

Review of successes and challenges with regard to 9-1-1 during times of disaster:

As a 9-1-1 District in the state of Texas, Greater Harris County 9-1-1 Emergency Network (GHC 9-1-1) priority during a disaster remains the same as it is in normal operations; insure the delivery of 9-1-1 calls and location information in Harris and Fort Bend counties. Our local experience with Allison in 2001 enabled GHC 9-1-1 and our fellow Public Safety Agencies to identify inadequacies in our systems and operations that we continue to benefit from. The 9-1-1 community in Texas is very active in reaching out to our fellow 9-1-1 entities in times of disaster. GHC 9-1-1 participated in restoration of critical services in the Beaumont Orange area after hurricane Rita.

Successes Highlights:

- GHC 9-1-1 has recently upgraded our wired IP network increasing bandwidth to allow for Next Generation services and applications. We are also in the middle of adding a secondary wireless network link to all sites via Microwave or 3G. Traditionally cable cuts have been the most frequent cause of interruption of service, adding the wireless connectivity will allow operations to continue through this type of event.
- GHC 9-1-1 has provided IP PSAP Network connectivity for over 10 years. This network is heavily leveraged now on the maintenance and support aspect of our operations. GHC 9-1-1 is one of the only 9-1-1 entities in the nation that delivers ALI (Automatic Location Identification) native IP from end to end. The IP Network is also used for disaster recovery and system monitoring from GHC 9-1-1's NOC (Network Operations Center).
- GHC 9-1-1's NOC plays a vital role in times of disaster. From one central location all systems are monitored and can be accessed remotely for issues not requiring a physical presence. It also gives us a head start on activating any contingencies to insure 9-1-1 calls continue to be delivered throughout an event
- Our Headquarters is a secure hardened facility with systems large enough to act as a backup 9-1-1 call center for our largest PSAP's including several smaller municipalities at the same time. The new building also houses the core of our network and critical systems in dual tier 4 Data Centers
- GHC 9-1-1 has deployed common and standardized 9-1-1 Call Taking equipment configurations at all of the 36 9-1-1 Call Centers in Harris and Fort Bend County. This simplifies training and streamlines support and maintenance. In times of a disaster Call Takers can easily relocate to any GHC 9-1-1 Call Center and handle calls.
- GHC 9-1-1 provides a capital replacement program for all systems on a 5 to 6 year rotation ensuring the most current systems and minimizing MTBF (Mean Time Between Failure), keeping systems reliable during a disaster.
- All Call Centers in our district are powered by GHC9-1-1 provided UPS's and all have a minimum of 1 ½ hours of battery runtime. This allows time for contingency rerouting, or ample time for dispatch and repair. GHC 9-1-1 can also deploy generators if a Call Center generator fails.
- GHC 9-1-1 provides 1st tier support of all 9-1-1 systems. This includes configuration, installation and ongoing field support. A group of dedicated GHC 9-1-1 Field Specialist keep our 9-1-1 systems operational. GHC 9-1-1's entire technical team is staged before any known threats and can be activated quickly via our ENS (Emergency Notification System) on any threats that require an unexpected response.
- With the size of our network and large call volume Call Centers we still look at the legacy 9-1-1 system as a positive. All of our Major Centers are dual trunked between two central offices and the distributed call delivery to 36 Call Centers allows for flexibility in our contingency plans.
- GHC 9-1-1 can deploy multiple mobile 9-1-1 restoration units/systems quickly to restore service after a threat passes.

Challenges Highlights:

- The single most visible challenge to our systems is the legacy systems at the core of our 9-1-1 network. GHC 9-1-1 has implemented contingencies that will restore service to locations served by the same Central office of the citizens if the core were to fail. It should be noted that there has only been one Major core failure in the last 18 years and it was not caused by a natural disaster.
- While GHC 9-1-1 provides UPS power for all systems we do rely on the Generator power that each agency provides. Sometimes these generators are not exercised regularly under full load. We do try to work with our different locations to be sure their Generators are ready throughout the year. GHC does have the ability to provide emergency portable generators in the case of a local failure.

Comments on alternative 9-1-1 systems/new technologies (NEXT GEN 9-1-1). More specifically, how will NEXT GEN improve any issues w/9-1-1 during a time of disaster?

- Most of the large 9-1-1 entities in the state of Texas are either implementing or have existing IP networks capable of supporting Next Generation services at the local level. GHC 9-1-1 is currently working with 12 other counties on a regional ESInet solution that could be deployed when necessary.
- Vendors and service providers are still developing systems and services that can utilize these IP networks. Most all of these services are still years away from being deployed.
- Operationally none of the Call Centers in our region are ready to receive these new services. The challenge is working with the Call Centers so they are ready when these new services come on line.

Brief overview of ENS system & its usage; comments on feasibility of utilizing ENS during times of disaster

- GHC 9-1-1 provides a regional ENS (Emergency Notification System) for Harris and Fort Bend Counties. The system is offered to all Public Safety Agencies and is activated via GHC 9-1-1's secure Public Safety Network and Infrastructure.
- The activations are initiated from our Call Centers that are familiar with each city and area. GHC 9-1-1's NOC acts as a secondary activation point if local activation cannot be performed.
- The system is only used for emergency purposes only, this preserves the critical nature of the caller ID so citizens react as needed.
- While there are weather incidents that warrant the use of and ENS system they must be very localized targeted activations. The system is not effective for mass communication, in fact if used in this manner it can have an adverse effect during times of disaster. Other forms of communication like TV and radio are more effective on these mass communications.
- GHC 9-1-1 is implementing a SRS (self Registration Service) on our regional ENS. This will allow for self registration of Cell Phones to accommodate citizens without Land line service. The challenge is that this data is hard to maintain.
- Until ENS systems are able to reach cell phones based on location they will have a diminishing effectiveness as a vital tool for notifying citizens.

GREATER HARRIS COUNTY 9-1-1 EMERGENCY NETWORK

FACT SHEET

Greater Harris County 9-1-1 Emergency Network (GHC 9-1-1) was established in November, 1983. The mission of Greater Harris County 9-1-1 Emergency Network (GHC 9-1-1) is to implement and administer 9-1-1 emergency service—emergency call delivery—for all cities wholly or partially within Harris County and for the unincorporated area of the County. With the enactment of SB621, by the 79th Legislature, the GHC 9-1-1 territory was expanded to include all of Fort Bend County.

In total, GHC 9-1-1 administers service for 49 cities, 2 counties and in excess of 150 police, fire, and emergency medical agencies. There are nearly 50 fully equipped 9-1-1 answering points within the GHC 9-1-1 service area.

The 9-1-1 service established by GHC 9-1-1 in January, 1986 was the first fully enhanced service in the State of Texas. It is the largest 9-1-1 system in Texas and the third largest regional 9-1-1 system in the nation.

Over 9,000 calls per day are made to 9-1-1 in the area served by GHC 9-1-1. Up to 73% of those calls are from wireless phones.

ACCOMPLISHMENTS

Under the leadership of the Board of Managers, GHC 9-1-1 has consistently provided the most technologically advanced 9-1-1 service available.

In 2009, GHC 9-1-1 completed construction and moved into its new headquarters named the Tom Bass Building to accommodate the growing needs of public safety, operations, training, next generation telecommunications, GIS and the in-house database.

In 2009, GHC 9-1-1 expanded its existing in-house 9-1-1 Help Desk to a state-of-the-art Network Operations Center also known as the GHC Command Center where numerous vital operations take place. Highly skilled and certified 9-1-1 specialists monitor and support every facet of equipment functionality throughout the entire GHC 9-1-1 enterprise—network, systems, applications and environmental conditions, while providing virtually non-disruptive service for the nearly 50 call centers.

In 2008, GHC 9-1-1 transitioned the database of nearly 3 million telephone and address records to an in-house self managed database. This provides greater control and ability to process data faster than ever before.

In 2002, GHC 9-1-1 implemented the Neighborhood Early Warning System (N.E.W.S.), a telephone-based warning system that provides participating jurisdictions (cities and counties) with the capability of placing telephone calls placed to their citizens to warn them of dangerous situations (chemical spills, explosions) or hazardous weather conditions. N.E.W.S utilizes the 9-1-1 database which is the most accurate database available and includes non-published telephone numbers.

In 2001, GHC 9-1-1 began a partnership with Intrado, Cross Country Automotive Services, Ford and Veridian to deploy the nation's first fully enhanced automatic collision notification (ACN) system, integrating voice and crash data from third party call centers into the 9-1-1 network telephone infrastructure. This successful project included 500 public safety vehicles throughout 23 police and fire departments.

In 1996, GHC 9-1-1, in conjunction with the Texas Commission on State Emergency Communications (CSEC) and the Tarrant County 9-1-1 District, successfully demonstrated that wireless 9-1-1 callers could be located within 125 meters, the distance mandated by the Federal Communications Commission (FCC) to be available by the year 2001. This project, the Texas Wireless Integration Project, brought together government and industry in a remarkable, cooperative endeavor to prove that technology was available to locate wireless 9-1-1 calls.

In 1995, GHC 9-1-1 was recognized by the Computer World Smithsonian Awards Program for "Visionary Use of Information Technology." This recognition relates to the technology patented by GHC 9-1-1 which holds two patents relating to 9-1-1 technology.

GHC 9-1-1 provides technical expertise and other assistance to local, national and international entities.

The GHC 9-1-1 staff continues to work closely with the National Emergency Number Association (NENA) and other industry related associations.

Board of Managers

GHC 9-1-1 is governed by a Board of Managers appointed by participating jurisdictions and agencies in the territory of GHC 9-1-1 (please see Texas Health and Safety Code §772.106). The makeup of the Board is as follows:

One member appointed by Harris County Commissioners Court (currently Russell Rau, serving as Chairman)

Two members appointed by the City of Houston (currently Dennis Storemski and Vergil R. Ratliff)

One member selected by the Municipalities – (currently Charles Evans, Southside Place)

One member selected by the Volunteer Fire Departments throughout GHC 9-1-1's territory (currently William B. Anders,)

One Non-Voting Member named by the principal service supplier, SBC (currently Robert Perkins)

Funding of the 9-1-1 Emergency Service

The 9-1-1 service in the Harris County area is funded by a 9-1-1 service fee assessed on all local exchange access lines in the GHC 9-1-1 territory. In that area, which contains the participating jurisdictions of GHC 9-1-1, the Board of Managers sets the fee level each year as a part of the annual budget. The fee is invoiced through the telephone bills of customers by all telephone companies and is then transmitted to GHC 9-1-1 to fund the 9-1-1 system.

A wireless 9-1-1 service fee is also assessed per subscriber number per month. These fees are transmitted to the State Comptrollers' Office monthly and are distributed to 9-1-1 entities based on population.