

City of Miramar, Florida Uses an AM GPS Synchronized System to Communicate to Residents

When the City of Miramar decided to implement an information-based system to communicate to residents, they began investigating radio frequencies to broadcast their messages. They were aware of another local community that used Highway Advisory Radio (HAR) to broadcast messages about city events as well as parks and recreational activities. The challenge for the City of Miramar, however, was to find a system that could broadcast messages throughout the entire city, not just in a localized area such as a park or only one section of the city.

The answer? The City of Miramar, Florida is using an AM transmitter with advanced GPS technology to communicate messages to its residents. The system was provided by Vaisala, Inc. The Vaisala HIS Highway Advisory Radio system utilizes an AM radio frequency to broadcast messages to motorists, residents or event attendees. The messages typically cover a four to six mile radius, and are often used for safety information, local points of interest, public events, construction zones or frequently congested traffic areas. The City of Miramar researched their options for radio stations (AM and FM) as well as a system that would synchronize their messages throughout the entire city. During the City of Miramar's research, they came across the HIS Highway Advisory Radio system, which was the only system capable of the synchronization that the City of Miramar desired.

The GPS synchronized system allowed the City of Miramar to have seamless broadcast coverage throughout the city with no interference between the overlapping signals. The City of Miramar is about 13 to 14 miles long, but only about 2 miles wide. They initially purchased two stationary HIS Highway Advisory Radio (HAR) systems, and shortly thereafter added a third system to complete their coverage.

All three stationary HAR systems are linked together using GPS technology. HAR systems using GPS acquire a signal from three or more satellites; this provides a highly accurate time source, which is used as a reference point. Using the GPS signal allows the frequencies from multiple transmitters to be synchronized,

and stay phase-locked indefinitely. The audio is then synchronized using the same GPS signal, allowing all the radio stations in the array, to launch their messages within 1 millisecond of each other. There is no limit to the number of transmitters that could be used in this system. By having a decentralized system such as this, communications costs are minimal. Using a GPS synchronized array of HARs to cover a large area seamlessly also provides for scalability. As demand for coverage increases, additional transmitters can be added to the array to increase coverage.

The City of Miramar placed the HAR systems at each end of the city as well as one system in the middle. By using the GPS synchronization, there is no signal interference or cross-over messages in zones that overlap. The broadcast coverage is as clear from one end of the city to the other, and the same message is heard by residents across the city. The residents and motorists in effect, hear one signal covering their entire city.

The City of Miramar uses the GPS synchronized HAR system to inform residents about upcoming events, parks and recreation activities, announcements about traffic, and general safety messages. They even used the system during hurricane Katrina when it passed over Florida. Residents of Miramar can hear messages any time they tune into AM 1280. The city changes the messages as regular events change, and they keep a library of safety messages and rotate them as well.

“The system is definitely a value for the City of Miramar and its residents,” reports Tom Good, Administration Officer for the City of Miramar. “Miramar is one of the top three fastest growing cities in Florida and has quickly gone from a small, sleepy town to a mature city. The GPS synchronized system is a solid form of communication for our community.”

“In addition, AM radio was a timely solution for us, and we are elevating the awareness of the station through marketing. We are placing approximately 30 signs throughout the city, information about the station is available on the city’s web site, and we plan to get feedback from residents through customer satisfaction surveys we will send out in the future.”

The GPS system is still in its infancy for the City of Miramar and it plans to expand use of the product by working with the fire department to broadcast messages about fire prevention, and have even considered using the frequency for elected officials to communicate city related messages.

“The product is definitely a value to our city and its residents,” adds Good. “We are very pleased with the product and the technical services support we received from [Vaisala] was over and above our expectations.”