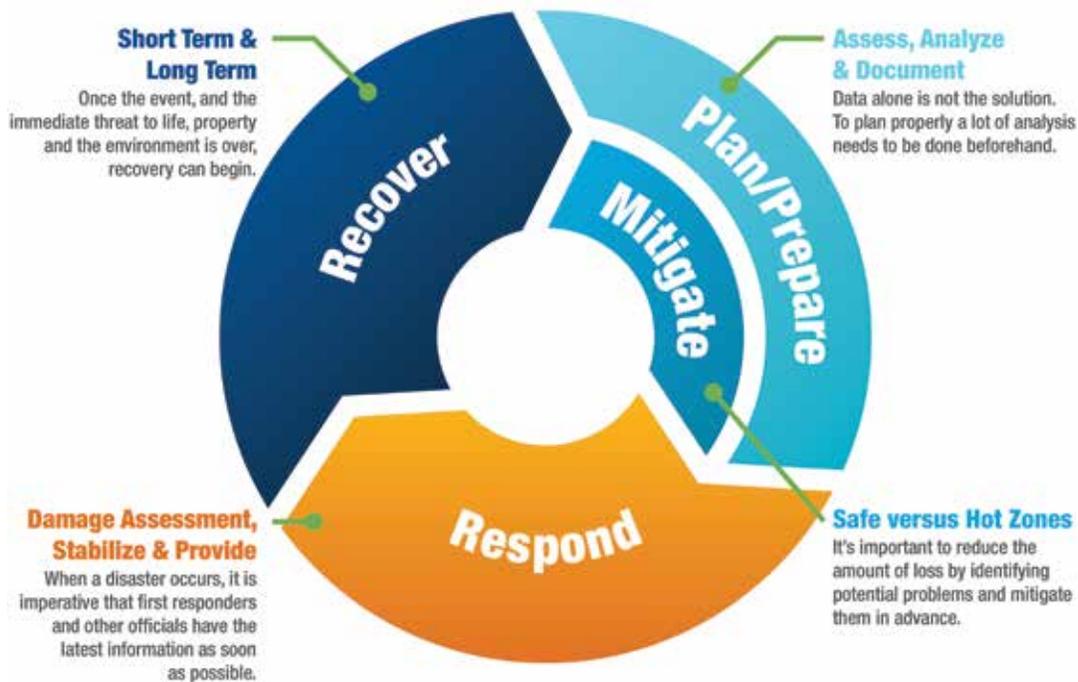# GEOSPATIAL NATURAL DISASTER MANAGEMENT

DISASTERS HAPPEN. ARE YOU READY?

Natural disasters can strike almost anywhere at any time, with no regard to a municipality's financial resources. These extraordinarily adverse events often present broad, swiftly changing geographic impacts that can result in loss of life as well as severe property damage. Physical and economic damages can occur immediately or can emerge over time, such as loss of annual crops from extreme heat. Most natural disasters are weather-related. Unlike a volcano, which you can choose not to live near, weather-related incidents can happen anywhere. Everyone is susceptible.

Disaster Management Workflow

Short Term & Long Term
Once the event, and the immediate threat to life, property and the environment is over, recovery can begin.

Assess, Analyze & Document
Data alone is not the solution. To plan properly a lot of analysis needs to be done beforehand.

Recover

Plan/Prepare

Mitigate

Respond

Damage Assessment, Stabilize & Provide
When a disaster occurs, it is imperative that first responders and other officials have the latest information as soon as possible.

Safe versus Hot Zones
It's important to reduce the amount of loss by identifying potential problems and mitigate them in advance.

Disaster management involves protecting human populations from the consequences of catastrophic events through planning, mitigation, preparedness, response, and recovery.

- **Planning** seeks to create disaster resilience for potentially vulnerable communities.
- **Mitigation** involves removing humans from the path of a disaster, or taking structural actions that keep the disaster from affecting human life.
- **Preparedness** means having correct procedures in place for when a disaster occurs.
- **Response** is search, rescue, and taking care of a population affected by disaster.
- **Recovery** is returning a community to normalcy.

Geospatial information plays a critical role in all phases of disaster management, and can shed light on many key activities. Geospatial solutions help to lessen the impact of natural disasters across all phases of disaster management. And they are directly related – using geographic information to prepare for a disaster event can lead to positive outcomes for your organization's response during an event. Rapidly authoring, fusing, analyzing, managing, and delivering data is crucial for up-to-date situational awareness and response and recovery efforts. For natural disaster management, your geospatial solution must incorporate the following:

Our Geospatial Natural Disaster Management solution incorporates the same robust, field- tested, and industry-proven software offered through our Hexagon Geospatial portfolio.

- **Productive Data Collection & Management –** You must have the right data at the right time to support disaster planning and response. This data must be collected from multiple sources, including people in the field, and should be easy to access and conduct analysis. Having productive data management helps you organize your data holdings, enhance planning efforts, and provide first responders the data they need when they need it.

- **Robust Modeling & Analysis –** By being more proactive with your disaster planning tasks, including creating data, maps, digital elevation models, and reports, you can be more accurate in your analysis to support evacuation and disaster mitigation planning.

- **Rapid Delivery –** You need an extensive catalog or repository where multiple agencies can access and interactively work with different types of data. By being able to get crucial data to first responders and relief agencies via multiple formats, you can dramatically reduce response time in the field, helping to save lives, property, and infrastructure in the wake of a disaster.

- **Actionable Visual Intelligence –** You need to be able to view data related to disaster planning, response, and recovery in multiple contexts (e.g., desktop, web, mobile, 3D) to fully understand disaster impacts and support decision-making.

- **Powerful Field Collection and Assessment –** You need to be able to assess disaster situations in the field and collect information on the damage to assist in recovery operations.

Hexagon Geospatial and Intergraph® believe that all communities should have access to state-of-the-art technology for disaster planning and response, regardless of budget and size.

Our Geospatial Natural Disaster Management solution incorporates the same robust, field- tested, and industry-proven software offered through our Hexagon Geospatial portfolio. These products are designed to work well with each other, and with the other products and technologies you may already be using. As such, we're able to provide you with a dynamic solution tailored to your specific needs without having to develop custom software or adapters. This keeps the overall cost of the solution lower for tight budgets.

Hexagon Geospatial and Intergraph provide technology to discover, mitigate, and respond to a broad spectrum of natural disasters. Our Geospatial Natural Disaster Management solution equips a broader group of individuals and departments to create data, maps, and reports. We provide the tools necessary to efficiently perform proactive disaster planning tasks, all the while communicating and working collaboratively across departmental boundaries.

DISASTER PLANNING

Hexagon Geospatial's GeoMedia® product suite delivers precise spatial intelligence before, during, and after disasters. Officials can more accurately predict flooding impacts when a storm is coming and understand how many residents will be affected. Municipalities can also use GeoMedia to simulate the impact of a given storm on city properties such as schools and parks. This tool can expose whether a particular parcel will likely be flooded during an event, and can even reveal how many times and to what degree a particular parcel was impacted in prior disaster events.

GeoMedia also gives you the power to perform sophisticated, complex investigations to extract information from data stored in multiple databases on different platforms and a variety of different files, all at once.

DATA MODELING AND ANALYSIS

With Hexagon Geospatial's ERDAS IMAGINE®, you can efficiently perform proactive disaster planning tasks including creating data, maps, digital elevation models, and reports. You can also perform 2D and 3D modeling including drainage, floodplains, SLOSH, sea level rise and storm tide analysis, change detection, and more. In addition, you can easily show the exact number and location of affected structures based on the predicted storm surge.

CONFIGURABLE GEOSPATIAL WORKFLOWS

Whether you're in the field or in the office, you won't have to worry about shuttling vital information back and forth from department to department. With GeoMedia Smart Client, every person in your organization has instant access to information whenever and wherever they need it – helping you preserve lives and infrastructure. GeoMedia Smart Client has highly configurable rules, dynamic life-cycle workflows, feature-level access control, data validation and behavior, and easy integration with other systems.

DATA MANAGEMENT AND DELIVERY

During a disaster, municipalities can deliver and distribute geospatial information via a cloud-based portal. With this tool, you can effectively manage historic and constantly updated data holdings – providing critical insight into disaster planning before the event, saving lives during the event, and supporting reconstruction efforts in the aftermath. ERDAS APOLLO and Geospatial Portal can help your organization quickly catalog, search, discover, process, and securely disseminate massive volumes of both file-based and web-enabled data.

CROWDSOURCING

Hexagon Geospatial's Mobile Alert simplifies reporting for citizens and allows cities to enlist the masses to help define and locate issues during disasters, such as road damage, tornado appearances, issues at shelter locations, water leaks, and more. A cloud-based service, Mobile Alert provides crowd-sourced incident information to subscribing organizations such as local governments or utilities.

MOBILE UPDATING

Hexagon Geospatial's Mobile MapWorks lets you use mobile tablet devices to update your GIS from the field. Field personnel can view and edit attributes and make simple changes to features' geometries in real-time.

You can easily customize this practical tool to meet the needs of local governments, utilities, and public works organizations that need instant updates from the field during the aftermath of a natural disaster.

STAY ONE STEP AHEAD OF THE STORM

There are some natural disasters you can predict in a fairly reasonable amount of time. Others can happen without warning. Whether you have considerable lead time on an impending event or not, you can be prepared with the latest geospatial technology to tackle whatever blows your way. Natural disasters can cause widespread disruption of services to potentially millions of people, but with Hexagon Geospatial and Intergraph's Geospatial Disaster Management solution, you can stay one step ahead of the storm. From prevention, mitigation, and preparedness to response and recovery efforts, Intergraph extends helping hands to guide you through whatever disaster appears on your municipality's horizon.

For more information on how you can make smarter decisions about your disaster preparation and response plans, visit www.hexagongeospatial. com/solutions/disaster-management.
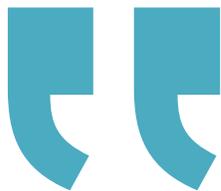
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Hexagon Geospatial helps you make sense of the dynamically changing world. Known globally as a maker of leading-edge technology, we enable our customers to easily transform their data into actionable information, shortening the lifecycle from the moment of change to action. Hexagon Geospatial provides the software products and platforms to a large variety of customers through direct sales, channel partners, and Hexagon businesses, including the underlying geospatial technology to drive Intergraph® Security, Government & Infrastructure (SG&I) industry solutions. Hexagon Geospatial is a division of Intergraph® Corporation. For

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Learn more at www.hexagon.com.