Preparing for a disaster before it hits

MAPPING RESOURCES
a Geographic Enterprises service

This guide is brought to you by HERE Technologies

The world's leading location platform, helping people, goods and organizations move more safely and efficiently for over 30 years.

Is this eBook for you?

You've come to the right place if you're interested in:

- Enhancing or establishing your department's scenario and disaster planning
- Reducing the time-to-incident for emergency responders
- Empowering first responders to be better prepared before and during an incident
- Viewing the disaster life cycle more strategically

Or you associate with one of these groups:

- Public safety agencies; from fire and police at the state and local level to homeland security and disaster response at the national level
- Public safety technology leaders including Chief Digital Officers, Chief Data Officers, Chief Information Officers, GIS directors and more
- Emergency management leaders and experts, emergency response professionals, emergency communications managers, National Guard leaders and many more

Transform scenario planning

Public safety is society's first line of defense against threats to the well-being and security of its citizens, whether it be an incident, a hazard or an act of nature.

There are many goals public safety officials need to balance: reducing incident response times, using taxpayer funds efficiently and effectively coordinating incident and disaster response. But the most important goal is saving more lives.

As emergency management continues to evolve as a core competency of government, scenario planning is taking center stage in enhancing disaster readiness. This invariably requires strong data and the ability to infer or forecast what may occur in the future.

In a **study**, EY found that only 9% of respondents believed they were "very confident" in their company's forecasting abilities and 35% shared they were either "not at all confident" or "not very confident." While EY's study focused on the private sector, we believe the maturity of the public sector's forecasting and scenario planning to be similar.

For public safety officials, we define scenario planning as an exercise that helps you plan for a realistic crisis, assess your readiness and outline how your community will make decisions and respond to changing variables.

Whether your scenario planning process is well-established or relatively basic, location-enabled solutions can help your department avoid common road blocks and reach its full potential.

CDP Center for Disaster Philanthropy

"We need to look at the full arc of a disaster life cycle. You can't neglect scenario planning in the world we're living in right now. If everyone did the basics for instance – like establish a continuity of operations plan – that would go a long way."

- Regine Webster, Vice President of the Center for Disaster Philanthropy

The Center for Disaster Philanthropy (CDP) is a nonprofit that helps donors worldwide make a greater impact with their disaster-related giving. They also offer guidance and consulting for companies' strategic planning processes with a focus on philanthropic contributions. They help organizations design custom strategies that best align with their priorities and values.

As experts on the entire life cycle of disasters, the CDP bears witness on just how important thorough, strategic plans are in the face of disasters.

Want to talk? We do, too. Get in touch here.

The 4 avoidable pitfalls of scenario planning

Disaster preparedness is a strategic effort to mitigate the severity of incidents before they occur. Yet it has its own unique challenges that public safety agencies must account for.

Here are some of the most common:

- **Knowledge gaps** - Not having the big, over-arching picture is an obvious drawback when planning, but not being able to recognize and understand weaknesses and shortcomings within your plan and your department is a major problem.

- **Being overly optimistic** - A plan is never foolproof. Being overly confident in a single outcome or a certain plan's success and not exploring its weak points is setting it up for failure.

- **Anchoring** - Anchoring can occur when an organization focuses solely on known outcomes, ignoring other possible events, including those that are considered less likely to occur.

- **Self-sabotage and discrediting** - Even the best-laid plans can fail and fall short, leaving some to discredit the practice of scenario planning as a whole. Like any other activity, scenario planning requires routine updates, a genuine interest in the future and willingness to address shortcomings.

The good news? You can avoid these common pitfalls with regular planning, an honest evaluation of your capabilities and proper implementation.

Want to talk? We do, too. Get in touch here.
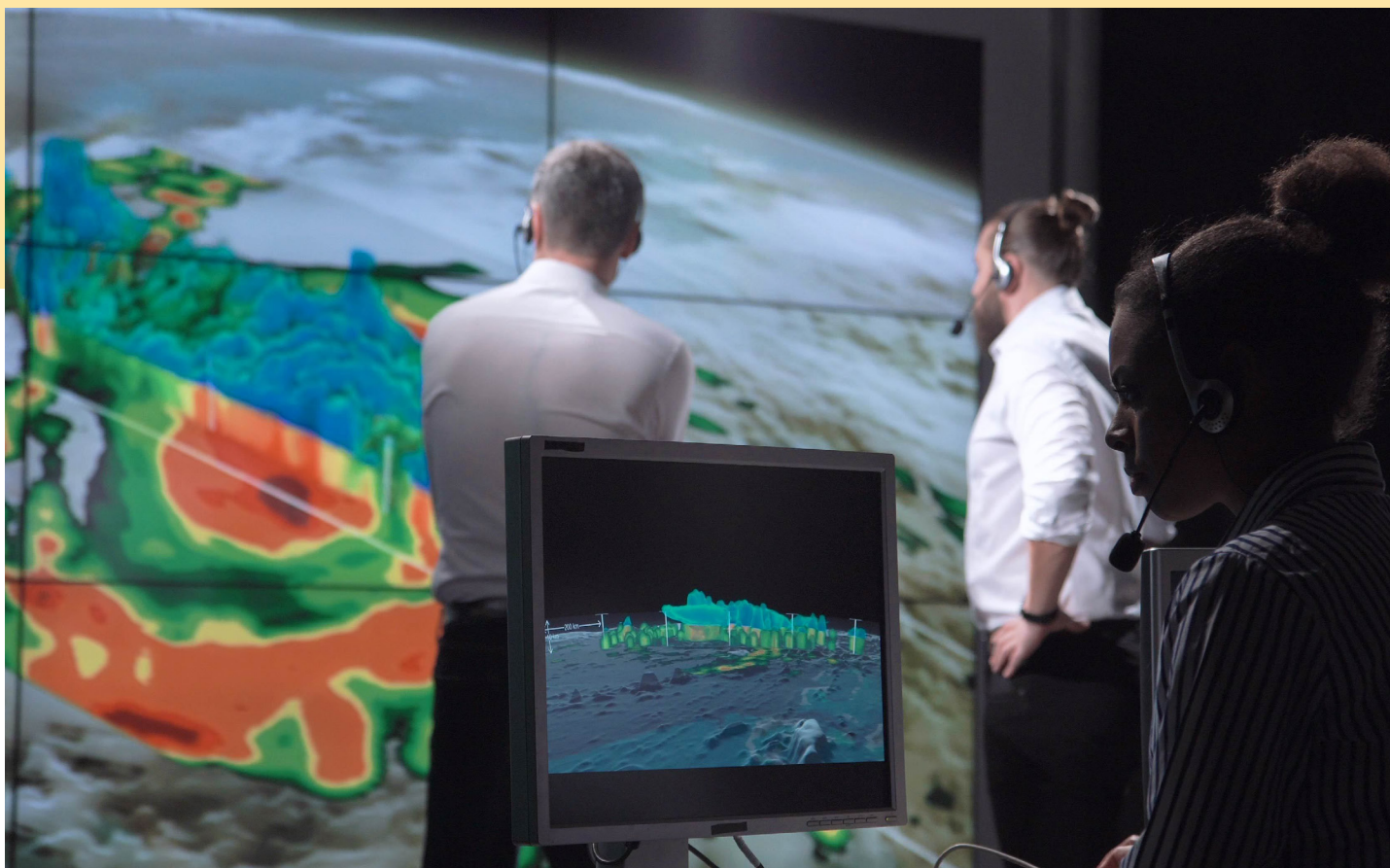
The Kubernein Initiative is an agency based in Mumbai, India that offers geopolitical research, analysis and advising. We asked co-founder and director of the Kubernein Initiative, Ambika Vishwanath what advice she had for public and private sector leaders. This was her response:

"A deeper integrated approach in policy planning is of greater need and importance. Water scarcity, depleting air quality, stress on urban growth, increasing frequency of natural disasters, etc. all need more foresight in their future scenario planning."

Vishwanath explains that future scenario planning of any one area of governance and development can no longer be conducted in a silo. Urban planning conversations require mobility, water and climate experts, disaster management authorities need to use local networks, and discussions on infrastructure development need to involve environmental experts. There should be both public and private enterprises and leaders in these conversations too.

Want to talk? We do, too. Get in touch here.

Successful scenario planning starts with data

A basic concept in emergency management is the three-step risk assessment process: hazard identification, hazard analysis and impact analysis. Scenario-based planning helps bridge the gap between hazard and impact analysis.

Collecting and analyzing data is essential for scenario planning. Local public safety organizations need to understand how they are tracking and measuring the impact of various disasters that are specific to their region. Then they can establish a cadence of re-evaluating their plan's effectiveness and ensure it stays up-to-date over time.

Take California. The top three disasters declared by FEMA in the state California include fires, floods and severe storms.

However, in 2018, a mudslide ravaged the Southern Californian town of Montecito killing 23 people and destroying over 100 homes.

Low-probability events can easily be dismissed as outliers or underemphasized, creating a false sense of precision. Assigning low-probability events excessive weight, or completely ignoring them, is a phenomenon called probability neglect. While Santa Barbara County, the home of Montecito, should focus on California's top three disasters, they cannot ignore lower-probability incidents that could effect their particular region as well.

> "Disaster preparedness is super important for strong communities. When scenario planning is done correctly, it has the power to expand the reach of first-responders' effectiveness in avoiding casualties and property damage. Public safety experts can further this life-saving impact by turning to region-specific data."
>
> – Pratik Desai, Product Marketing Manager, HERE Technologies

Want to talk? We do, too. Get in touch here.
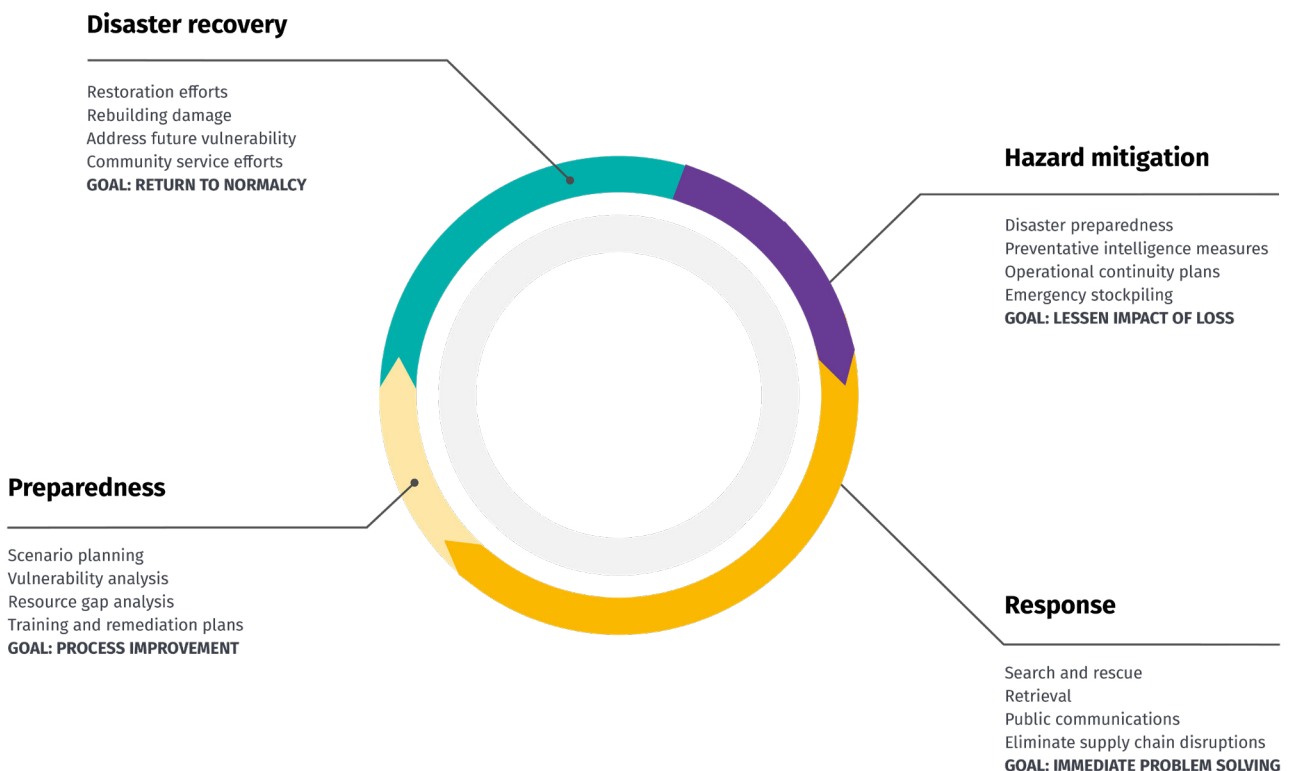
Why scenario planning matters today

During an emergency, seconds matter. Governments and organizations cannot afford to not map out the best way to respond during the emergency itself. Scenario planning allows you to preemptively develop optimal response strategies before an incident occurs.

The four stages of emergency response are part of a large body of study that prepares officials of all levels to save time and lives. While they're typically described as stages, when scenario-based thinking and planning is done properly, they work more like a cycle.

In most cases — evident in cities across the world — the response stage is by far the largest. It receives a majority of the funds and attention; most governments spend drastically more on response than on preparedness.

The downside? A disproportionate focus on the response stage keeps operations trapped in reactionary mode.

Redistributing that attention and funding into the areas of hazard mitigation and preparedness would better position resources and experts who operate within the response stage.

Disaster recovery

Restoration efforts
Rebuilding damage
Address future vulnerability
Community service efforts
GOAL: RETURN TO NORMALCY

Hazard mitigation

Disaster preparedness
Preventative intelligence measures
Operational continuity plans
Emergency stockpiling
GOAL: LESSEN IMPACT OF LOSS

Preparedness

Scenario planning
Vulnerability analysis
Resource gap analysis
Training and remediation plans
GOAL: PROCESS IMPROVEMENT

Response

Search and rescue
Retrieval
Public communications
Eliminate supply chain disruptions
GOAL: IMMEDIATE PROBLEM SOLVING

Want to talk? We do, too. Get in touch here.

Logis Solutions brings HERE location technology to the front lines

Whether it's multi-incident response or predictive incident modeling, Logis provides solutions to the EMS and fire markets enabling quicker and more efficient emergency response. And for the CEO, Gil Glass, it's personal; he's worked on the front lines of countless emergencies as a first responder.

A high stakes balancing act: multi-incident response

Dispatchers must be prepared to handle concurrent incidents in a timely and effective manner. "You get the occasional one call at a time, but the reality is, it happens in batches," says Glass.

With optimal transparency, agile routing and a self-learning system, emergency responders experience:

Improved decision making and lower incidence of human error

Instantaneous incident prioritization

Prevention of duplicate resource deployment

Reduced incident response times

Empowered first responders arriving at the scene

Want to talk? We do, too. Get in touch here.

Right place, right time: predictive incident modeling

Predicting the need for emergency services and determining how long a responder may be required for a given situation is incredibly important for dispatchers. Enter predictive incident modeling. "This is about getting the right resource in the right place *before* the call happens," says Glass.

The first building block for effective incident forecasting is accurate location information. HERE provides emergency and public safety services with a detailed and up-to-the-minute picture of the roadway. It also sets the foundation for predictive artificial intelligence (AI) to be as accurate as possible.

Predictive incident modeling technology can minimize human error and make the most of data by:

- **Determining** where vehicles and resources will be in the future
- **Delivering** recommendations on how to deploy resources
- **Predicting** the times of day for busy periods and the general daily demand

- **Running** tests and cataloging which incidents are most common and where they can/will occur through incident simulation
- **Anticipating** how long the incident will take and how many resources are necessary
- **Dispatching** first responders on calls within close proximity to their end-of-shift destinations

Optimize your operations from start to finish

With HERE as its location data provider, **Logis Solutions** offers next-generation mapping in their signature product, Logis IDS. The Logis IDS' Emergency Dispatch Logic provides an easy-to-understand visual display of recommendations for the assignment of emergency resources.

From predicting and preparing for incidents before they happen, to balancing multiple incidents effectively, dispatchers and planners can utilize fully automated scheduling functions, easily determine priorities, detect specific requirements and identify the best route – indoors and out.

Want to talk? We do, too. Get in touch here.

State-of-the-art disaster response and preparedess in Cambria County

What is Cambria County?

Cambria County is a county in Pennsylvania, approximately 71 miles east of Pittsburgh with a population of less than 145,000 residents. The County Emergency Services Department utilizes innovative solutions, including location data from HERE, for improved disaster planning and emergency response. The result? A strong, cutting-edge public safety ecosystem.

Location solutions and saving lives

Cambria County developed strategic plans for various scenarios and responses including convoy routing, building evacuation and hostile individuals.

- **Convoy routing:** Responders found that access points to crucial infrastructure often prohibit larger load classifications. When it comes to convoy routing, the desired outcome was to establish a pre-determined course of action. The right location solutions can identify chokepoints and ensure timely routing and emergency response by avoiding restricted infrastructure zones, enabling emergency disaster services to efficiently access areas of interest. With issues such as these tackled in the preparedness stage, responders have more time to react to new variables as they arise in real time, such as bad weather or concurrent incidents.

- **Building evacuation:** In a building evacuation, responders face challenges with routing, gathering equipment and identifying entry and exit points. The ideal outcome is establishing a pre-determined course of action to ensure timely routing and response. Through practice scenarios, responders can determine beforehand where to park fire truck ladders and other emergency vehicles. With location technology, responders can obtain detailed views of every building, street and intersection to help confirm incident locations. Incident commanders can then pinpoint safe access routes for response crews and equipment and plan the most efficient response.

**Want to talk?** We do, too. Get in touch here.

- **Hostile encounters:** With a hostile encounter, the major roadblock is understanding and establishing the line of sight of the hostile individual and emergency responders. Location enabled-solutions not only help responders respond to these types of incidents but they also fuel effective practice scenarios resulting in a pre-determined course of action. With location technology, responders can establish a comprehensive line of sight, identify areas to close down and determine where to place EMS and other responders. With the right tools before and during an encounter, responders can coordinate across multiple agencies for a fast and effective response.

In their own words

Connecting the dots across the public safety ecosystem featuring Steve Kocsis, Gil Glass, Art Martynuska (Deputy Director & Emergency Services Coordinator of Cambria County) and two HERE experts.

Watch the webinar: ART OF LOCATION →
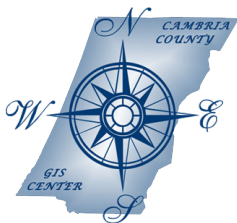
"When pre-planning with location technology [for a hostile individual scenario], we're going to see chokepoints, we're going to be able to understand ahead of time what we are able to see and what we cannot, what's going to be the best place to stage individuals – we don't want to aggravate the situation by having a big show of force, so those people need to be out of sight. It helps us to determine those types of locations and it also helps us determine communication lines."

– Steve Kocsis, Geospatial Information Systems (GIS) Director for Cambria County, Pennsylvania

Want to talk? We do, too. Get in touch here.

Save lives with location

Benefits of a location-enabled emergency planning and response include:

Building a culture of preparedness and disaster readiness

Improved community safety

Faster first responder arrival times

Reducing the complexity of emergency response

Increased transparency and visibility into data blind spots

Improving critical infrastructure and international trade security (ports, airports, international transit centers and bus depots)

Enabling better coordination and inter-agency communication, as well as better communication with the public

New data-driven insights to facilitate continuous improvement

HERE location-enabled solutions take a two-pronged approach to improving the reach and effectiveness of disaster preparation and response, focusing on: routing and visualization.

The ways in which location technology make first responders more effective are perhaps more evident. Accurate real-time maps and routing increase the speed for site identification, they reduce transit time to incidents and they enable quicker incident resolutions. Burgeoning technologies such as 3D maps, curated points of interest databases, high definition imagery and analytical services augment the everyday activities of public safety officials to protect and serve the community.

Location technology, however, also helps public safety officials in the planning and preparation phase *before* the incident occurs, too.

Adding location technology into your scenario planning can improve its accuracy and efficiency. The following HERE solutions and services can help increase the success rate of your planning initiatives:

HERE Places Extract & Places Portal, HERE Places, Places Footprints, Building Footprints

These map content solutions bring a higher level of accuracy (indoor and out) when planning emergency responses by offering additional insights about points of interest and the traffic in and around them.

- **HERE Places Extract** - A downloadable artifact containing points of interest for a given location.

- **HERE Places** - An online database of points of interest that includes dozens of attributes.

Want to talk? We do, too. Get in touch here.

- **Places Footprints and Building Footprints** - These are great tools to determine how much human traffic passes through a given location. They provide information on where people go, at what time, and what's open during a particular time.

- **HERE Maps** – A mapping solution that goes beyond simply navigating from A to B by including over 1,000 data attributes such as road topography. It helps public safety officials visualize locations of emergency service stations, rescue centers, and district offices creating hyper-realistic simulations and actionable plans for various scenarios.

- **HERE Lidar Data** - One of the most important solutions to enabling successful scenario planning is HERE Lidar Data, which offers a 3D geospatial view of the environment. Agencies use it to pan an entire landscape from an aerial view and measure crucial distances such as the distance from a car to an entrance, the height of a curb to prevent a fire truck from damaging its tires when parking, or a building's height to determine how tall a ladder can extend when fighting a fire.

- **HERE Indoor Maps** - This solution provides a 3D view inside of a building including all floors and rooms. It works as a great complement to HERE Lidar Data and helps paint a more accurate picture for response planning.

- **HERE Geodata Models** - While similar to Lidar Data, HERE Geodata Models focuses on the environmental elements such as buildings, trees, light poles and billboards on the land. It can be used to plan IOT networks for connected cities to ensure optimal connectivity and reduce signal degradation, as 5G signals on higher level frequencies cannot penetrate obstructions such as buildings, walls or trees. Thus, HERE Geodata Models can be used for site selection and the optimal placement of sensors and beacons to facilitate telematics in next-generation public safety IOT infrastructure.

Want to talk? We do, too. Get in touch here.

Conclusion

Every day, those on the front lines of disasters face complex challenges before they even reach their destination; often navigating traffic congestion, unexpected road closures and work zones as fast as possible. When they do arrive at the scene, they have an all new set of challenges, whether it's locating the nearest fire hydrant, evacuating crowds or shutting down certain roads to the public.

There is a way to help first responders and prevent avoidable casualties, and that's by being properly prepared before disasters strike. Only location technology can provide the level of accuracy necessary for enhanced scenario planning and emergency response.

Together, we can save more lives.

Further reading

Logis Solutions case study: Getting to patients faster

[Read the Article]

Solutions: See how HERE helps optimize the public sector

[Read more]

Guide: Three ways real-time location empowers emergency services to respond faster

[Read the Guide]

Watch the webinar: The Art of Location, Episode 1: Enhancing Emergency Response

[Watch the Webinar]

About HERE Technologies
HERE, a location data and technology platform, moves people, businesses and cities forward by harnessing the power of location. By leveraging our open platform, we empower our customers to achieve better outcomes – from helping a city manage its infrastructure or a business optimize its assets to guiding drivers to their destination safely. To learn more about HERE, including our new generation of cloud-based location platform services, **360.here.com** and **here.com**.

About Mapping Resources
Mapping Resources is partnered with HERE to provide you with amazing customer service and on-demand answers you can't find anywhere else.

Save time, get answers, and try HERE free for 30 days when you work with Mapping Resources.
(888) 848-4436