



## Technologies for Emergency Response Logistics

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In the post-09/11 world, local governments are faced with planning and responding to both man-made and natural emergencies. The constant threat of terrorism and the “every-day” events that our communities face on a daily basis (tornadoes, flooding, wildfires, etc.) put additional stress on the human and physical resources available to respond at the local level.

Further, Hurricane Katrina demonstrated that most private and public sector organizations are unprepared to effectively manage catastrophic events. Katrina, and then Gustav and Ike, required the mobilization of a massive number of assets and personnel across the nation. From these events, it became clear that obtaining the response and relief resources necessary to supplement local assets, especially during the “72-hour Window” where local and state resources are the primary responders, is an area that needs to be addressed.

A unique combination of emergency management expertise, physical resources, and technology is needed across all phases of the emergency management cycle (mitigation, preparedness, response, and recovery) to meet the Emergency Response Logistics needs of the post-09/11 and post-Katrina world. The local community will need to collaborate not only with their state, but with mutual aid partners, as well as other private sector and humanitarian relief organizations, in order to obtain and distribute needed human and physical resources/supplies on a timely basis.

For the last few years, the Federal Emergency Management Agency (FEMA) has been designing and testing technologies for a Logistics Supply Chain Management System (formerly called “Total Asset Visibility”). The goal of this system is to provide asset and in-transit visibility as well as electronic order management to improve the performance and accountability of national, end-to-end supply chain management of critical assets and commodities (Source: [www.fema.gov](http://www.fema.gov)).

Technologies do exist that mitigate risk, improve emergency preparedness, facilitate interagency collaboration, provide emergency supply chain/logistics, and assist in recovery from natural and man-made disasters. The goal would be to combine these technologies to create an end-to-end solution, compliant with federally-established emergency management standards (such as the National Incident Management System), that includes the following functions: **Resource Management/Logistics** (an automated database of the human and physical resources responding to an emergency, a full personnel

credentialing system, and complete warehouse/inventory management functions with Bar Code or RFID support); **Planning** (a library of Emergency Response Plans that can be selected, activated, and easily managed); **Incident Management** (a web-based event and incident management system designed with the user in mind to facilitate the workflow associated with each emergency support function and the position/roles that exist within an emergency management agency); **Operations Command & Control** (a geo-spatial mapping environment for actual, live incident response as well as logistics asset tracking, including all command and coordination functions of response participants and equipment); **Transportation/Shipping** (full management of multi-modal forms of transportation, from origination to destination, with tracking via GPS transponders); and **Simulation/Drill Exercise Automation** (a full solution for the automation and coordination of any simulation/drill exercise including standard and custom entry forms and post-drill reports).

While the above technology combination would be well-suited for a State Emergency Management Agency (and the local communities and counties which the EMA serves), the solution should also support the Mutual Aid process so that locally-affected areas can be assisted by other communities, nearby or across state boundaries. For years the Emergency Management Assistance Compact (EMAC) has offered state-to-state assistance during governor-declared states of emergency. EMAC provides a responsive and straightforward system for states to send personnel and equipment to help disaster relief efforts in other states. When resources are overwhelmed, EMAC helps to fill the shortfalls. (Source: [www.emacweb.org](http://www.emacweb.org)). The Emergency Response Logistics solution, therefore, must facilitate the EMAC process in an automated fashion.

But in the post-Katrina world, the traditional emergency management network can be overwhelmed. As a result, many state EMAs are turning to private sector partners for needed equipment and supplies. “When disasters strike, they can have a tremendous impact on a community. Fast, reliable access to vital supplies can make all the difference in areas that are facing overwhelming damage and destruction. At Walmart, we have the unique ability to draw from both our resources and our logistics network to distribute relief supplies to communities in need immediately after a disaster takes place.” (Source: [www.walmartstores.com](http://www.walmartstores.com)). 22 out of the top 50 retailers in the U.S. directly serve state EMAs as suppliers of resources. The Emergency Response Logistics solution, therefore, must have a comprehensive Supplier Management function that allows the retail community to receive and fill orders for needed supplies and equipment.

But the story doesn’t end here. Non-profit and Faith-based organizations are also playing a critical role in disaster and humanitarian relief efforts. “We rush life-saving emergency supplies like food, water, blankets, and shelter to those who need it most. We are often one of the first organizations to begin relief work after a disaster, and we remain on the ground for the long haul, rebuilding communities and restoring hope.” (Source: [www.worldvision.org](http://www.worldvision.org)). There are over 3,500 global relief organizations. World Vision has 11 warehouses of donated goods in the U.S. alone, and represents yet another source of needed supplies and equipment to the emergency management community. The Emergency Response Logistics solution, therefore, must have the ability to solicit, track, receive, and account for donated goods, equipment, and expertise (personnel) provided by non-governmental organizations.

This unique and compelling technology combination must be able to deliver daily value to users on both small-scale and catastrophic events. It must be a proven and scalable emergency response logistics and incident management software solution, designed and supported by emergency management experts, based upon the emergency management and incident command principles established by FEMA, and backed by a comprehensive training program taught by seasoned emergency managers.

The Florida Division of Emergency Management's "State Emergency Resource Management Network" (SERMN) is a perfect example of this unique combination of technologies for Emergency Response Logistics. Indeed, the SERMN is arguably the nation's first state-wide implementation of this strategic and valuable technology combination. Florida's goal for the SERMN was to implement a solution that would graphically track logistical emergency operations, whether in-state or out of state, during preparation for, response to, and recovery from, a catastrophic event, such as a hurricane landfall. Specifically, Florida wanted the capability to identify needed response and disaster relief supplies resources from local, state, federal, private sector, and NGO partners, to track the deployment and delivery of those resources, to push those resources to Logistics Staging Areas or Points of Distribution, and to account for the cost of supplies provided to disaster victims.

The SERMN is also one of the nation's only statewide, NIMS-compliant, real-time resource management systems, utilized across all Emergency Support Functions (ESFs) to collaborate for planning, response, and recovery initiatives related to resource identification, allocation, and tracking. With the SERMN, FDEM has the capability to graphically locate statewide resources needed to effectively execute Mutual Aid between counties, and between the affected county and the state. In addition, suppliers to FDEM's Logistics Section (including suppliers of equipment, water, base camps, etc.) have direct access to the SERMN and use this system to maintain their inventory availability and configurations for emergency activations. The SERMN also includes a personnel credentialing application, complete geo-spatial mapping for resource tracking and visualization, incident management, interagency collaboration, Mutual Aid automation, and field level command and control.

Today, all 67 counties in the state utilize the system, not only for logistical operations, but also for full-spectrum incident management. Municipalities and counties have the ability to share a common operating picture of the emergency event with decision-makers at the state level. This unparalleled collaboration, coupled with an improvement in speed-of-business practices, has provided these organizations with improved, collaborative emergency response and relief efforts.

FDEM and its supporting County first responders utilized this technology combination during the wildfires of 2007, various hurricane and tropical storm preparedness and response exercises events during 2007 and 2008, and in live emergency activations for Tropical Storm Fay and Hurricane Ike in 2008, as well as the panhandle flooding events of 2009. The SERMN has also been demonstrated by FDEM to other state and local agencies as a production-ready "Total Asset Visibility" solution.

FDEM's SERMN is an example of how technology can improve Emergency Response Logistics where local, state, federal, private, and NGO partners work together on a common solution to save lives and property. This proven solution is a model for post-09/11 and post-Katrina resource management.