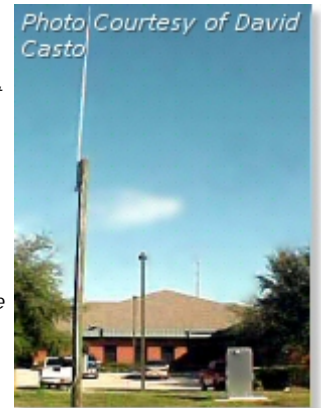


## FLORIDA ACQUIRES LARGEST EMERGENCY ADVISORY RADIO NETWORK

**Spring 2004:** Residents and tourists of the densely populated Clearwater-Saint Petersburg community live in ever-present danger of hurricanes. The Pinellas County Emergency Management Agency wants to be able to alert them when needed. Below is a case study that looks candidly at what it took to achieve Phase 1 of the synchronized radio system project, what was learned from that experience and what is planned to complete the job.

**Fall 2004 Update:** Pinellas completed an array of fixed, synched stations and is obtaining a custom RoadRunnR Portable Advisory Station to ensure coverage of the entire county. The portable system will be used as a synchronized system in a fixed location under normal circumstances. In case of failure of one of their stationary sites, they will use the trailer at that site until repairs can be made. If there is an event requiring coverage by a system elsewhere they will use it as a stand-alone system. See how Pinellas is presenting their radio system to the public: [www.pinellascounty.org/ccnews/09\\_03\\_04.htm](http://www.pinellascounty.org/ccnews/09_03_04.htm). Contact David Casto: [dcasto@co.pinellas.fl.us](mailto:dcasto@co.pinellas.fl.us).

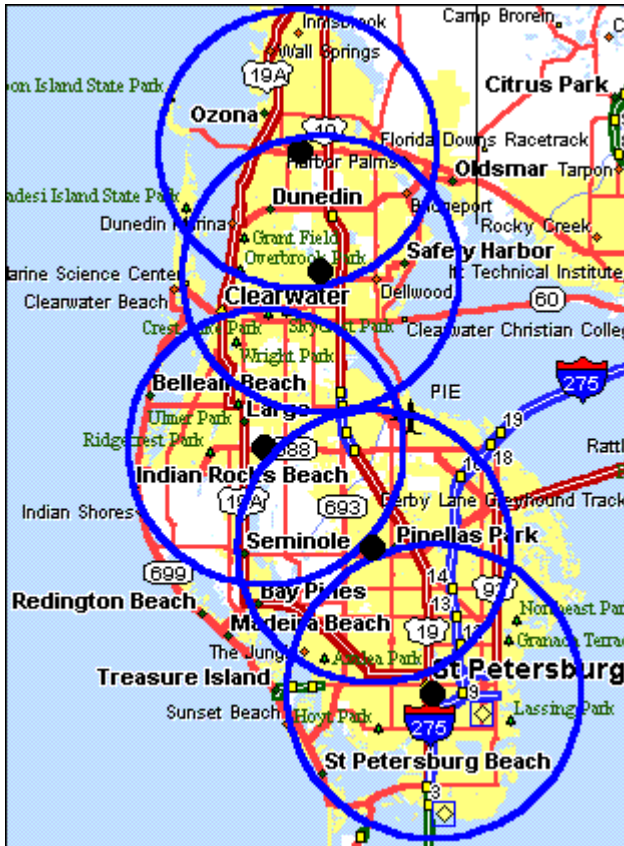


Antenna/Cabinet Setup  
St. Pete Fire Station

### Why was the decision made to create a network of AM radio stations?

David Casto, the emergency coordinator who led the Pinellas team on the project, recounts the decision-making process this way: "The County first investigated the feasibility of buying a commercial FM radio transmitter for sale locally. It was too expensive. Then we looked at low-power FM. Licensing became an issue. Since the FCC [Federal Communications Commission] was only granting one license for each county, we turned to low-power AM radio, after hearing about some successful stories of their use. The City of Tarpon Spring, located in our county, operates one station on 1610 kHz that has become very popular. Also, some of our neighboring counties gave us positive feedback on their mobile and fixed AM radios. So we decided synchronizing a network of transmitters was the best, most cost-effective way to go."

Provisionally, FCC guidelines support use of low-power AM radio stations for the type of emergency communication system Pinellas had in mind and, in fact, will only grant licenses to government entities, such as the Pinellas community, to broadcast noncommercial safety, visitor and travel information.



### Why was the ALERT AM Emergency Advisory System chosen?

Simply put, "The system meets our needs," declares Casto.

Introduced just this year, the ALERT AM Emergency Advisory Radio System is the only low-power synchronize-able AM system designed expressly for community emergency use. Proof-positive: it incorporates siren alerts as an option along with National Oceanic and Atmospheric Association (NOAA) weather radio broadcasts targeted to specific counties. Also, ALERT AM can be programmed to automatically broadcast pre-recorded messages with live cut-in overrides if needed.

### How was the project funded?

"Funding was split between [our] general fund and state emergency grant monies," shares Casto — a fairly typical arrangement.

### How will the system be used and managed?

Pinellas County Department of Emergency Management owns the system with assistance from the Public Affairs Department. Casto provides this summary: "Daily, we assign a duty officer to record messages and assemble the playlist. During an emergency, such as an approaching hurricane, we will broadcast preparedness instructions, evacuation instructions, shelter locations and road/bridge status. After the event, we will broadcast recovery and disaster-relief information. During non-emergencies, we broadcast national weather radio, disaster preparedness information, mitigation tips, public-service announcements and local activities. Currently, we advertise our radio frequency through the local broadcast and print media. Eventually, we will post signs, advertising our frequency along major roads."

### What was the biggest problem and how was it resolved?

"Our biggest obstacle was finding five site locations [for the many synchronized stations planned]," says Casto. Three synched stations were installed for Phase 1. (See a schematic and description of the network layout near the bottom of this page.)

The emergency coordinator describes the intricacy of this issue and how it was resolved: "Pinellas is a densely populated county, and property is very difficult to obtain. We had to rely on finding property owned and operated by other governmental agencies. Although we may work under one government umbrella, each department/agency has its own turf, which we (Emergency Management) have no authority to use without permission.... We resorted to squeezing our transmitters into any space available."

## What wisdom was gained for others considering a similar project?

As with most new ventures, the parameters were less than ideal. All involved in this project admitted to being challenged by the communication requirements. Also, an unusually tight deadline (imposed by a funding cutoff date) added a layer of stress to the job. Explains ISS president Bill Baker, "Normally a project of this magnitude requires six months. The Pinellas/ISS Team actually accomplished it in half that time." Another reality: the working relationship had to be long distance with Pinellas County in Florida and ISS based in Michigan.

Initial-phase services provided by ISS included planning assistance, licensing, site preparation, system setup, onsite training and maintenance. Pinellas project coordinator David Casto says he was surprised to learn that even with turnkey installation, he had to personally perform certain tasks that only a Pinellas person could do — for example: interact with phone-service providers and electrical contractors who needed access to the site and authorization to proceed.

Retrospection often lends clarity to previously murky views. David says he learned that a basic understanding of the steps in the process for employing this technology certainly helps. "Although we knew what we wanted, we did not know what was needed to make it happen." He advises others considering this type of system to, "Learn what the system can and cannot do.... Assemble a project management team with representatives from ISS, property owners, telephone service providers, power company officials, purchasing representatives, building officials and users. Go over the purpose of the system, its specifications, connectivity and concept of operations.... Develop a schematic showing locations, connectivity needs and milestones...."

Upfront, typically ISS conveys to clients conditions necessary for frequency selection and adequate site setup; as David admits, "ISS cannot do [even turnkey] work until you have a place for them, etc. It may be necessary, for example, to visit a location and test transmission there to get a clear picture of what will actually work." ISS affirms that it's important for customers to understand these aspects, so expectations can be met.



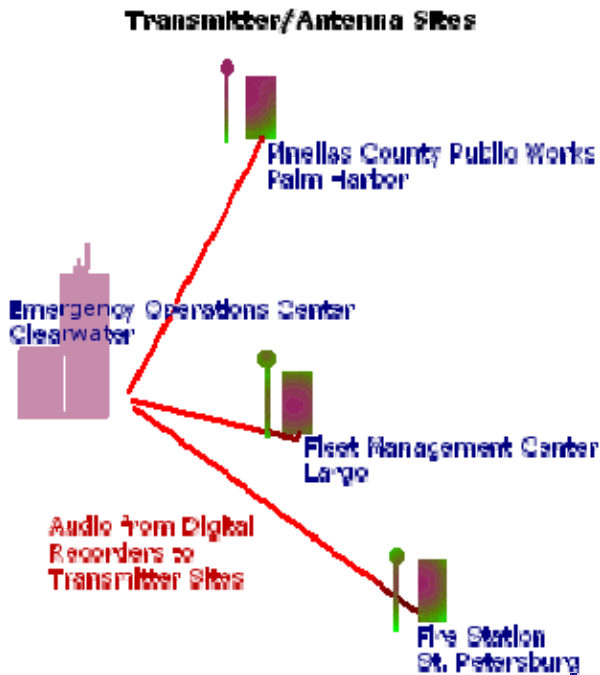
## What does the future hold?

This fall, Pinellas County Emergency Management Agency will add two more stations to its RealTIME Audio Synchronization network to ensure complete coverage of the geographic area in its realm. Upon completion, this synchronized emergency system will be the largest of its kind, anywhere.

## Site Preparation

Work to prepare the three Pinellas County station sites included antenna pole-setting, shallow trench-digging at antenna bases for groundplane installation, forms-building and cement-pouring for weatherproof cabinets to contain system electronics. In a special turnkey arrangement with Pinellas County, ISS remotely managed the site preparation work of a local contractor in Florida, then followed through, installing system electronics for the first three stations.

In discussing the job, ISS field technician Tom Coviak acknowledges Pinellas County people on the scene: "Gary Vickers with EOC was helpful with installation of the cellphone and weather radio antennas on the rooftop of the EOC [Emergency Operations Center]. These antennas were critical. Gary allowed ISS to use an existing run of coax from the basement where the control room is to the roof, which allowed ISS to move installation equipment without delay. Also, Dave Casto provided these photos via email for ISS review before the visit." See more about ISS Installation Assistance.



## System Layout

At Pinellas County, the EOC houses the digital recorder, which Pinellas' emergency managers control remotely by landline telephone or cellphone connection. The distribution amplifier to boost the audio level sent to the transmitter sites is also located at the EOC. Working in conjunction with the digital recorder is the weather radio SAME interface. This allows the EOC to broadcast weather radio from NOAA. The transmitters, with power management interface, back up batteries in the event of AC power loss. Phase 1 antennas are located at the sites shown (*left*). Costs can be contained in how stations are laid out. Following is a typical setup:

### "Host" Site Elements

- GPS Clock
- TR.6000 Transmitter
- Recording Device (AP.55, IP.8)
- Distribution Amplifier
- Power Management Interface
- Batteries
- Weather Radio (SAME interface)
- Antenna

### "Satellite" Site Elements

- GPS Clock
- TR.6000
- Power Management Interface
- Batteries
- Antenna

**NOTE:** Regarding messages and use of RealTIME Audio Synchronization: only one recording is advisable for RealTIME stations, because they are on the same frequency and would interfere with each other. However, a community may have more than one station, as long as the stations are on different frequencies. An instance of 2 different stations with different messages is, drivers who cross the Macinac Bridge (in Michigan) hear one message on k530 and a different message when returning, transmitted on k1610. The stations are not synched.