



SeaTac Airport Improves Emergency Response with Better Asset Tracking Using Capturx

The Port of Seattle serves tens of millions of air and sea passengers each year. The Port's passenger cruise terminals routinely handle nearly 200 ship calls and 755,000 passengers per year. Seattle-Tacoma International Airport (SeaTac), which is run by the Port and among the top 20 US airports, handles 31 million passengers per year. Sea-Tac Airport is run almost as a self-contained city including its own 911 emergency response system, complete with police, fire, and swat departments. Among the best practices employed by the Port, is the use of Capturx for ArcGIS to efficiently track and manage emergency equipment using digital pens and GIS software.

Summary

Customer: Seattle-Tacoma International Airport, among the top 20 US airports, handling 31 million passengers per year.

Challenge: Efficiently tracking 1200 emergency equipment asset locations and entering it into the GIS system, for use during 911 dispatch calls.

Solution: Capturx for ArcGIS, enabling teams to capture data by writing on paper maps with digital pens, which instantly digitize and integrate the data into ArcGIS.

Results: Teams easily collect data and automatically get exact locations for all the emergency equipment on centralized maps. Quick, easy, and cost effective way to collect important data that had never been collected before.

Challenges

With tens of millions of passengers passing through the Port's facilities, the Port must be prepared for a broad range of contingencies, including health emergencies. A good example is heart attacks, which strike unexpectedly and require immediate treatment for the best chances of survival. The survival rate of heart attacks at SeaTac airport is twice the worldwide average for airports, putting it among the best in the world.

Immediate response to treat health emergencies or public safety issues requires rapid dispatch of first responders through the airport's internal dispatch center. However, while emergency teams are in route, it's often the 911 caller that initially starts the emergency response, following instructions over the phone from 911 operators. That first response often includes use of one of the airport's 1000+ fire extinguishers to put out fires or one of their 200+ portable defibrillators (AED) to help save heart attack victims.

To improve tracking those emergency assets and to enable dispatches to tell callers exactly where to go to get the right equipment, the port decided to add the 1200 fire extinguishers and AEDs to their GIS system. The Port maintains 35 integrated floor plans of Sea-Tac Airport's multi-story buildings in AutoCAD and those files are imported into an Enterprise GIS database. The challenge was how to efficiently capture the data for the 1200 assets and enter it into the GIS system. Deploying laptops wasn't practical – not only because of weight, battery life, and fragility – but the data collectors weren't necessarily trained ArcGIS analysts.

Solution: Capturx for ArcGIS

To quickly get the data into ArcGIS, the Port selected Capturx for ArcGIS, enabling teams to capture data by writing on paper maps with digital pens, which instantly digitize and integrate the data into ArcGIS. The GIS team simply followed the first responder teams on their equipment inspection routes and marked the location of each piece of equipment on the floor plan using the digital pen.

“Capturx brought us worlds ahead of where we were before. Now we can get exact locations for all the emergency equipment on our centralized maps.”

“There are really no effective alternatives for this type of mobile GIS data capture. Unless you want to lug around a mobile computer with you, there’s nothing like Capturx.”

ERIC DRENCKPOHL
Enterprise GIS
Manager

As the inspection teams wrote on paper maps, the digital pen left a normal ink record on paper in addition to instantly recording and storing the digital data on the pen. When the pen was later connected to a PC by USB cable, all the handwritten data was automatically integrated into ArcGIS. In addition to capturing redline annotations; the team was also able to actually create GIS features for the defibrillators and fire extinguishers using pen and paper. By simply touching their digital pens to a defibrillator icon on the legend of the paper map, for example, they were able to create new defibrillator point features.

When they were finished, rather than having to collect all the paper and manually re-enter all the data into the GIS system, the team instantly had an updated source map that they could provide the 911 dispatch center.

Benefits

Centralized asset management

Before the team mapped the emergency equipment with Capturx, there was never a description of their location. Now, all equipment data appears on centralized maps and plans, enabling the dispatch operator to visually confirm the location of the closest extinguishers and AEDs on maps and then direct first-on-the-scene 911 callers to the right locations. For example, operators can tell callers to “walk thirty feet down the corridor toward Terminal C and turn right at the bookstore.”

“Capturx brought us worlds ahead of where we were before. Now we can get exact locations for all the emergency equipment on our centralized maps. It’s a real revolution for us to capture and track information with Capturx. This gives us more context than we’ve ever had before, a fuller richer base map with 1500+ locations.”
Eric Drenckpohl, Enterprise GIS Manager, Port of Seattle

Easy data collection

Data capture using digital pens was an easy way to automate the data capture process without changing the simple and reliable method of writing on paper maps and plans. The pen is durable, easy to carry, and the data upload can be performed by nearly anyone. Teams don’t need to be trained as GIS analysts to collect GIS data. They also don’t have to work around the weight, fragility, limited battery life, or key-hole view with mobile computers.

“Capturx has proved to be a quick, easy, and cost effective way to collect data that has never been collected before.”
Eric Drenckpohl, Enterprise GIS Manager, Port of Seattle

Less cost and risk

Avoiding mobile computers also avoided expensive new computer hardware, software, support, and training. Capturx automatically creates a paper backup of all information collected. If the digital pen is lost, it can be replaced at a fraction of the cost of a rugged laptop while the data remains intact on the paper. By having data written once, Capturx minimizes the risk of data transcription errors.

“There are really no effective alternatives for this type of mobile GIS data capture. Unless you want to lug around a mobile computer with you, there’s nothing like Capturx.” Eric Drenckpohl, Enterprise GIS Manager, Port of Seattle