

Mapping a Plan for Disaster Readiness: Using GIS Technologies With Child Welfare Data

When disasters occur, it is essential that state and county human services agencies with custody of children be able to quickly and efficiently identify those children at risk of injury, displacement, or who need recovery assistance. Mapping and other geographic information systems (GIS) technologies can make this information available in near-real time. Unfortunately, most child welfare and juvenile justice agencies do not have access to GIS technologies. For those agencies that do have GIS capabilities, they often do not have the resources to update their maps frequently enough to be useful in a disaster situation.

As part of its SafeMeasures[®] reporting service,ⁱ the National Council on Crime and Delinquency (NCCD) offers an interactive, near real-time mapping service that displays the location of child welfare referrals, children receiving child welfare services, and children in foster care. This service uses existing case management data to display the geographic distribution and proximity of cases to various locations such as removal homes and child welfare offices.

Shortly after NCCD released this mapping feature, California counties asked if NCCD could map the location of children in foster care to help staff determine when children were threatened by a wildfire. NCCD staff devised a technique to overlay the location and perimeters of active and recent fires on a map of children in placement. Additional events such as earthquakes and tornadoes were also included.

This “disaster map,” as it is called in the field, proved immediately effective. Only days after the map was released, San Bernardino County was shaken by a mild earthquake. The agency was immediately able to identify hundreds of foster children within a critical distance of the epicenter and follow up on their safety.

We had a 4.5 earthquake last night with the epicenter in the downtown area of the City of San Bernardino... The listing I was able to pull from SafeMeasures this morning lets me see the locations of 380 foster children living within a three-mile radius of the epicenter. (January 9, 2009)

The SafeMeasures disaster maps have also been valuable during California’s wildfire seasons.

[The disaster maps have] been extremely helpful for the past couple of weeks of huge fires here in Southern California. I am able to watch the perimeters of the fires and alert social workers of children on their caseloads who may be in harm's way due to the fires. (September 2, 2009)

A few examples of the interactive mapping feature are shown on the following page. Figure 1 shows an actual fire (red area), satellite-detected hot spots (red dots), and children placement (blue dots) for a wildfire that struck Santa Barbara County, California, in May 2009.

Figure 1: Wildfires, Santa Barbara County, 2009

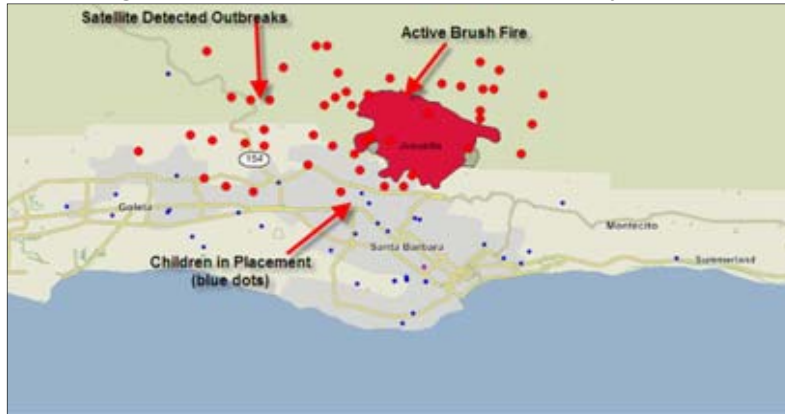


Figure 2 shows a map zoomed in on the location of foster children near an active fire (red area) and a potential flood zone (green area). Children are represented by blue dots. Clicking any blue dot opens a pop-up window showing the name, contact information, and assigned worker for all children at that location.

Figure 2: Pop-Up Information

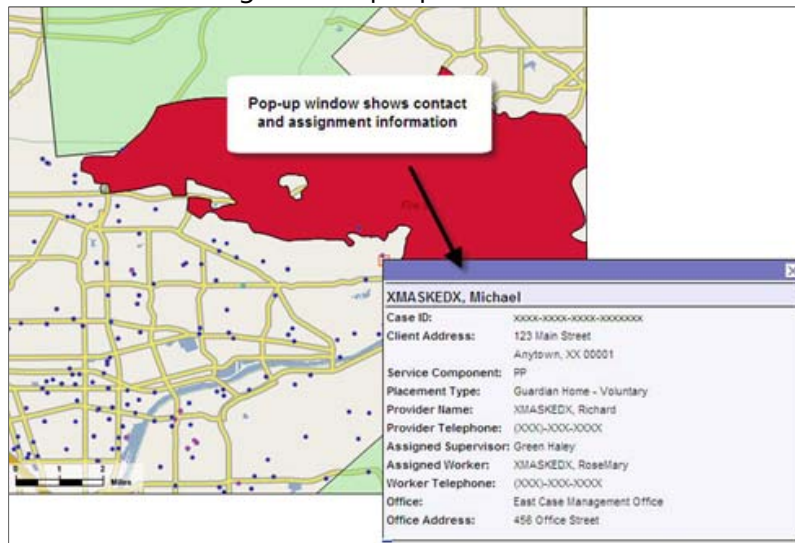


Figure 3 shows a list of all children within a user-selected area on the map. In this way, SafeMeasures allows users to quickly generate the essential contact information for all children in proximity to the disaster event.

Figure 3: Contact List Generated by SafeMeasures®

Staff Member	Staff Member Phone	Case ID	Client Name	Address	City	Provider Name	Provider Telephone
XMASKEDX, Glenda	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Vanessa	123 Main Street	Anytown	XMASKEDX, Anta	(000)-300-XXXX
XMASKEDX, Richard	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Talia	123 Main Street	Anytown	XMASKEDX, Anta	(000)-300-XXXX
XMASKEDX, Shannon	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Trey	123 Main Street	Anytown	XMASKEDX, Audra	(000)-300-XXXX
XMASKEDX, Rhea	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Vanessa	123 Main Street	Anytown	XMASKEDX, Brigitte	(000)-300-XXXX
XMASKEDX, Ima	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Fernando	123 Main Street	Anytown	XMASKEDX, Carol	(000)-300-XXXX
XMASKEDX, Kin-GAP	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Celena	123 Main Street	Anytown	XMASKEDX, Deborah	(000)-300-XXXX
XMASKEDX, Monica	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Angela	123 Main Street	Anytown	XMASKEDX, DONNA	(000)-300-XXXX
XMASKEDX, Ozheni	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Destiny	123 Main Street	Anytown	XMASKEDX, GUADALUPE	(000)-300-XXXX
XMASKEDX, Debra	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Aahlyn	123 Main Street	Anytown	XMASKEDX, JETHURFER	(000)-300-XXXX
XMASKEDX, Kendyl	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Sade	123 Main Street	Anytown	XMASKEDX, Kathleen	(000)-300-XXXX
XMASKEDX, Veronica	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Jessica	123 Main Street	Anytown	XMASKEDX, KSI	(000)-300-XXXX
XMASKEDX, Vanetta	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Erik	123 Main Street	Anytown	XMASKEDX, Laura	(000)-300-XXXX
XMASKEDX, Vanetta	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Isaac	123 Main Street	Anytown	XMASKEDX, Laura	(000)-300-XXXX
XMASKEDX, Dina	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Brita	123 Main Street	Anytown	XMASKEDX, Maria	(000)-300-XXXX
XMASKEDX, Kin-GAP	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Rebecca	123 Main Street	Anytown	XMASKEDX, Mary	(000)-300-XXXX
XMASKEDX, Cory	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, John	123 Main Street	Anytown	XMASKEDX, Rebecca	(000)-300-XXXX
XMASKEDX, Serge	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Courtney	123 Main Street	Anytown	XMASKEDX, Shawana	(000)-300-XXXX
XMASKEDX, Patrick	(000)-300-XXXX	XXXX-XXXX-XXXX-XXXX	XMASKEDX, Nathaniel	123 Main Street	Anytown	XMASKEDX, Vickie	(000)-300-XXXX

While the maps are efficient and easy to use, it takes considerable ongoing, behind-the-scenes effort to ensure that the underlying disaster data is both timely and useful. Multiple sources are needed to ensure that data are available as soon after the event as possible. SafeMeasures aggregates and transforms data from the USGS, National Weather Service, and a number of other agencies. Some data are updated as often as every 10 to 15 minutes; no event data are older than four hours.

Similarly, address information and other client data need to be accurate and up-to-date. SafeMeasures relies on nightly updates of client case management data. It also includes a great deal of infrastructure dedicated to validating addresses and transforming them into points on the map. However, this process is only as accurate as the data stored in the case management system. SafeMeasures lists invalid addresses in a way that allows case workers to identify and fix them within the case management system.

SafeMeasures disaster maps represent a first step toward a comprehensive disaster response system for children in child welfare. Clearly the full scope of the problem exceeds what SafeMeasures can provide. Nevertheless, our work with real-life situations may provide a foundation that could be complemented or expanded in several ways, including the following.

- **Access to shared data.** Data that are shared among agencies, e.g., critical health information, must be available to first responders.
- **Logistical coordination.** The location of temporary shelters, first aid stations, hospitals, and other resources especially equipped for children should be available as map layers so first responders can determine the nearest appropriate facility.
- **System interfaces.** Though focusing on the needs of children, the system should be designed to interface with other emergency response systems by incorporating national data exchange standards.

The SafeMeasures disaster maps demonstrate that GIS technologies can be used to help agency staff quickly identify and locate those children who may be at risk. Any GIS solution developed to meet this need must accomplish four goals:

- Provide timely and accurate information about client locations;
- Provide a method to notify staff about invalid addresses so they may be corrected;
- Provide timely and useful information about current and recent events; and
- Provide a method for users to quickly focus their attention on a specific area and generate “rip and run” lists that can be used for direct action.

While the integration of mapping technologies with existing child welfare case management data should be a part of every agency’s disaster planning process, NCCD recognizes that many agencies do not have the resources or capacity to do so. In these situations, tools like SafeMeasures can fill this gap and help protect children.

Further Information

For more information, contact:

Matt Wade, Director of SafeMeasures
426 South Yellowstone Drive
Madison, WI 53719

(800) 306-6223
mwade@nccdglobal.org

About NCCD

NCCD, the country’s oldest nonprofit criminal justice research organization, was founded in 1907. Today NCCD works with agencies and organizations across 79 jurisdictions in the United States and nine jurisdictions in Australia, Canada, Bermuda, and Taiwan to develop and implement evidence-based and data-driven practices in adult and juvenile justice settings, child welfare, adult protective services, and other social welfare arenas. Please visit our website at www.nccdglobal.org. For more information, call us at (800) 306-6223.

¹ SafeMeasures is a data analysis service that provides near-real-time performance metrics to managers, supervisors, and social workers. Data are extracted from Statewide Automated Child Welfare Information Systems (SACWIS) or other case management systems and analyzed for display within an Internet-based user interface. SafeMeasures is used by most county child welfare agencies in California and the California Department of Social Services. SafeMeasures is also used by the Virginia Departments of Social Services, the New Jersey Department of Children and Families, the Allegheny Department of Human Services, the Maryland Department of Juvenile Justice, the Tennessee Department of Children’s Services, and the Mecklenburg County Department of Youth and Family Services.