

## PROVIDING SITUATIONAL AWARENESS TO THE REPUBLICAN NATIONAL CONVENTION AND BEYOND

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### ABSTRACT

Since Hurricane Katrina, the emergency management community has been working to create an IT product known as a Common Operating Picture (COP), which uses Geographic Information Systems (GIS) to bind and uniformly display data from diverse federal, state, and local government sources. The challenges to implementing this approach for providing better situational awareness for the emergency preparedness and response communities are many, ranging from technical to procedural. Minnesota's experiences during the Republican National Convention (RNC) suggest these obstacles can be overcome, but it will require state-sponsored collaborative efforts focusing on people, not just federally mandated solutions driven by technology. Specifically, only through cooperative local efforts can the "show-stopping" issues of data availability, technology integration, and product capability/development be worked through to achieve a vertically and horizontally useful COP.

### THE I-35W BRIDGE COLLAPSE LEADS TO RNC INVOLVEMENT

Following the I-35W bridge collapse in August 2007, antidotal evidence suggested some form of state-sponsored geospatial task force should be created to respond to future Minnesota disasters. Some of the events leading to this thought included: reports that emergency response workers climbed onto dangerous areas of the collapsed bridge to gain a better spatial sense of the disaster, the site recovery map grid had to be re-projected three different times to accommodate different mapping systems/users, high cost GIS equipment was deployed to facilities poorly protected from the elements in order to be closer to the incident command post, and squabbling took place over release of critical geospatial data because the disaster site impacted parts of two counties and two major cities with varying legal restrictions on releasing data – even during a disaster. In response, the leadership of the Emergency Preparedness Committee (EPC) of the Minnesota Governor's Council on Geographic Information began training a GIS Go Team manned by volunteers from its membership in January 2008. Thus, when the opportunity to deploy the first state/local GIS team inside a United States Secret Service's (USSS) Multi-Agency Communications Center (MACC) to support the RNC arose in summer 2008, the EPC's Go Team was available to participate.

Although the RNC, as a National Special Security Event (NSSE), was an event primarily focused on security and law enforcement, versus one focused on emergency management and response to a disaster, post event analysis strongly suggests that the geospatial lessons learned are uniformly applicable in either scenario. Deployment of the Go Team to the MACC closely matched the envisioned concept of operations for a disaster response, i.e. where personnel from Minnesota's Land Management Information Center (LMIC) would provide fee-for-service GIS support at the Minnesota Division of Homeland Security and Emergency Management, State Emergency Operations Center (SEOC), and Go Team volunteers would provide 24-hour support at a deployed site, in this case augmenting the National Geospatial Intelligence Agency's (NGA)

effort at the MACC. Connecting together these two teams required a situational awareness suite of equipment and software that included a local COP created by the city of St. Paul called SharedGeo, an EPC dedicated Jabber instant messenger service, an EPC dedicated SharePoint, a FTP site hosted by LMIC, and access to the state's online Outlook system. Lessons learned from six days of operations are diverse and many, and are derived from careful review of post event surveys, comments made during a well attended post-event "hot-wash" meeting, as well as painstaking classification of 258 discussions, comprising 94 separate threads of textual information as recorded by the Go Teams' Jabber instant messaging system.

Among the truly laudatory efforts were:

- SharedGeo COP – An online COP created using GeoMoose open source software. By the start of the convention, it hosted 160-plus layers contributed by federal, state, metro, county, city, commercial entities and the Civil Air Patrol (CAP). This unique level of federal to city cooperation is thought to be a first in the nation effort, and served as very useful situational awareness companion to the other GIS platforms used by NGA, Department of Defense, and various Emergency Operations Centers (EOCs).
- CAP Real-time Cueing Hyperspectral Enhanced Reconnaissance (ARCHER) System - Also believed to a first in the nation effort during a NSSE, extensive administrative and technological hurdles were worked through to allow CAP ARCHER imagery to be captured for several seasonally sensitive locations like the state fair grounds and major sports venues located in the Twin Cities. Images were taken one week before the RNC and then made available in the SharedGeo COP in the event of natural or man-made disasters occurring at these sites during the RNC.

While there are many other similar efforts that warrant attention as back-patting victories, unfortunately, it was from the items that were "less than good" that the most profound lessons were learned. Of the items in this collection, the vast majority fell roughly into one of three categories; each of which will require solutions built on people-centric efforts coming from state level leadership.

### THE THREE CORE LESSONS LEARNED

#### One: If You Want Data – You Have to Get the Lawyers and Accountants to Cooperate

By and large anyone working with GIS driven situational awareness products understands the preeminence of local data. Reflective of this point, in the months leading up to the RNC, NGA made multiple data requests to metro area entities in order to enhance their flagship product, Palanterra. But despite the robust nature of the Minnesota GIS community, local data availability proved problematic before, during, and after the RNC. Not so much because of the unwillingness of geospatial professionals to help one another, or the lack of quality information, but because administrative and legal control of data impeded the ability of various entities to share data (to include video) for the benefit of all. And although this hurdle was eventually overcome in some cases, the realities of the situation are sobering – especially given this very same issue came to the fore-front a little more than a year prior to the RNC during the I-35W bridge collapse incident. Of the units of government who were willing to share, in most cases they only agreed to release their data for the duration of the RNC. In other cases, data was

releasable by individual department only, requiring extensive coordination not just with the top layer of an organization, but with each department within the organization. But most troublesome of all is that an NSSE, by its very nature of being a planned, known date event, provides a golden opportunity that disasters don't: time. Consequently, despite being armed with many months to prepare and the *technological capability* of hosting and displaying every layer of data that the developers of the SharedGeo COP were able to obtain from local sources, the COP still came up short of what was possible and what was later needed when civil unrest took place in St. Paul during the RNC.

While federal efforts to harmonize national data and create interoperable data flows are of great value, they will fall far short of what is needed so long as situations like the ones described above exist. Indeed, creation of a truly beneficial emergency preparedness and response COP for Minnesota will not be possible until restrictions on local data are uniformly lifted across the various units of state and local government. Whether this is by a standard MOU or other means is less important than ensuring whatever mechanism is used also addresses requirements for public/private enterprise involvement, as well as solving the ever present mystery of who owns what data, and how to get at it in an emergency.

#### Two: The IT World Doesn't Get It

We are our own worst enemy when it comes to technology and the unique requirements associated with using GIS and related tools to maintain situational awareness. Primary among these IT mistakes is a one-size-fits-all approach that fails to acknowledge that GIS personnel have a real and valid need to efficiently move large size files and maintain some type of continuous verbal or textual interface with other EOCs. The RNC was not lacking for examples when it comes to this type of failure.

- It took nearly three and one half days to determine why Go Team personnel inside the MACC could not access the LMIC FTP site and successful download files needed to update some data layers resident on the computer inside the MACC. After extensive troubleshooting, it was determined USSS IT personnel had blocked a needed port and had also set internet access so that any file downloaded through the MACC's system became corrupted after 8KBs of transfer.
- At the SEOC, the IT decision was made to route all email through a central control point and then subsequently forward it, as appropriate, to a position specific *desktop version* of Outlook. At the MACC, the Go Team used the state's *web-based email system* which allowed all duty standers the opportunity to have continuous and non-site specific access to email. When rioting took place outside the SEOC and it appeared an emergency evacuation would be required, the merits of one approach over the other quickly became apparent.
- The single highest rated component of COP related technology deployed by the EPC was Jabber. Using a JabberNow server donated by Jabber, Inc., and hosting services donated by VISI, Inc., the EPC was able to create a web-based secure instant messaging system that allowed Go Team personnel in the MACC, SEOC, and other locations to coordinate, problem solve, and update situational awareness related information at will. In some instances (various state and federal offices), access to this powerful tool was blocked by IT protocols prohibiting download of the required software or restrictions on the program's

communication port. Consequently, when appropriate, air-cards and personal laptops had to be used to bypass these issues.

Careful review of the above information, and all other IT issues discovered during the RNC, indicates there is nothing that will technologically stop the creation of a powerful, integrated, GIS based COP for Minnesota. Instead, the only IT roadblock is the political will to make IT responsive to COP development - not the other way around.

Furthermore, the complexities of IT support mean background work has to be done well in advance for a COP approach to have real value in a disaster. Working through protocols, access rights, software integration issues just won't happen in timely fashion during a disaster. And once again, solving these issues before a disaster will not happen without a people-focused engagement supported by the state's decision making process.

### Three: It's Not Just GIS – It's Situational Awareness

In terms of volume of comment, nothing generated more discussion than two interrelated issues. One, the lack of understanding about COP potential by EOC operations personnel; and two, the need to shape the current COP product so that it can deliver on that potential.

With regard to the operations side of the equation, it appears a paradigm shift driven by education is required. The current operational point of view needs to move from seeing GIS personnel as the EOC's makers of an occasional static map, to one of seeing GIS personnel as the operators of a geospatially based suite of tools that can fuse multiple data streams into visual real-time situational awareness. Case in point - the SharedGeo COP was fully capable of displaying every video camera available during the RNC including those operated by at least ten different agencies. However, because of low pre-event demand for these camera feeds from various metro EOCs, the developers of the SharedGeo COP were unable gain access from some providers. Consequently, on September 1<sup>st</sup>, the SEOC had to rely on completely inadequate public webcams and telephone conversations between the MACC and SEOC to understand the dimensions of the rioting threat in the streets immediately outside the SEOC. And although the MACC had complete access to every available camera via a dedicated line, the available video was developed and managed as a *site specific data stream*, rather than as a GIS based web product available for all authorized users.

With regard to product development, two themes clearly emerge. First, procedural documents, like SOP's, which set out the roles and responsibilities associated with a GIS position in an EOC, need to be developed. More exactly, these products need to be crafted to serve as guideposts for GIS conduct in a collaborative environment. While documents such as FEMA's Geospatial Intelligence Specialist Job Aid and the National Wildfire Coordinating Group's GIS Standard Operating Procedures on Incidents provide some sense of how these documents should be drafted, the multi-site approach used by the Go Team during the RNC demands standards that not only speak to GIS usage and support tools like Jabber, but also address how to manage operations across multiple locations and circumstances on a situational awareness net. Second, while the vision of a follow-on COP product built on RNC lessons learned is still not totally clear, one item is certain. A unified, web-based, collaborative suite of tools, based on GIS is the best solution for providing situational awareness to not only the GIS EOC position, but other emergency responders as well. Such an approach would simultaneously neck-down the situational awareness applications that proved successful during the RNC while adding

additional capabilities now thought worthwhile. As envisioned, this product would provide, through a one site log-on, some of the following features: large file transfer capability, instant messaging, email, report logging, VOIP access, whiteboard feature, video camera feeds, and incident mapping, all built around a GIS platform of highly accurate local data. And while this suggested configuration in many ways mimics some elements of current products like the Homeland Security Information System or commercial EOC disaster management systems, it would be fundamentally different by having modules that can be used for day-to-day business communications, as well as providing visual situational awareness, and not textual awareness, as its core readiness feature for emergencies. Ultimately, this approach would move the concept of COP from a GIS based *Common* Operating Picture, to a GIS based *Collaborative* Operating Picture - particularly so when deployed in conjunction with similar mobile platforms.

## CONCLUSION

At the outset of planning for the RNC, the Special Agent In Charge (SAIC) of the MACC saw little reason to add local GIS support to the diverse cadre of individuals that normally populate the MACC. However, by the end of the RNC, both the SAIC and NGA component personnel were recommending the approach be adopted as a national standard. While the Go Team's efforts during the RNC demonstrated both the viability of a state-sponsored geospatial task force and the need for a Collaborative Operating Picture, there is much work left to be done. Central among these are the issues of: data availability, technology integration, and product capability/development; vexing problems that can not be solved without *state* legislative and/or decision making involvement.

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