

GIS Provides the Geographic Advantage

Reducing Response Time

The mission of emergency service providers is to protect life, property, and natural resources from fire and other emergencies. With increasing demands, they must utilize the best tools, techniques, and training methods to meet public expectations. Risk management, preparedness, and mitigation have taken on new importance with challenges facing emergency services today.

Effective response cannot be continually achieved without adequate planning and preparedness.

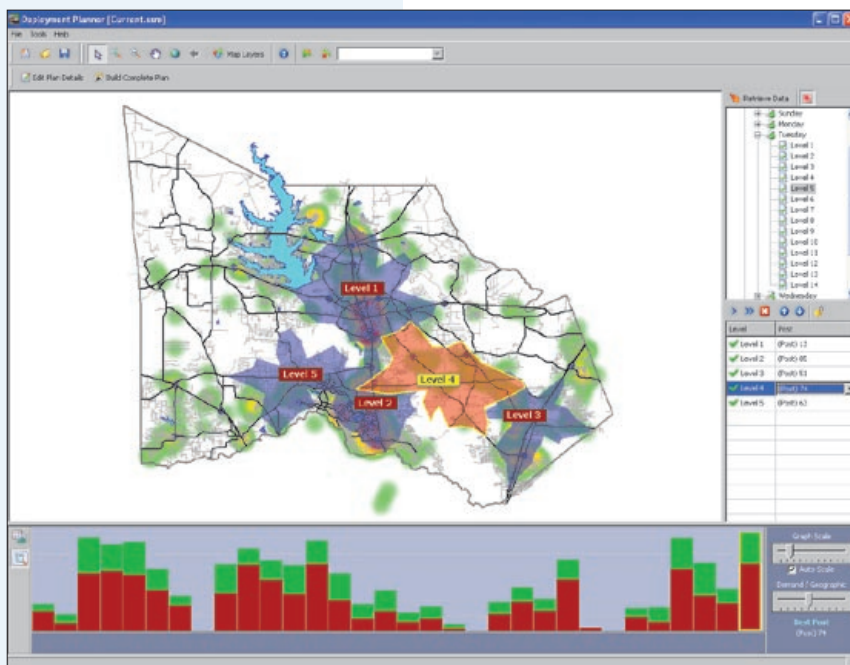
One of the emerging tools that is helping optimize emergency services delivery is geographic information system (GIS) technology. GIS supports planning, preparedness, mitigation, response, and incident management. GIS extends the capability of maps—intelligent, interactive maps with access to all types of information, analysis, and data. More important, GIS provides the required information when, where, and how it is needed.

Emergency service providers are responsible for protecting lives and property, but they have limited resources. Consequently, it is critical that resources are deployed effectively and efficiently. Optimal deployment is influenced by service demand, type of occupancy, historical incident occurrences, and response time.

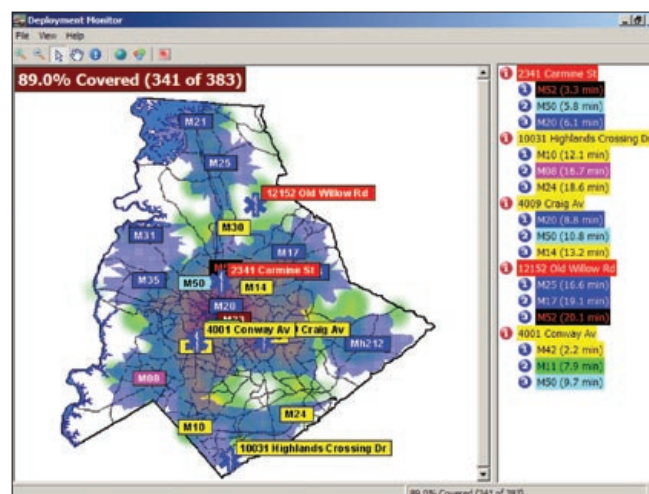
Manage Deployment with MARVLIS

Developed by Bradshaw Consulting Services, Inc. (BCS), MARVLIS™ is a complete solution for dynamically managing and deploying public safety resources to consistently meet response

time requirements while reducing costs. MARVLIS uses wireless communications and GPS technology to connect in-vehicle computers with an interface server on the computer-aided dispatch (CAD) network to report vehicle ID, status, location, speed, direction, and more. CAD dispatches are instantly displayed in the vehicle including full incident information and geographic location and the best recommended route from the current vehicle location to the incident.



MARVLIS Deployment Planner application



MARVLIS Deployment Monitor application at MEDIC (Mecklenburg, NC, EMS)

ESRI, the world leader in geographic information system technology, and Bradshaw Consulting Services, Inc., superior in providing advanced digital solutions in GIS for public safety, are working together to help first responders unlock the power of GIS.



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Monitors in the dispatch center display each public safety vehicle on an ESRI® GIS-based map along with its dynamic service area (DSA), which represents the distance each vehicle can travel in a specified response time. Displayed in the background is a map of historical call-demand hot spots that is refreshed every five minutes. These hot spot maps are generated by time of day/day of week, using previous incident data logged in the CAD database, and are used to

best represent probable call demand. By ensuring that the high call-demand areas are always covered by vehicle DSAs, you will be best positioned to reach any incident in the required response time.



MARVLIS client application

The MARVLIS interoperability extension provides the ability to track and monitor vehicles from multiple agencies in a single unified map-based display. Information can be displayed from multiple CAD systems and different automatic vehicle location (AVL) platforms to provide each agency with a joint tactical common operational picture to better serve the public.

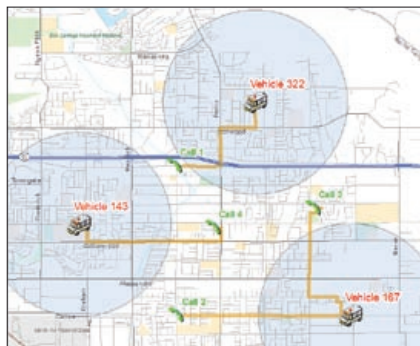


MARVLIS in action at Sunstar EMS (Pinellas County, Florida)

MARVLIS Highlights

- Developed on ESRI software platform
- AVL and in-vehicle navigation (IVN)
- Silent dispatch received from CAD system
- More efficient routing by time of day/day of week
- Real-time system status management (SSM)
- Move-up recommendations
- Dynamic vehicle coverage areas
- Displays geographic view of current call-demand probabilities
- System status plan generation
- Analyzes and edits post and station locations

EMS call routing using "as the crow flies" buffer circles does not always equate to the closest unit. Using GIS, drive time, distance, and street impedances are interpreted to determine the unit closest to the call.



To learn more about reducing response times with GIS, visit us on our Web sites at www.esri.com/publicsafety or www.bcs-gis.com.

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GIS aids emergency medical response by

- ▶ Identifying emergency call locations
- ▶ Providing dispatchers with closest available unit information
- ▶ Determining the quickest route to the call and appropriate medical facilities
- ▶ Analyzing incident volumes and trends for staffing purposes
- ▶ Tracking disease outbreaks



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