailed account of how Williams, using a collaborative approach and professional follow-through, is putting the system into place. Perhaps his experiences can inform yours.

Read the case study top-down; or, go directly to specific sections from links immediately below:

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Problem Definition - [Return to section links, above.](#)

Fires had caused residents of Santa Barbara County severe problems, especially related to traffic and evacuation routes. They became frustrated with the lack of information from commercial radio broadcasters. National broadcasting conglomerates had bought out many of those stations and, as standard practice, set them to auto-pilot during weekends, without staff on hand to report emergency news or alerts. Such stations, as a rule, cover vast areas and may or may not be inclined to interrupt commercially-sponsored programming with information unique to remote areas, such as San Marcos



Photo by Lyn Parra
Code 3 Communications

In addition to its Emergency Advisory Radio system, the San Marcos Pass VFD has 1 International Type-2 engine, 2 Type-7 brush patrol trucks and is in the process of obtaining 2 new compressed air/foam units to enable the department to provide state of the art protection.



Photo by Bill Talanian

Two 72" by 42" signs will be placed on State Route 154, one in each direction of travel.



Photo courtesy of Marta Bortner
California Transportation Department

Related Links

See Williams' article "[Filling an Important Communication Gap](#)," published by the International Association of Emergency Managers.

[Alert Stations across America](#)

SIDEBAR

Pass.

Research - [Return to section links, above.](#)

Non-commercial, limited-range stations, on the other hand, operate on dedicated public service channels. As opposed to disc jockeys, they are run by emergency managers themselves who have direct access and control over content. Broadcasts can be programmed to repeat instructions and offer news updates as long as necessary during brush fires or other disasters.

Michael Williams' research on behalf of Wildland Residents Association revealed that these types of AM-band radio stations, already in use by [national parks](#) and in [communities across the country](#), could be the answer. Initially conceived and developed as an experimental broadcast medium for Yellowstone National Park in the early '70s, the radio stations and the technology utilized matured from frail tube-type transmitter equipment and audio tapes to totally reliable and fully solid-state transmitter equipment with digital audio that can be recorded/re-recorded from a distant location via dial-up connection. They now also can incorporate live broadcasts.

The stations operate on dedicated public-service frequencies (530-1700 kHz), administered by the Federal Communications Commission. Through specific-area message encoding technology, they can be programmed to automatically receive and re-transmit national emergency and weather alerts to the specific areas being served. (Relevant county codes are programmed in.) They can be set to interface with [flashing signs](#) and community siren systems to encourage listenership. Designated emergency authorities can, via land line and cell phone, call in live or recorded announcements, such as evacuation instructions.

Emergency Advisory Radio stations can be fixed or mobile and set to run individually or in [synchronized groups](#) to cover large areas. Each station, according to the FCC, may propagate to a radius of 5 miles from its transmitter/antenna system in all directions (equates to about 75 square miles).

However, Williams discovered, there is only one supplier in the country that offers stations with all the features: Information Station Specialists.

Solution - [Return to section links, above.](#)

The community decided it would establish its own San Marcos Pass Emergency Radio System (SMPERS) on 1040 AM to include a fixed and two mobile Emergency Advisory Radio stations. Each station in this 3-station grouping will be able to transmit its own broadcast on its own frequency. Or, all the stations can be synchronized to simulcast the same messages at the same time on the same frequency. Each mobile station has a dual-frequency capability.

Caltrans will erect reflective highway signs on both sides of San Marcos Pass, announcing the station.

Residents can view information about SMPERS at [WRA's website](#).

As a testament to Williams' collaborative ability, local commercial broadcasters, when on duty, also announce the SMPERS call sign and frequency for emergencies.

Williams coordinated the SMPERS project by approaching the Santa Barbara Fire Safe Council for program oversight to avoid inter-agency politics and gamesmanship.

To a few naysayers who expressed doubt that WRA (a non-profit corporation) would be able to get a FCC license, obtain funding, build a station or successfully run it, Williams says, "Ultimately, the WRA did it all without a hitch." The big and real supporters, he believes, are the California Transportation Department (Caltrans), California State Highway Patrol (CHP), local Red Cross, county sheriff's office and the Fire Safe Council itself.

"AM radio is our next step in improving overall communications during emergencies," emphasizes Williams. "When the

Sample Broadcast Text

"You are listening to the San Marcos Pass Emergency Radio System, WQBT795, operating on the frequency of 1040 kHz on your AM dial, from the top of the San Marcos Pass in Santa Barbara. This station is owned and operated by the Wildland Residents Association, Incorporated, San Marcos Pass Volunteer Fire Department in cooperation with the Santa Barbara Fire Safe Council.

"The San Marcos Pass Emergency Radio System serves the San Marcos mountain communities of Painted Cave, San Marcos Trout Club, Rosario Park, Paradise Canyon, East and West Camino Cielo as well as Highway 154 between Foothill Road and Paradise Road.

"This station will broadcast emergency information, weather alerts, special road construction announcements and road closures. In the event of a fire emergency, tune to this station for current fire updates, fire activity reports, evacuation notices and road information as provided by local authorities.

"This station will also automatically re-broadcast automated state and federal emergency broadcast messages through the NOAA/EAS System.

"The San Marcos Pass Emergency Radio System is made possible by a generous grant from the Wood-Claeyssens Foundation and the support of the San Marcos Pass mountain community.

"For more information regarding the San Marcos Pass Emergency System, please call the Wildland Residents Association at 964.7194 or visit our website www.WildlandResidents.org. Letters may be addressed to the Wildland Residents Association, 5655 West Camino Cielo, Santa Barbara, California 93105 (repeat)."

[Download a sample broadcast MP3 file.](#)

power goes out and telephone lines are down with no computer and everything stopped, residents can turn on their AM radios to hear emergency advisories. During an emergency, designated people from state/local public service agencies call an answering-machine line and immediately put an emergency update on the air to the community."

Equipment - [Return to section links, above.](#)

"Our fixed ALERT AM station," explains Williams, "is up and running atop Painted Cave at San Marcos Pass in Santa Barbara, 2,800 AMSL, with a clear overview of the San Marcos Pass (State Route 154) and the mountain communities. The transmitter and antenna are in an isolated-style setup. The transmitter is so small it sits in a weatherproof box about the size of a bedroom dresser. And the antenna looks like little more than a whip antenna on a telephone pole with some wires hanging off it. This is the same location of the community's VHF repeater, so necessary utilities and phone services are already in place. It can be monitored on any vehicle or portable commercial AM radio. We plan to add two trailer-mounted mobile stations soon. Grant funding is in process," Williams says. (See "The Research" section, left, on this page, for a summary of system features.)

When asked if he encountered any problems during the installation, he responds, "None. The equipment arrived complete and was quickly adapted to our requirements. The antenna was challenging to tune. I suggest that anyone taking this project on should plan on utilizing a good electrician and/or radio tech, if they want to do it right. However, the truth is, just about anyone could put this station up and get it on the air. We just wanted perfection, and got it!"

The only complaint Williams says he has received since the system first became operational is that the signal cannot be heard over as wide a range as a commercial broadcasters'. "It is sometimes difficult for the public at large to understand that commercial broadcasters covering wider areas often cannot attend to unique concerns and interrupt commercially sponsored programming to repeat emergency instructions to the extent needed. This is the advantage of specific-area broadcasting," Williams emphasizes.

Following are Williams' comments on the system supplier: "Information Station Specialists is great. The equipment is first class. I have purchased millions of dollars of communications equipment over the last 30 years. Information Station Specialists is one of the best vendors ever. The equipment is also well documented in the service manual. Aside from the technical issues of antenna tuning and signal readings, it is a true plug and play system."

WRA installed the system themselves. "The process was not difficult at all. The only problem we ran into was the weather," Williams adds.

Bill Baker, president of Information Station Specialists, assesses this customer's performance, thusly: "The Wildland Residents Association serves as a clear example of implementing our Emergency Advisory Radio solution in a competent and cost-effective manner."

Funding - [Return to section links, above.](#)

Williams admits funding is a big deal. "Even though the cost per station is relatively minimal in the overall scheme of things for most organizations [\$19,000-24,000, including license and installation], discretionary funds are hard to come by for most public agencies." "The funding is out there," continues Williams, "but writing grants requires skill, the ability to justify a program and associated costs."

Williams believes that if more emergency managers thought "outside the box," they could build Emergency Advisory Radio Station costs right into other public projects, such as new schools, fire stations and city halls. "These agencies," he concludes, "often don't think twice about dropping millions of dollars to switch over to 800-Mhz-trunked radio systems."

[Download a copy of Williams' actual system proposal.](#)

Accountabilities - [Return to section links, above.](#)

WRA installed the ALERT AM system itself, using Information Station Specialists instruction manuals and live phone technical support. Information Station Specialists offers both [partial and turn-key installation support](#), also, if needed, and has a network of reps across the country who can visit sites.

Though, in essence, the WRA owns and manages the station itself, Michael Williams regularly taps local officials and broadcasting talent to create emergency broadcasts. Success is assured via interpersonal interaction with these folks and a set of well-written policies and procedures to run on-going operations. Williams is the driving force behind establishing these aids. [See example.](#)

As stated above, the Santa Barbara county/city fire departments, Caltrans, the state highway patrol, local Red Cross and sheriff's department help actualize the WRA's vision for improved emergency communications through the Emergency Advisory Radio system.

Explains Williams, "Our radio station SMPERS is officially on the air on 1040 AM 24/7, ready to provide updated information, as soon as it becomes available. The CHP [CA Highway Patrol], county fire agencies and Caltrans [CA Department of Transportation] have direct access to make emergency announcements. We usually run about 10 minutes of broadcasting that repeat as needed."

Because a number of people are involved, it's important to have someone visibly in charge. Right now, Williams is the "go-to" guy.

"The stations have to be run like a business," he says. "Public safety won't work otherwise. We interact with local agencies in a professional manner. Also, emergency announcements affect people's lives. Someone could get hurt, if we screw up; or, we could get sued. So we keep records of our broadcasts. We also have documented policies and procedures ([download example](#)) "It can't be a competition with commercial broadcasters either. I've found they can either be your friend or you enemy; there's no in-between and no competitive stance. We work with them in a professional manner so they encourage listeners in our area to tune to our stations for instructions."

Williams likes to work with local radio talent to create regular programming. As it happens, his uncle, Jim Williams, a professional broadcaster most of his life, serves as the voice of SMPERS. "Les Carroll and Geren Tiltz from KZSB-1290 AM handle professional recording and sound uploads. Mark Ward is the voice and producer behind the Santa Barbara Sheriff Department's spots. The station is also connected to the California Office of Emergency Services for broadcasting emergency messages to the Santa Barbara area automatically," Williams recounts.

This level of involvement from government officials and local talent reveals Williams' proclivity for collaboration to ensure valid broadcasts listeners can rely on.

Broadcasts - [Return to section links, above.](#)

The SMPERS 1040 AM (call sign WQBT795) system transmits emergency information, weather alerts, special road construction and closures as well as current fire updates. The first official emergency use of the station was for a rock slide on Old San Marcos Pass Road in the same area as a big slide last January. For this first use, the director of public works called Williams at home after hours and asked him to put the information on the air. "This was a big win for us on several fronts," Williams says.

"The station was also used during a major evacuation drill in Mission Canyon. Bruce Carter, manager of Santa Barbara County Office of Emergency Services, requested support," recounts Williams. "The drill was a joint exercise with the City of Santa Barbara and the County of Santa Barbara as well as the Red Cross, ARES, other local support groups and SMPERS." Williams plans to reserve station use for serious emergencies, not "scream 'Fire' for every little call."

"The phone interface for creating and updating broadcasts works really well," Williams adds. "For example, Marta Bortner of Caltrans calls in her broadcasts from afar. They sound like they were done right in a studio."

"At this point," enjoins Williams, "we like the local broadcasting concept, where each station can have its own local information. Some programming might be uniform on all stations, however. We are planning to use the same frequency, so it becomes the common emergency go-to frequency." (It should be noted, here, that the mobile stations Williams plans to add can have dual-frequency capability, so other broadcasts could run on other frequencies if needed.) See sample broadcasts in the "Sidebar," left.

Public Relations - [Return to section links, above.](#)

Just as important as acquiring funding, picking/installing a capable system, and running credible broadcasts is marketing the program, so the Emergency Advisory Radio System can achieve its intended purpose.



"Name recognition is important," shares Williams. "We created a logo that goes on everything, i.e., our website, banners at education sessions, such as Red Cross functions."

Media coverage is an aspect Williams didn't overlook either. "We've had coverage we couldn't have bought, NPR for example." And Santa Barbara County News said, "Locals can tune in to WQBT795 to get updates on everything from road closures and brush fires to local weather. More importantly, it can provide emergency information about bigger fires, mudslides and evacuations." Download the article to see what's possible in local newspapers.

In addition, the WRA plan incorporates strategically placed highway signs (provided by Caltrans, see "The Solution," above left) to tell motorists within range about the broadcasts.

Conclusions - [Return to Section Links above.](#)

Williams advises other communities considering an Emergency Advisory Radio System: "Have a plan. Have a goal. Justify your program in writing. Be professional and work with everyone. Do not upset the commercial broadcasters. Set policy, and provide supervision. Do not just plug it in and take a vacation, assuming it is all going to run on automatic.

Programming takes thought, planning, script-writing and some professional talent, if you want to sound professional and have credibility with the public. Also pay attention to liability. Keep records; and keep your scripts. Note the name and time of any emergency information. We write scripts and keep them for the record. Professional recording is done to keep the station sounding fresh and credible. Too many umms, ands and uhs will sound amateurish. "The stations are a public relations and marketing tool. We might not be able to advertise, but that does not mean we cannot give a professional voice to our organization. The result is a positive public image that helps support all our programs."

Williams believes that involving local officials goes a long way toward ensuring success. "Because of our approach, our relationship with other agencies and our credibility improved. The ability to provide local announcements and emergency information also improved, significantly, for an overall better result."

"One last thought," says Williams. "These stations are great, but they are only as effective as those managing them. It's not wise to put a station on the air (just to squelch community complaints about a lack of information) then abandon it because of the time involved in keeping programs current. Anyone purchasing a station should be committed to it to receive the true benefits of the product."

The broadcasts fill an important communication gap for residents and visitors of San Marcos Pass. "Not bad for a group of volunteers," Williams notes.

No, not bad at all, the community-minded would likely respond. END

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