

# Crime Mapping News



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The topic of this issue of *Crime Mapping News* is multijurisdictional crime mapping efforts. This issue begins with an article about the organization, development, and implementation of a new regional crime mapping information system in San Diego, California. The second article describes the development and application of a regional data-sharing initiative in Maryland. The third article highlights the events at a recent mapping conference in Pittsburgh, PA. The final article is part of a new series called the *Crime Mapping News Spotlight* where we highlight a particular program, crime analysis unit, or special event involving GIS, crime mapping and/or crime analysis and provide a brief snapshot of the key components, ideas, or strategies. This issue's spotlight is on a professional GIS certificate program at George Mason University in Northern Virginia.

## Crime MAPS: Evolution and Revolution

by Julie Wartell, Crime Analysis Administrator, County of San Diego  
District Attorney

### From Where Did MAPS Come?

#### Brief History

San Diego County's Automated Regional Justice Information System (ARJIS) implemented the Interactive Mapping Application (IMA) in 1999. It was the first multi-agency, interactive crime mapping Web site in the country. Geographic information systems (GIS) have been used within individual law enforcement agencies in San Diego County for over twelve years. The San Diego Police Department (SDPD) was instrumental in the creation of IMA, and was a pioneer in 1996 in putting crime maps on the Internet.

ARJIS IMA soon became a model for others wanting to create crime maps on the Internet. The implementation was noteworthy as a unique model for law enforcement and for providing the capability of making regional, interactive crime maps available to the public. In 2001, ARJIS took the added step of evaluating the effect of IMA on the community and public safety. This evaluation included over thirty focus groups and community meetings to gather input and learn what the various audiences desired for a re-designed application. Using the results of that evaluation and a thorough planning process, ARJIS was poised to implement IMA2—a law enforcement-only, interactive, crime-mapping application running through the secure ARJISNet.

The primary goals of the San Diego Regional Crime Mapping Project—which was later named San Diego County Regional Crime Mapping Application for Public Safety (MAPS)—were to expand and enhance IMA for the public and create IMA2 (MAPS-LE) for law enforcement personnel. This project brought local, state, and federal law enforcement agencies, as well as academic institutions and the private sector, together to create an application that would best serve the community. Specifically, the project was designed to accomplish the following:

- Increase the functionality (querying and reporting capabilities) of IMA;
- Greatly expand the amount and detail of data from IMA;

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- Allow users to map and analyze across jurisdictional boundaries, which allows for increased communication and regional problem solving; and
- Create a means for community members and law enforcement personnel to do crime mapping with a sophisticated but user-friendly Internet application.

In the fall of 2003, San Diego County was in an ideal position to move forward with MAPS. The work that had been done in preparation for a new IMA and IMA2—SDPD's crime mapping infrastructure development, the provision of a project manager from the district attorney's office, and the funding from the National Institute of Justice—all set the stage for a unique, cutting-edge, local project.

### **Getting Started**

A Project Management Committee (PMC) was created to include members from many of the stakeholder agencies, in particular community members, cops and analysts from local law enforcement, and GIS experts from the local San Diego Association of Governments (SANDAG) and local universities. The PMC initially met to determine existing resources (data, money, expertise) and review project requirements.

The draft requirements were a product of a wide variety of input from a number of sources: brainstorming meetings and communication with a planning group representing several ARJIS agencies; results of a two-month online survey of law enforcement personnel conducted on ARJISNet; a demonstration of an ARJIS beta mapping application by the U.S. Border Patrol; informal discussions with several vendors; several documents created by SDPD; and relevant publications in the crime mapping field. A Request for Proposal was created and distributed in September 2004, the vendor team was selected in December, and our kick-off meeting took place in January 2005.

### **Committee Work**

All ARJIS agencies and other stakeholders were once again invited to participate in the project. Volunteers selected one of three committees on which to participate. The Policy Committee had management-level representatives who oversaw the policy-oriented and political issues. The Technical Committee was in charge of hardware, software, and infrastructure elements. The User Committee—consisting of analysts, cops, and community members—handled everything from the look and feel of the application to the choice of data. One of the initial rules of the project was that if you do not show up at meetings or provide input when asked, you do not get to impose changes after the fact. Fortunately, this rule was imposed only a handful of times.

While the Policy Committee met only a few times during the project, the Technical Committee had several meetings at the beginning, and then a modified Technical Group spent a great deal of time getting the completed

application to work in the existing infrastructure. The User Committee had numerous meetings, and spent additional time on topics as far ranging as Web page color schemes to symbology, wording of the HELP file, and time selection criteria. The lead application developer was extremely patient, helpful, and creative in working with the User Committee on the thousands of options for this complex system.

### **How Does It Work?**

#### **Flow**

The importance of the application flow—from what the user initially sees on the first page, to how and when to get to HELP, to making and modifying a map—is extremely important. All applications need a disclaimer, and MAPS was able to use a modified version of the existing IMA disclaimer. Once the user accepts the disclaimer (I recommend looking at as many as possible if you are creating one for your site), the ABOUT page follows. This way, users should be able to find out everything they want to know and more about the system. One of the community members from the User Committee wrote the majority of HELP and ABOUT so it would accurately reflect the community perspective.

While HELP provides tips on what happens when you click buttons and which screens to go to next, ABOUT provides information on the origin and types of the data, incident attributes, more details about the time periods, and why the program should not be used for official statistics. Both HELP and ABOUT include contact information for technical problems, as well as questions about crime in each jurisdiction. HELP and ABOUT are available on all screens once the user enters the application.

The application consists of three query screens and the resulting map screen. The query screens are Location, Incidents, and Time Frame. The user is not able to advance to the next screen without filling in criteria. Once each screen is complete, a map can be generated. After a map is generated, any one or more of the previous screens can be changed with the remaining screens keeping the original criteria.

#### **Content and Function**

Location, Location, Location. Like real estate, crime mapping centers on location (see Figure 1). Because of the cross-jurisdictional aspect of the application, logic led us to use location as the first page. In addition, the types of locations (schools, neighborhoods, etc.) varied from one jurisdiction to another. Location types were selected by the User Committee through a combination of a wish list and what data were available. Most of the base layers (jurisdictions, streets, hydrology, schools, etc.) are maintained by SanGIS, a local GIS consortium, or SANDAG. San Diego County is fortunate to have a large variety of countywide GIS data. For instance, everyone wanted to include parks but the data layer was not good, so we are working with SANDAG to create a new, countywide parks layer for MAPS (and to make available to other SanGIS users).



Figure 1. Query screen used to select general location and location types.

There was a great deal of discussion on what types of incidents should be included. The list ended up with all Part 1 crimes, some other crimes, selected arrests and citations, and traffic collisions and citations (see Figure 2). The plan is to add selected calls-for-service data, such as noise and disturbance, which do not typically turn into official crime reports. The only crime type that induced further meetings and discussions, and which the ARJIS chiefs ultimately decided not to include, was domestic violence.

One of the key points that came out of the earlier evaluation was that 60 days (the current IMA) was too short for many of the community users. We settled on one year, but limit the user to 91-day time frames for performance and readability. In addition, we felt it was important to allow the user to choose any time range and day of the week. Many communities are happy seeing any crime-mapping data, but one thing we have learned in San Diego is that our residents have high expectations due to the fact they were provided basic maps ten years ago and more complex and interactive maps since 1999.

After the user has selected the location, incidents, and time period, a map can be generated (see Figure 3, next page). In addition to the actual map, there are several functions beyond the traditional zoom and identify. Totals provides numbers of each type of incident in the legend. SELECTION SUMMARY allows the user to see what location, incident types, and time period are chosen. At any point, the user can

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Figure 2. Query screen used to select the type(s) of incidents.

**Note from the editors:** The opinions expressed in the articles of this newsletter are those of the authors and do not necessarily reflect the views of the Police Foundation or the COPS Office. In addition, only light editing has been done in order to keep each author's voice and tone.

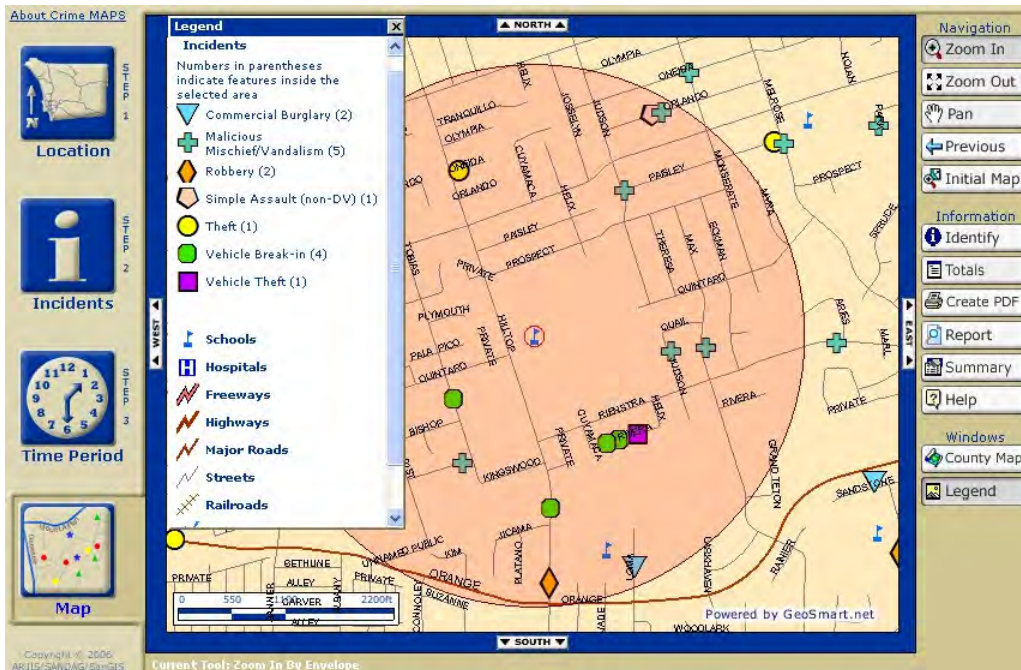


Figure 3. Map showing results of query selections.

change one or more of those options and the others will remain. The report function offers the user a sortable, printable list (see Figure 4); and the printed map button generates a custom-titled pdf.

Where do we go from here?

Next Steps for MAPS

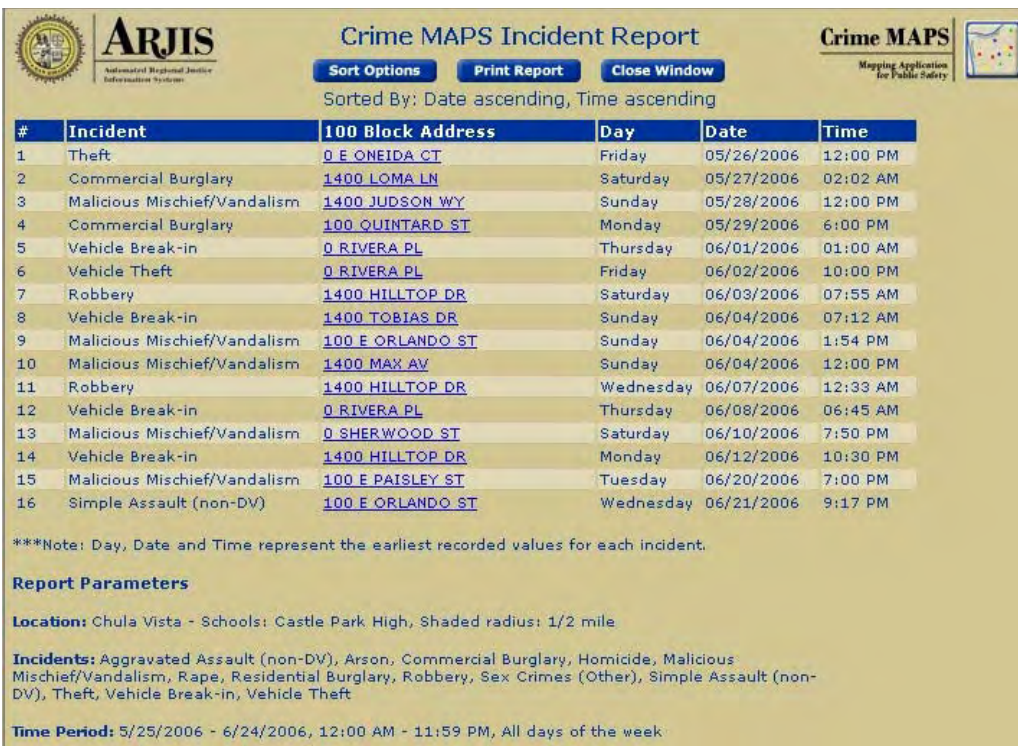


Figure 4. Printable report based on query selections.

Now that we have accomplished our goal of creating a user-friendly, versatile, and dynamic application, we need to get the word out. This will be done through demos and training of key personnel in the law enforcement agencies, such as the sheriff's department's twenty-five Crime Prevention Officers, as well as to community leaders and the general public.

Even as we planned for the release of version 1.0, we already had a list of enhancements for the next version. Some are as simple as adding more tourist attractions that were not in the original list, while the ultimate improvement is completing a related

application of a crime-email distribution list. Currently, SDPD has this functionality with eWatch, which is connected to the old IMA. We plan on expanding eWatch countywide and linking it to the new MAPS.

In August 2006, planning began for MAPS-LE. Using a secure intranet, MAPS-LE will provide law enforcement with a much richer dataset to be mapped and analyzed. New information will include more detailed local crime data, county and state data (such as probationers and parolees) that is restricted to law enforcement personnel, and links with

graphic data such as mug shots and orthophotos. All 71 ARJIS agencies will be able to access, map, and report on all multijurisdictional ARJIS data (such as field interviews and outstanding warrants that are not available to the public). In addition, a variety of other criminal justice, geographic, and demographic data will be integrated into the system.

The ultimate goal of MAPS will always be to serve the needs of the community and law enforcement. As the needs change and technology improves, we are hoping that we can adapt the applications appropriately.

Future of Crime Mapping on the Web

There are many benefits of Internet crime mapping,

especially regional applications. The primary benefit is the capability of information sharing and looking at criminal justice related information mapping across jurisdictional boundaries. Cross-jurisdictional mapping can aid in interagency communication, intelligence gathering, strategic planning for resource allocation, homeland security, as well as, crime control and prevention efforts. Regional efforts also offer economies of scale, shared expertise and resources, and an improved analytic capacity.

In terms of challenges, most regional, multi-jurisdictional projects include issues of multiple organizations with differing goals and objectives, privacy and security concerns, and the complexity of integrating data and systems. If a cross-jurisdictional infrastructure already exists, many of these obstacles can be avoided in establishing a regional mapping project. Specific challenges to MAPS included limited monetary resources, differing priorities within partner organizations, and existing information technology vendor associations.

Although MAPS and other crime mapping web sites are still evolving, there has definitely been a revolution not only in thinking about sharing crime mapping data on the Web but also the technology that enables it. In 1996, when the San Diego police began sharing crime maps on the Web by putting up monthly static maps, we were considered revolutionaries. Amazingly, ten years later, there are only 100-125 public Web sites that have some type of crime mapping. The use of GIS in law enforcement has definitely grown, and the technology is available and not cost prohibitive, but politics and personal beliefs continue to limit the open sharing of crime data and maps. If we in law enforcement want to reduce and prevent crime, we need to partner with the community, which includes providing as much information as is legally and feasibly possible. Crime mapping on the Web is an excellent way to help accomplish our goals. Feel free to check out the interactive site at [www.arjjs.org](http://www.arjjs.org) (click Crime Maps).

#### References

- La Vigne, Nancy, and Wartell, Julie. 2001. Mapping Across Boundaries: Regional Crime Analysis. Washington D.C.: Police Executive Research Forum.
- Wartell, Julie. 2001. "Evaluating a Crime Mapping Web Site." In Crime Mapping News. Washington, DC: Police Foundation. Vol. 3, Issue 3.
- Weisburd, David, and Lum, Cynthia. 2005. "The Diffusion of Computerized Crime Mapping in Policing: Linking Research and Practice." In Police Practice and Research. Vol. 6, No. 5. 419-434.

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