

# GIS Provides the Geographic Advantage

*For Informed Response*

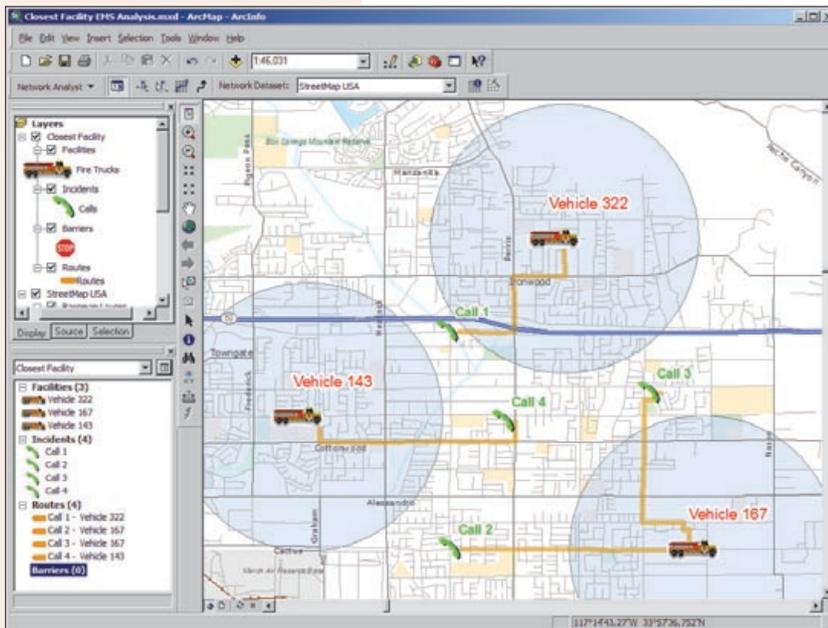
The mission of the fire service is to protect life, property, and natural resources from fire and other emergencies. With increasing demands, the fire service must utilize the best tools, techniques, and training methods to meet public expectations. Risk management, preparedness, and mitigation have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

response requires adequate planning and preparedness. One of the emerging tools that is helping the fire service optimize its 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.

Fire departments are responsible for protecting lives and property, but they have limited resources. Resources must be deployed effectively and efficiently. Optimal deployment is influenced by fire demand, effective firefighting force size, type of occupancy, historical occurrence of fires, and response time.

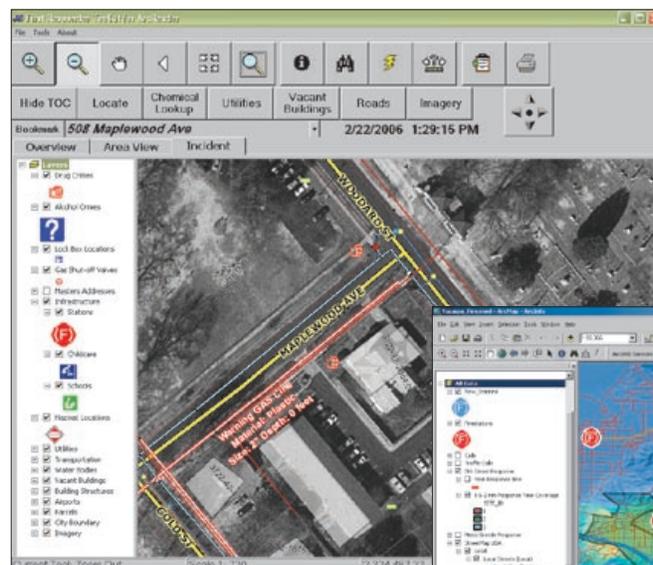
Keeping firefighters safe is critical. GIS provides the tools to work with tactical, location-based

information such as floor plans, utility control points, prefire plans, hazardous material contents and locations, surrounding exposures, aerial imagery, and hydrant locations. Access to

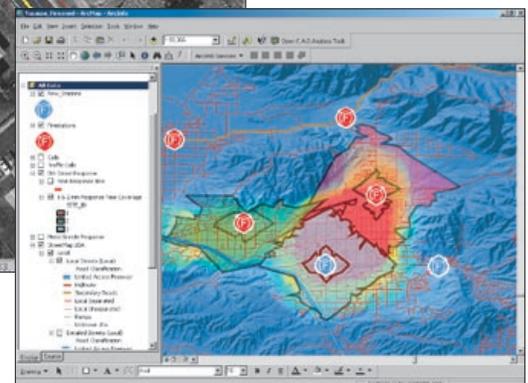


EMS call routing using “as the crow flies” buffer circles does not always equate to the closest unit. Using GIS, drive time, distance, and street impedances are interpreted to determine the unit closest to the call.

*GIS provides a visual, spatial means of displaying data, allowing first responders to integrate and leverage their data for more informed decision making.*



*In-vehicle application with various views gives first responders access to critical information prior to arriving on scene.*



*Call density hot spot and response time analysis polygons are used to determine optimal station location.*

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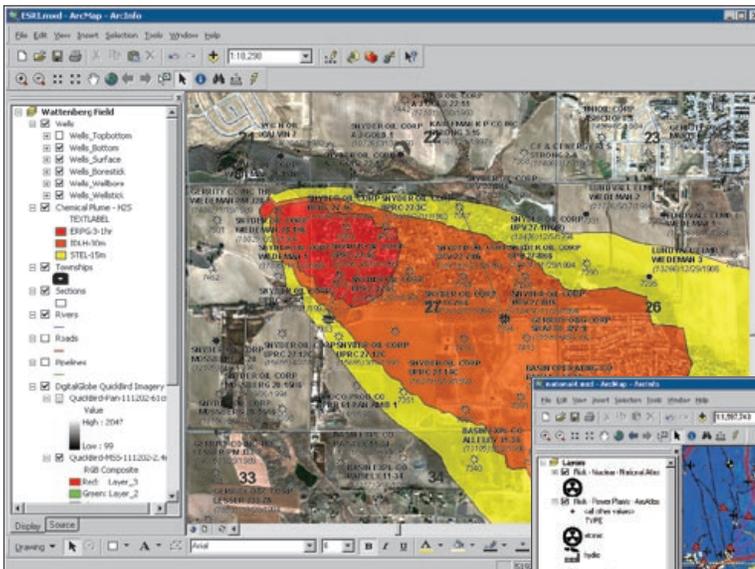
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this information while en route or on scene allows firefighters to deploy more quickly, effectively, and, most important, safely.

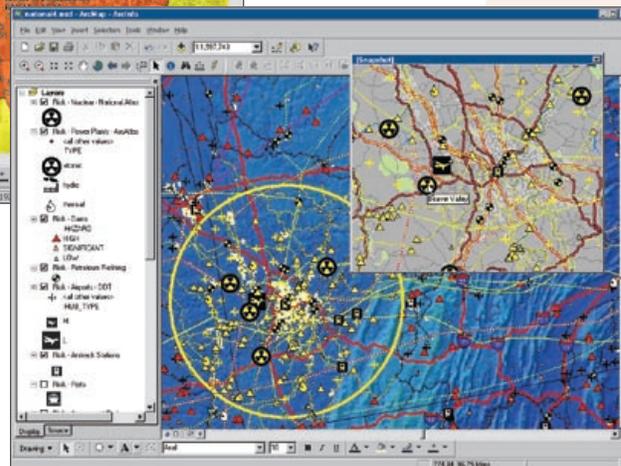
GIS models a community or landscape; analyzes and displays features important to the fire service mission; and provides access to important documents, photographs, drawings, data tables, and so forth, associated with features on the GIS map display. GIS analyzes and measures response time capabilities; identifies incident hot spots by time and day of week; and targets hazards, hydrants, and other information important for deployment analysis. First responders have immediate access to critical information for emergency incident locations or best route and detailed information about the building or facility to which they are responding. Incident commanders maintain better scene control with detailed maps and imagery of the emergency location as well as the exposures and features around it. GIS is essential for managing large-scale emergencies or disasters where large numbers of public safety resources are deployed with various assignments during a dynamic incident. Resource status, event prediction, incident facility identification, public information dissemination, and incident status are all more effectively and efficiently performed using GIS.

## GIS aids the fire service mission by providing

- ▶ Staffing requirement information
- ▶ Station and apparatus location
- ▶ Incident trend analysis
- ▶ Real-time perimeter mapping
- ▶ Response time analysis
- ▶ Risk assessment
- ▶ In-vehicle data access
- ▶ Command and control



Hydrogen sulfide plume modeling and area of dispersion using GIS software from ESRI



Citywide risk assessment and planning for critical infrastructure protection

Discover how ESRI GIS software gives you the geographic advantage in solving your fire service's mission critical needs. Visit us on our Web site at [www.esri.com/publicsafety](http://www.esri.com/publicsafety).

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