

An Integrated Approach to Resource Management for Public Safety and Emergency Management



The objectives of resource management

In the middle of an emergency, getting the right resources, to the right place, at the right time can prove the difference between life or death. Those are the stakes of resource management in a nutshell.

What's resource management actually? It's the organisational function dedicated to coordinating and overseeing tools, processes, and systems that help provide managers with appropriate resources in an appropriate timeframe.

That timeframe doesn't have to be dictated by an emergency. Indeed, we can all stand to benefit from better allocating resources whether for business-as-usual work, special projects, or incidents.

That being said, some of the best resource-handling frameworks have emerged out of emergency management. Those frameworks set out to help teams and agencies improve operational flexibility and enhance capacity. The ultimate goal being to help teams and agencies to solve problems quickly (but not carelessly). The frameworks do so by offering a series of best practices that emergency management and public safety agencies, whether working individually or in concert with mutual aid partners, can deploy to effectively respond to incidents.

The National Incident Management System (NIMS), for instance, lays out a standardised approach to resource management. The approach is based on a few core concepts:

-  A consistent method for identifying, acquiring, allocating, and tracking resources.
-  Standardised systems for classifying resources to improve the effectiveness of mutual aid assistance agreements.
-  Coordination to facilitate the integration of resources for mutual benefit.
-  Use of all available resources from all levels of government, non-governmental organisations, and the private sector, where appropriate.
-  The integration of communications and information management elements into organisations, processes, technologies, and decision support.
-  The use of credentialing criteria that ensures consistent training, licensing, and certification standards.

NIMS essentially boils down to proper planning before an incident, during which time organisations should inventory and categorise their resources by kind and type, including size, capacity, capability, and other characteristics. The resources themselves include the following:

-  Equipment or assets
-  People (both staff and volunteers); they have:
 - Special expertise
 - Information about the threats or hazards
-  Communications and warning technologies, including fire protection and life safety systems
-  Materials and supplies
-  Funding
-  Facilities

Challenges to resource management in a business-as-usual context

While certainly helpful, NIMS and other frameworks are just that, structures. Teams and agencies will have to turn theory into practice, not only before an emergency but also in the context of business-as-usual work and special projects. To do so, they will have to overcome some common operational challenges.

For one, business-as-usual work, even when central to the well-functioning of an organisation, often remains far less transparent to decision makers than special project work. In consequence, business-as-usual work gets treated as unproductive and expendable, while special project work is perceived as lucrative and time sensitive.

Another challenge is that geographically dispersed teams, increasingly common in this era of social distancing, generally experience greater difficulty in coordinating their resources. What's more, teams often deploy the wrong resources to a project and end up wasting crucial time. The same goes when communication flows are inefficient and resource documentation is inadequate.

Often at fault is poor resource capacity planning. Poor resource capacity planning then leads to poor resource allocation. That means the best resources get overbooked and overburdened with trivial projects by managers who don't understand core project demands. The overall failure of resource optimisation in turn creates inefficiency and confusion.

What can be done to improve resource management? Simply increasing the visibility of business-as-usual work is a start.

But how? In most existing resource management solutions, business-as-usual work often gets notated as if it were just another project. Tasks and activities need to be clearly laid out, so as to justify resource allocation for each business-as-usual activity.

Resource management challenges inherent to multi-agency incident response

Those resource management challenges only get exacerbated in an emergency management context, where incidents happen (and evolve) quickly. Without proper planning, teams and agencies will find themselves overwhelmed by the volume of unplanned resource requests. Resources themselves (human and otherwise) will be shuttled along without proper transition periods between deployments.

In the case of disasters, teams also have to avoid the negative consequences of resource convergence. That's when people, goods, and services are sent into an emergency zone all at once. Convergence can lead to resource congestion, which only hinders the delivery of aid.

Another wrinkle: in the case of large-scale emergencies, multiple agencies will usually respond in concert. Emergency response providers can include federal, state, and local public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel agencies, and authorities. That's quite the mix.

Each one of those responding agencies, however, brings with it its own set of competencies, experiences, and systems. That creates huge issues for effective resource allocation. Common resource management challenges in that context include:



Poor inter-agency communication. Technical issues make it exceedingly difficult to exchange information between emergency agencies and with field personnel. For instance, researchers have pointed out that during large-scale emergencies, multiple agencies will use the same radio channel, causing severe network strain.

Also, it's natural that individual agencies will have developed a unique set of terms to describe emergency situations. Those terms might mean something different to another agency, which makes communicating hard.



A lack of shared situational awareness. Agencies rarely share information through common emergency management software. And the software solutions they do use tend to be essentially locked down from each other, preventing external access or easy integration.

Instead, agencies and individual teams rely on verbal communication, even during major emergencies. That's undesirable because in these situations, time is scarce and face-to-face interaction is often impossible.

An overreliance on face-to-face interaction can also create information overload for responders. And often, the right information doesn't get to the right person at the right time or doesn't get prioritised when it's most pressing.

Emergency situations are by nature highly fluid and changeable, so information flows need to keep up in order to be effective.



Failure to understand external organisational structures. When partnering under extreme time constraints, individual practitioners rarely stop to calmly evaluate the responsibilities, needs, plans, and tactics of their participating agencies. The lack of mutual understanding can easily lead to efforts being duplicated and time lost.

Additionally, emergency agencies often bring slightly different ideas and plans to the emergency zone. Without inter-agency coordination ahead of time and effective communication during the crisis, those plans won't meld, creating misunderstanding and recrimination.

The role of resource management technology in improving collaboration, communication, and situational awareness

Effective collaboration requires a clear understanding of roles, responsibilities, and, of course, resources. Teams need a strong, shared understanding of the situation at hand.

But achieving that level of situational awareness can be impossible without the right resource management tools, especially for teams who rely on verbal interactions and manual processes.

Instead, teams should look for a robust, integrated emergency management system to help increase operational effectiveness, achieve shared situational awareness, increase the speed of command, and enhance security. The ideal system should have the following features and functionality:



Mapping. Location tracking of resources in relation to assignment locations helps teams find the closest available resources quickly.



Mobile app. Mobile-optimised software helps teams communicate with staff and volunteers wherever they are.



Rostering and scheduling. Enables teams to create flexible resource assignment structures that can be filled and activated when needed.



Resource allocation. Helps teams better engage with staff and volunteers to confirm availability and assign roles via email, SMS, and/or voice recording.



Certification and documentation management. Ensures that documents are managed and kept up to date. Teams won't have to worry about staff or volunteers with expired certifications.

Unfortunately, resource management too often gets attached to a larger, enterprise-wide system, one originally procured and deployed to solve another business challenge. By design, that kind of system tends to be heavy, complex, and inflexible.

Extending functionality for purely resource management use cases can be complicated. What's more, information modalities tend to be unilateral and rarely mobile friendly.

Additionally, those enterprise-wide systems are usually cost prohibitive. Ongoing subscription costs easily run up into the millions, including hidden costs for protracted set up and complex implementations.

Integrated, emergency management software that stands up quickly gives you more bang for your buck. Still on the fence about updating your emergency management solution, though? Read the Five Reasons It's Time to Upgrade Your Emergency Management Platform.

Sources:

- i. Aslak Wegner Eide, Ida Maria Haugstveit, et al, SINTEF ICT: Key challenges in multi-agency collaboration during large-scale emergency management. Available at <http://ceur-ws.org/Vol-953/paper5.pdf>.



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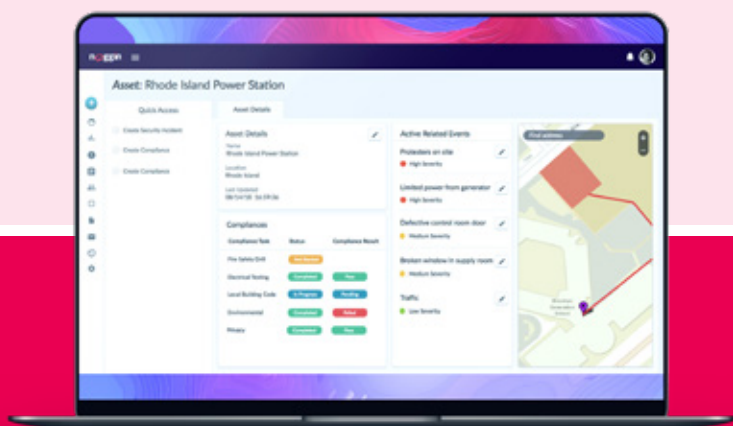
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