CASE STUDY:

COUNTIES OF SOUTHERN ILLINOIS

NG911 ESInet PROJECT

March 31, 2016

Counties of Southern Illinois

The southern Illinois regional NG911 system currently serves the counties of Williamson, Jackson, Perry, Union, Saline, Johnson, Pulaski, Alexander, White, Wabash, Clay, Richland, and Gallatin.

The 911 coordinators in these thirteen counties had a history of working together long before NG911. The counties were rural and had limited resources, so they helped each other as they implemented Enhanced 911 (E911) in the 1990's and Wireless E911 in the 2000's, held joint training classes so they could split the cost, and met monthly to share information and address common issues.

When the group was first introduced to the concept of NG911, they understood that if they didn't get out in front of the issue in a collaborative way, they would be left behind because they couldn't afford NG911 as individual counties. By approaching the issue on a regional basis they could share costs, improve their ability to handle major events, and qualify for grants. They entered into a formal intergovernmental agreement and became the Counties of Southern Illinois (CSI) in 2006 and, in 2009, incorporated as a 501(c)(3) non-profit with an elected executive board.

Overcoming Roadblocks and Challenges

CSI encountered all of the anticipated challenges, plus a few that were unique to Illinois' regulatory environment. The next several paragraphs highlight these challenges and how they overcame them.

Laws and Regulations

Once the counties made the decision to move forward together as a unified entity, they approached their 911 System Service Provider (SSP), but it wasn't interested in NG911. They next went to the Illinois Commerce Commission (ICC), but were told that the existing statute and regulatory environment prohibited them from implementing NG911 and furthermore, the ICC would not allow them to be their own NG911 service provider.[1] Even though the Illinois Intergovernmental Cooperation Act[2] encouraged the type of cost sharing they were attempting, they had to get special legislation passed to allow a NG911 "pilot project." The authorization to conduct a NG911 pilot project still did not resolve the issue of being their own NG911 service provider. They were forced to shift gears and contract with a company to provide NG911 services.

Despite the new law, neither the Incumbent Local Exchange Carriers (ILECs) nor the ICC recognized CSI as an entity with which they were required to deal:

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[1] Illinois statute allowed 911 service to be provided only by the Local Exchange Carrier and only over copper. Neither statute nor regulation provided for an Emergency Telecommunications Service Board to be a service provider.
[2] 5 Illinois Compiled Statutes (ILCS) 220

- Repeated efforts to get information from the dominant ILEC met with resistance. It wasn't until two years later when they contracted with a 911 service provider that they were able to get the information they needed from the ILEC.
- The ICC required each of the 13 counties to file a separate modification to its 911 plan, because the state would not recognize CSI.
- The ICC required CSI's vendor to apply formally to become a 911 SSP before the state would allow them to proceed with the project.
- While all this was going on, the non-dominant ILEC vigorously tried to stop the project even though it had only a very small presence in a couple of the counties.

Stakeholder Commitment

Another challenge had to do with keeping the stakeholders together as a group. Each county 911 coordinator answered to a local emergency telephone service board (ETSB) made up of police and fire chiefs and politicians. This meant there were some 150 other people unfamiliar with 911 that needed to be kept up-to-date with what was happening not only with the project but nationally with NG911. It required dedication and perseverance to keep the information flowing to these critical stakeholders.

These key stakeholders also needed constant convincing to stay committed and keep writing checks. The latter point became even more of an issue when CSI had to shift from being its own service provider to contracting with an outside service provider. This unexpected turn of events increased the cost of the project, which threatened the cohesiveness of the CSI alliance.

The effort required to overcome the regulatory hurdles, apply for grants, pay the bills and manage the project was too much for some members of the original group, and four counties dropped out. Three of those four abandoned the project after they had committed to pay their share of the local match on a federal grant, which left the remaining counties scrambling to make up the difference.

Funding

None of the CSI members could afford the project if local 911 fees or general tax funds were the only sources of funding. Southern Illinois has high poverty and unemployment rates. The Federal Clean Air Act closed many coal mines and the economy closed most of the factories. The decline in revenues from the 911 surcharge meant that few members had a surplus. It was critically important to supplement what little local funding was available with grants – bringing the project to a successful conclusion depended on it.

For years the only grant money that was secured was a $600,000 grant from the Department of Justice. They eventually received more grant money from several other sources, but they were deep into the project before most of that funding came through. This created an environment of uncertainty that went on longer than it otherwise would have.

At the end of the day, it was their regional approach to NG911 that differentiated them from other grant applicants and put them at the top of the list for funding. If they had attempted to

apply for these grants as individual counties, they would not have been successful in securing adequate funding for their project.

An example of the importance of a regional approach to potential funding sources is their success in securing a BTOP grant through a partnership with Clearwave. Clearwave is a facilities-based Competitive Local Exchange Carrier (CLEC) in Illinois. Clearwave applied for funding from the Broadband Technology Opportunities Program (BTOP) during round one of the grant program, but was unsuccessful During BTOP round two, Clearwave submitted another application – this time adding the regional 911 ESInet project. It was the inclusion of the regional ESInet project that made Clearwave's second proposal much more attractive to the funding entity. They got the grant, a portion of which paid for connecting all of the CSI PSAPs to the ESInet ($4 million) and also paid for the data center equipment (1.2 million).

Cost Allocation

Determining the fairest way to allocate costs was also a challenge. For the most part, they simply divided the cost by the number of counties, but some counties had one PSAP while others had multiple PSAPs; most PSAPs had two positions, but one county had five. Furthermore, the population varied from one county to another.

Annual maintenance on equipment is divided equally among the CSI members. Service provider charges are allocated based on a formula. A recent change in 911 governance at the state level has resulted in the state taking over network charges. Minor costs for insurance, etc., are divided equally among the 13 counties.

It is worth noting that the overall cost to implement NG911 was less than it would otherwise have been because of the grant funding CSI was able to secure. This made the initiative affordable.

Technical

The regional project involved interconnecting with multiple Local Exchange Carriers (LECs) and Competitive Local Exchange Carriers (CLECs), including very small LECs. The ESInet crossed LATA boundaries and shared telephone exchanges with non-CSI counties. No one in CSI had the expertise necessary to manage the interconnections, but they were able to partner with the Illinois Institute of Technology (IIT), which wanted to get involved as a testbed for NG911. Using a portion of their grant funds, CSI engaged IIT to design the network, set up the test plan and configure and test the session border controllers.

GIS data was another challenge; existing data needed to be reviewed and cleaned up and a seamless system-wide map needed to be created. They identified this need early on, and started taking the steps necessary to ensure the data would be ready for NG911 call routing. Serendipitously, one of their members was working on a Masters in GIS at Southern Illinois University (SIU) Carbondale and was able to partner with SIU to engage geography department students to perform hundreds of hours of work on the data at a much lower cost than if they had hired a commercial vendor to do the work.

Key to CSI's success with technology hurdles was the ability to partner with people and entities that had the expertise CSI lacked.

Architecture

One early decision was that they did not want to consolidate PSAPs.[3] Another was that they would share all the major NG911 infrastructure components that replaced the E911 Selective Routers and Databases.

There are two redundant data centers and 17 PSAPs connected to the regional ESInet. Each PSAP has its own master logging recorder, but 911 voice calls are also recorded at the data centers. Radio is recorded only at the PSAPs. Future growth was considered, so the infrastructure was designed with enough capacity to serve the entire southern half of the state.

Benefits of Regionalization

The ability to share system components and their associated costs is a huge benefit.

Daily activity at the PSAP level remains unchanged. CSI does not function as a virtual PSAP where calls are answered by first available dispatcher; each PSAP continues to answer its own calls.

The full capability of the ESInet is realized during periods of heavy call volumes or other exigent circumstances. For example, a geologic fault underlies southern Illinois, the region is on "tornado alley" and is surrounded by the Ohio and Mississippi rivers. Regionalizing means that PSAPs have more dispatchers available to back each other up and take calls in the event of a natural disaster. This interconnectivity assures that no 911 call goes unanswered or gets a busy signal.

Finally, they were able to achieve "virtual consolidation" without closing any buildings, without needing to construct a large regional 911 facility, and without needing to lay off staff.

Lessons Learned

One of the most important lesson learned is to make sure your statutory and regulatory environment allow you to proceed, because changing laws and regulations take time. If they had recognized sooner that they could not be their own NG911 service provider, they would have been on line sooner.

Another important lesson learned is that the parties must be truly committed to the project. That is, they must be willing to stay the course throughout any ups, downs and unexpected turns of event. If that commitment is not there, the entire project may unravel.

It is essential to have the cooperation of the existing LECs, because they have the ability to use the regulatory and legal systems to slow you down or stop you altogether.

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[3] After the system was deployed, three PSAPs voluntarily determined they were superfluous and no longer functioned as PSAPs.

It is important to identify your NG911 system's costs as granularly as possible and as early as possible. This minimizes the potential to encounter unexpected costs and find yourself scrambling to come up with the funding.

It is important to secure your funding up front.

If possible, seek partnerships with people and entities that can help you in areas where you lack expertise.