

Photo courtesy of Massachusetts Emergency Management Agency

# What Runs behind the Scenes at the Boston Marathon

Think back to spring 2013, to the 117th running of the Boston Marathon, the world's oldest annual marathon.

The event is always held in April on the Massachusetts civic holiday Patriots' Day, which commemorates the start of the American Revolutionary War. It's a spirited race that attracts international media coverage and draws 30,000 runners, on average, along with half a million spectators. That day in 2013, two bombs exploded at the finish line, killing 3 people and wounding 260.

The following year marked record-high participation from runners and spectators under the rally cry "Boston Strong." And by 2015, the Massachusetts Emergency Management Agency had produced the Boston Marathon Dashboard, an online map that tracks every aspect of the event as it happens.

The technology behind the dashboard is remarkable: layers of real-time data, information that's clickable and zoomable, and a map that can be viewed and updated from any device by hundreds of people. But what matters most, even to the people who built and use the dashboard, is that it keeps people safe.

If the bombing attack left participants and spectators fearful and made police and public officials feel vulnerable, the Boston Marathon Dashboard could take away some of that fear and give people back a sense of control.

Desiree Kocis is the geographic information system (GIS) professional who built the dashboard. "It hosts dynamic web map layers including live weather and traffic, real-time tracking of runners and emergency vehicles, and information about emergency situations. And there are 20 static layers that can be turned on or off, as needed, to show helicopter landing pads, National Guard staging areas, or medical facilities," Kocis explains. "In case of an emergency, all responders involved can quickly zoom in to emergency shelters to see status changes, capacity, contact person, and phone numbers."

Kocis was hired by the Massachusetts Emergency Management Agency in early 2015. She had about six weeks to learn how to use ArcGIS<sup>SM</sup> Online—a cloud-based mapping platform from Esri—and then build the dashboard.



"I had never used ArcGIS Online, but I knew it was the only way to build the dashboard and push out all that information to so many different people," she said.

She used Operations Dashboard for ArcGIS®, a Windows- and web browser-based app that's part of ArcGIS Online, to provide a real-time view and common operating picture; connect live data feeds; and integrate other maps, charts, and gauges.

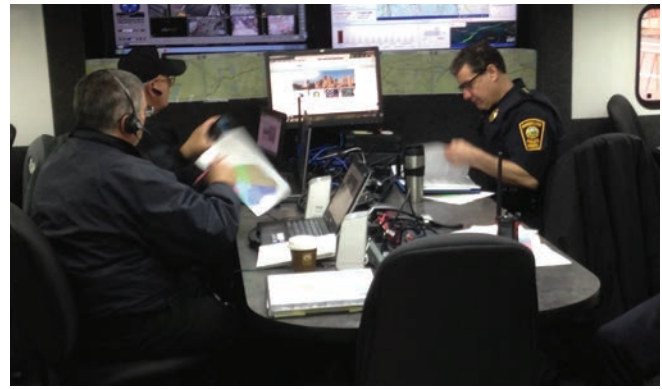


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During the race, crews on the ground used Collector for ArcGIS, an iPhone app that's also part of ArcGIS Online, to do real-time tracking of police cruisers, ambulances, and other emergency vehicles.

"I felt such an amazing sense of accomplishment that I was able to contribute to the safety of the runners and spectators, of the cities along the course, and of the infrastructure of the commonwealth," Kocis said. "We all crossed the finish line that day."

## Technology Stack

ArcGIS Online  
Operations Dashboard for ArcGIS  
Collector for ArcGIS

## By the Numbers

1 real-time map  
450 people gaining situational awareness  
60 different agencies sharing data  
6 weeks to learn ArcGIS Online and build the dashboard



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