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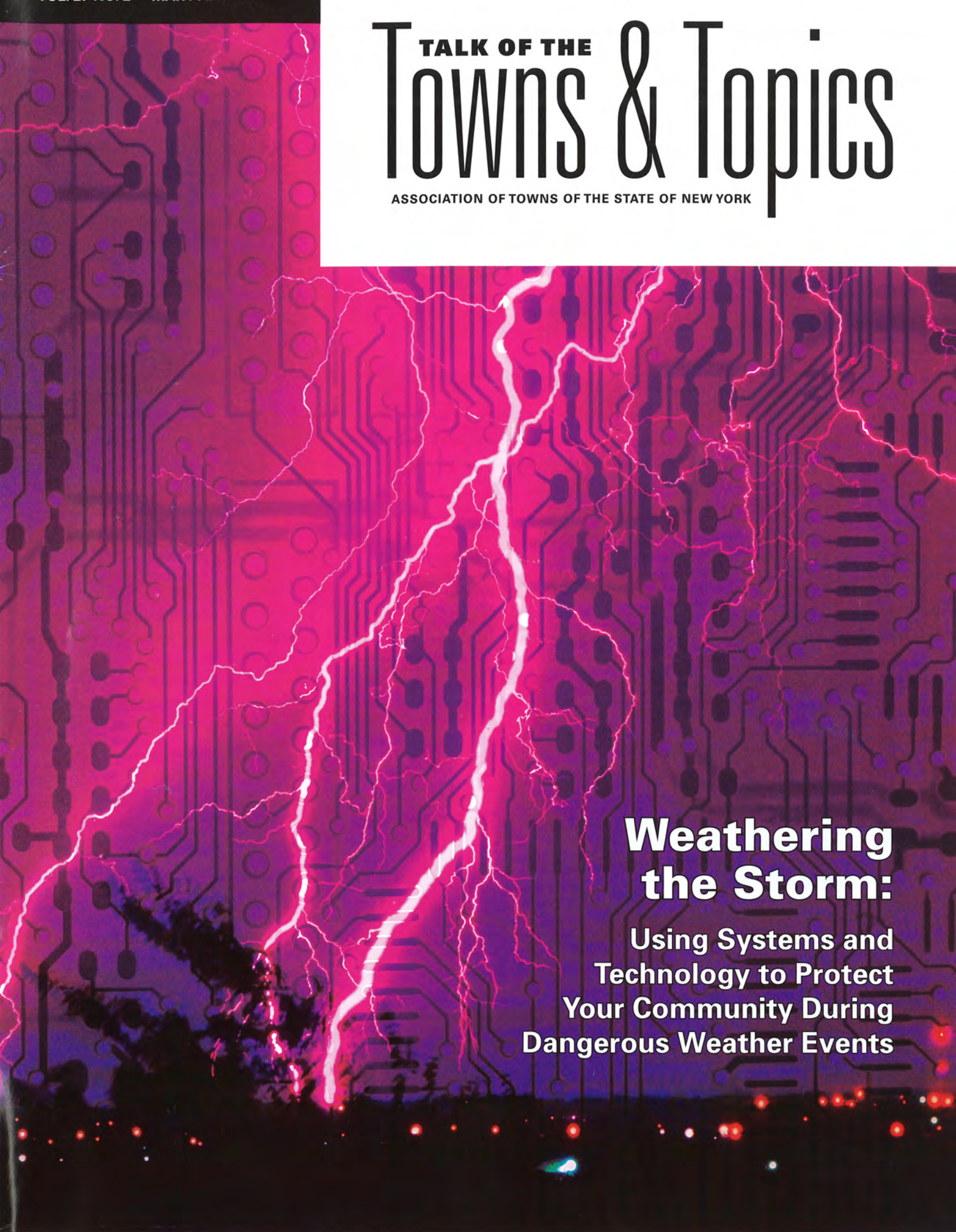

Weathering the Storm:

Using Systems and Technology to Protect Your Community During Dangerous Weather Events

Keeping in Touch With Your Community through Technology

By Suzanne Zitzman, Director, GIS Asset Management Services, Maser Consulting P.A.

Over the past two years, the northeastern states have experienced more than their share of naturally occurring disasters. Giant storms including the likes of Hurricane Irene (2011), Superstorm Sandy (2012), and other rogue storms, have wreaked havoc on communities bringing severe and widespread destruction to roads, properties, utilities and other infrastructures due to damaging winds and flooding. At times like this, the need for communication between local government and its constituents is critical, and the implementation of technological advances has enabled such service providers to accomplish this.

As more local governments and utility companies, as service providers, have integrated a combination of social media and web-based applications (including Twitter, Facebook, Web sites, e-mail and text messaging), and Geographical Information Systems (GIS) internally to foster community outreach and to oversee and monitor infrastructure repairs, construction, and progress, it has made it easier to communicate important information back out to the public at large. These service providers are taking advantage of this technology to make informative decisions regarding their communities and in conveying those plans and results to them. In the wake of recent superstorm damage, having this technology at their fingertips enabled service providers to disseminate information (such as emergency road closings, evacuations and procedures, shelter designations and important emergency contact information), which has become paramount to public safety.

Using GIS in a web environment fosters increased interactive communication between service providers and their consumers, as the provider now has an option to enhance their Web site to include an online public registration. Through this registration process, community members can register their name, residence location, phone number, e-mail and emergency contact information. In return, this information is stored geospatially, enabling the service provider to select registered members based on their residence location and provide them with more detailed notification of incidents taking place around their location. Not only that, but using specific information provided by the registrant in their preferred manner of communication provides potential for targeted services and virtually immediate responses. Notifications for events such as water main breaks, road construction detours and evacuations can be sent via cellphone apps, texting, e-mail, social media, and/or voice messaging is always helpful during normal repair times. But communicating this way may also serve as an important alternative means of notifying community members during storms and related repair times.

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Service provider Web sites can also serve as a means for community members to submit service requests. By standardizing common service request issues, the community is able to select a service request such as pothole, tree down or storm sewer overflow, and send it directly to the service provider for attention. Such requests can be stored in the GIS program and notify the appropriate supervisor of the incident. From there, a work order can be generated and distributed to staff who will be responding to the incident.

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As data is collected from the community, the service providers are able to use their GIS programs to assist them in making decisions about managing and maintaining their infrastructure. For instance, in areas where service requests related to storm sewer overflow are abundant, inspections can be done on the storm water system using mobile GIS inspection applications. Collecting data associated with the condition of catch basins, depth of pipes and pipe size can be added to the GIS map layer representing the storm sewer system for even more accuracy. Condition and risk of failure analysis can be handled within the GIS program, reporting storm water components requiring maintenance or reconstruction based on inspection data.

In cases where storm-related damage is experienced, such as during the recent Superstorm Sandy incident, infrastructure damage and repair information can be collected into the GIS program and reported directly to FEMA for reimbursement. This is a classic example of how GIS can streamline infrastructure repair and the preparation of required reporting, keeping a historic record of the repairs and costs. Record-keeping about how situations were managed in the past can also help service providers make better, more informed decisions going forward.

Through the implementation of a combination of social media, web-based applications and GIS program, service providers have become proactive in informing their communities of instructions to be followed during and after a weather event, alerting them to repairs happening in their area, promoting service requests, and acting as an emergency communication venue when other traditional means of communication may be insufficient.

If your community is interested in learning more about how GIS can assist you with emergency response, you can visit http://gis.FEMA.gov. If you'd like to take part in FEMA's Think Tank discussions on communication technology, join in on the next discussion at http://www.fema.gov/fema-think-tank. ❐

About the Author

Ms. Zitzman is the Director of GIS Asset Management Services at Maser Consulting P.A. She studied geomatics at Rutgers University, N.J. and served on the N.J. State GIS Council 2001-2002, appointed by then acting Gov. Donald DiFrancesco. Ms. Zitzman is currently Chairman of the Lehigh Valley GIS Consortium, Pennsylvania. She received the Government Technology Innovation Award in 2008 for the implementation of Middletown Township, Monmouth County NJ GIS program and citizen communication portal project. Follow her on Twitter @suezitzman.