IoT Starts with Real-Time GIS

Keith Mann and Greg Tieman

GIS INSPIRING WHAT'S NEXT

ArcGIS & the Internet of Things

What is the Internet of Things?

A network of physical objects that contain embedded technology to communicate and sense or interact with their internal states or the external environment

Field Data Collection

Real-time Coordination of Work

Sensors & Data Feeds

Application of Real-Time GIS

Dashboard keeps a historical record of the number calls for service and types of calls over time

Southwest Texas Fusion Center

San Antonio, TX

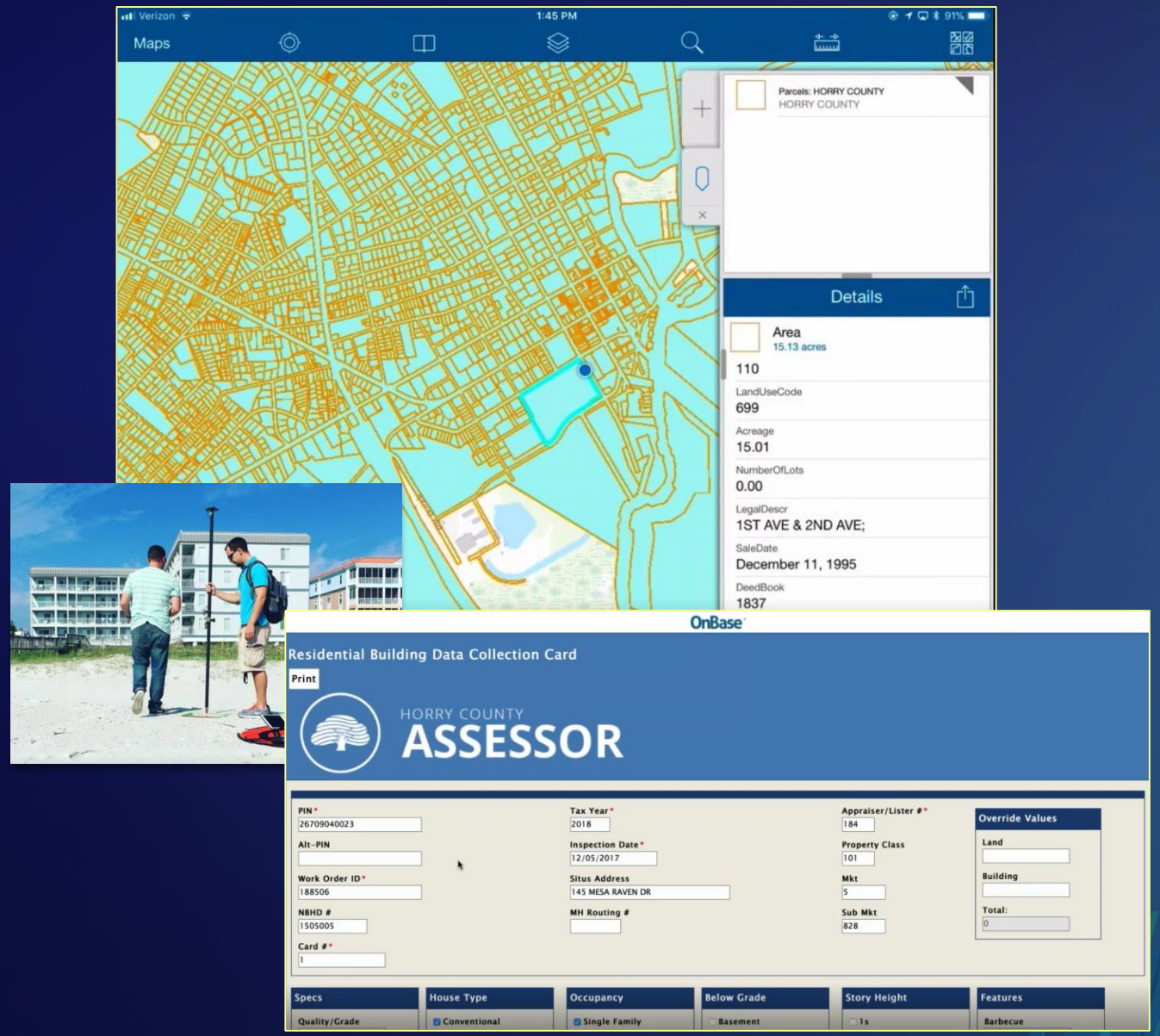
The Fusion Center now centralizes calls for service and aggregates intelligence from a variety of different systems. Using mobile phones for the NCAA event made fusion easier than ever before by getting everyone on the same page fast.

"That's really the power of a web-based map. You have nothing to set up except granting people access and sending them a URL."

- Aric Jemenez, special projects manager

Internet of Things + GIS

Internet of Things + GIS



Horry County, South Carolina

Storm Damage Assessment

IT/GIS supports 64 departments, including Assessors, Public Safety, and Permitting, and everyone of them uses GIS in one form or another.

"Tightened budgets; [tech-savvy consumers, including], both citizens and employees; and always having to be ready for a potential hurricane place a demand on us to continue to push the envelope and provide GIS solutions."

- Tim Oliver, Director of IT/GIS

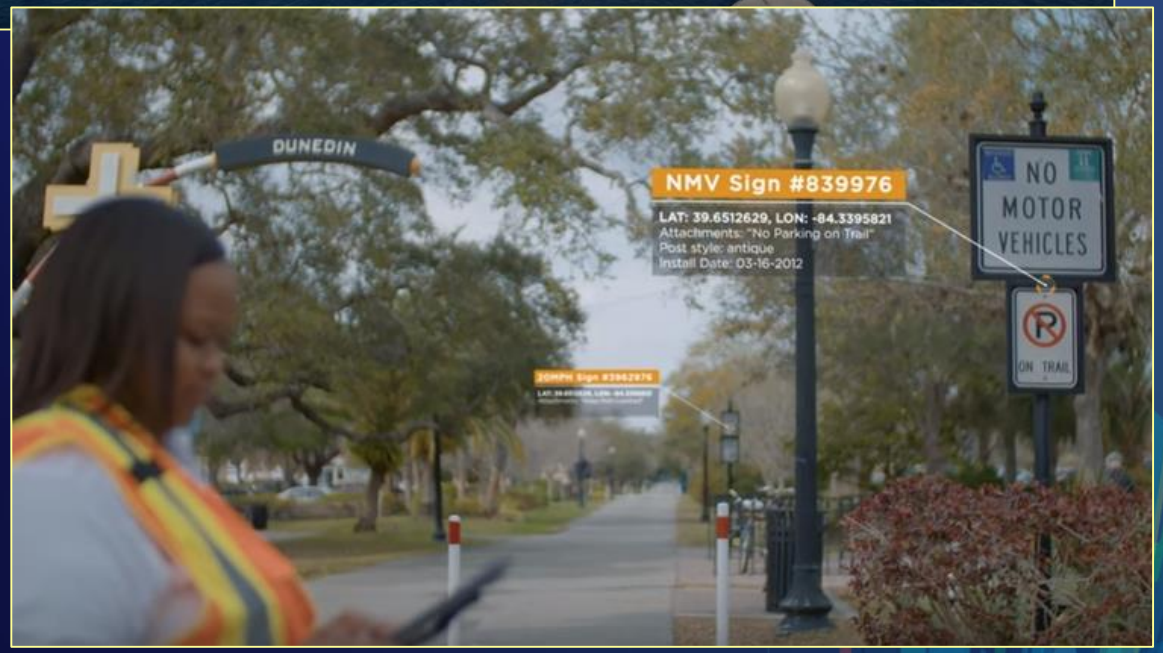
Pierce County, Washington

Public Works and Utilities

Pierce County's cleaning and assessment costs associated with regulation compliance dropped to $60 per catch basin.

"Supervisors can see locations of all work orders spatially, using appropriate work-task filters. They have total access from the office or field and they can see up-to-date work order status—with pictures—and adjust schedules as work is completed."

- Bryan Chappell, Water Quality Supervisor

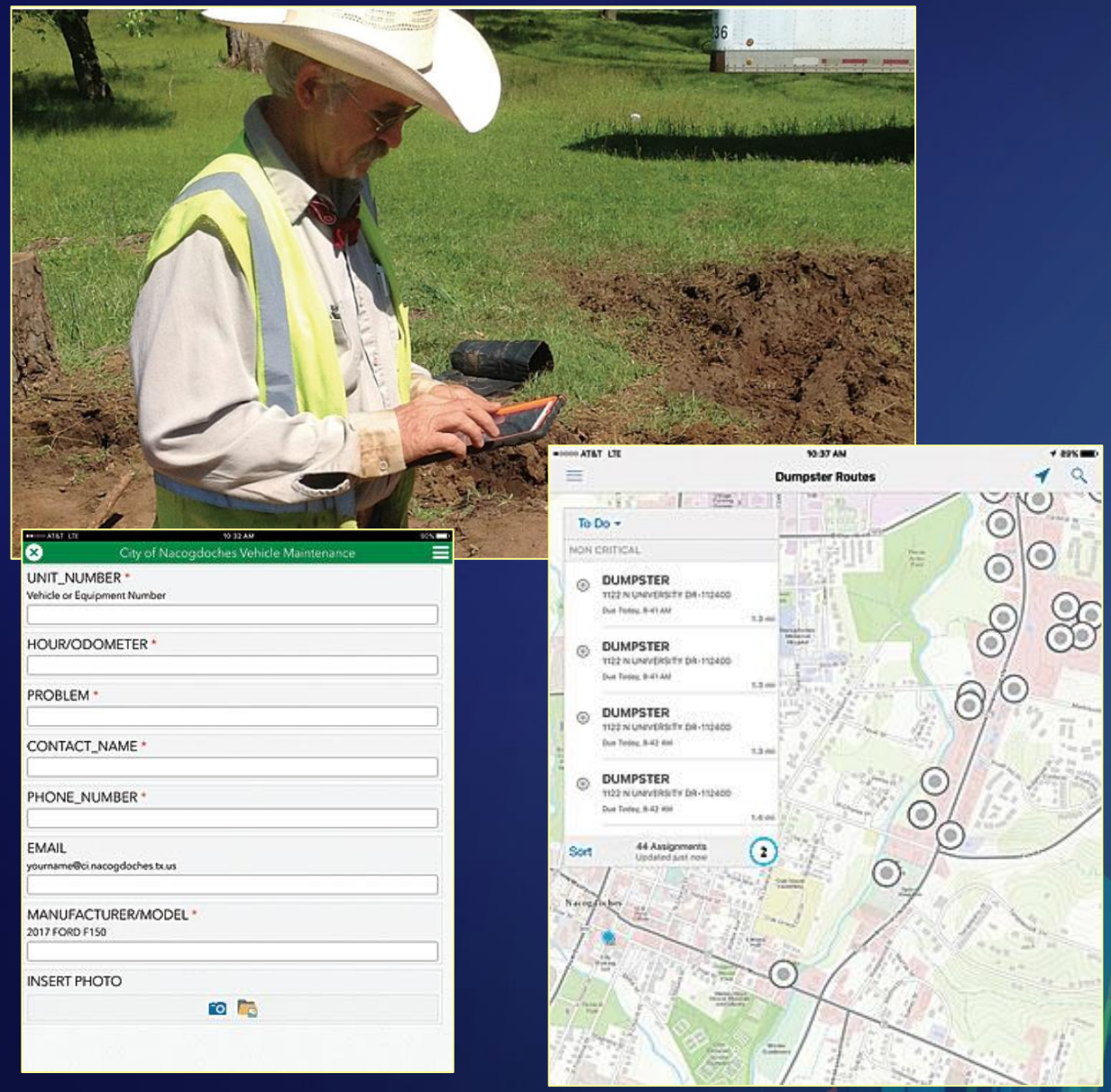


Pinellas County, Florida

Departments and municipalities access the real-time data, analytics, and read-to-use engagement tools they need to drive efficiency and innovation. Pinellas County Enterprise GIS Steering Committee prioritize where and how to fund projects that ultimately deliver better services and cost savings to the public.

"Esri has been instrumental in helping us architect a robust, sustainable, and scalable enterprise GIS for Pinellas County's employees and citizens."

- Martin Rose, Chief Innovation Officer



City of Nacogdoches
Public Works Department

Using ArcGIS Online, Collector and Survey123 allowed the maintenance team to be much more organized, especially since the work was being done by offices and garages that don't normally communicate with each other.

"These applications have saved the city from purchasing outside software packages and have saved time and money on a daily operational basis."

- Toy Kratofil, Metro Region Administrator

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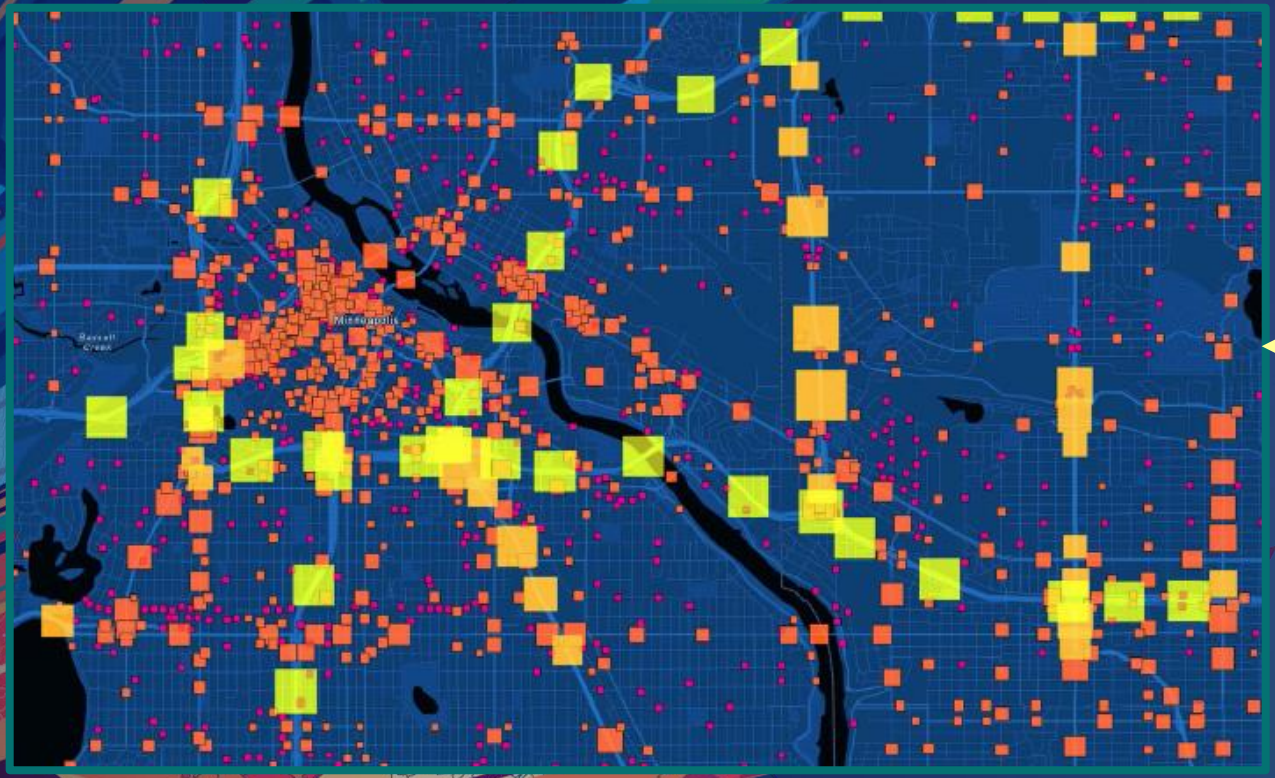
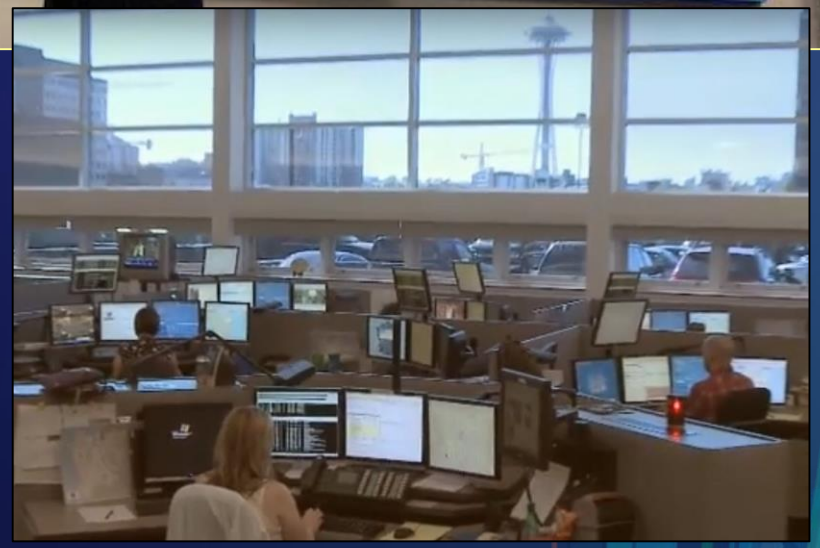


Demonstration



Seattle, Washington

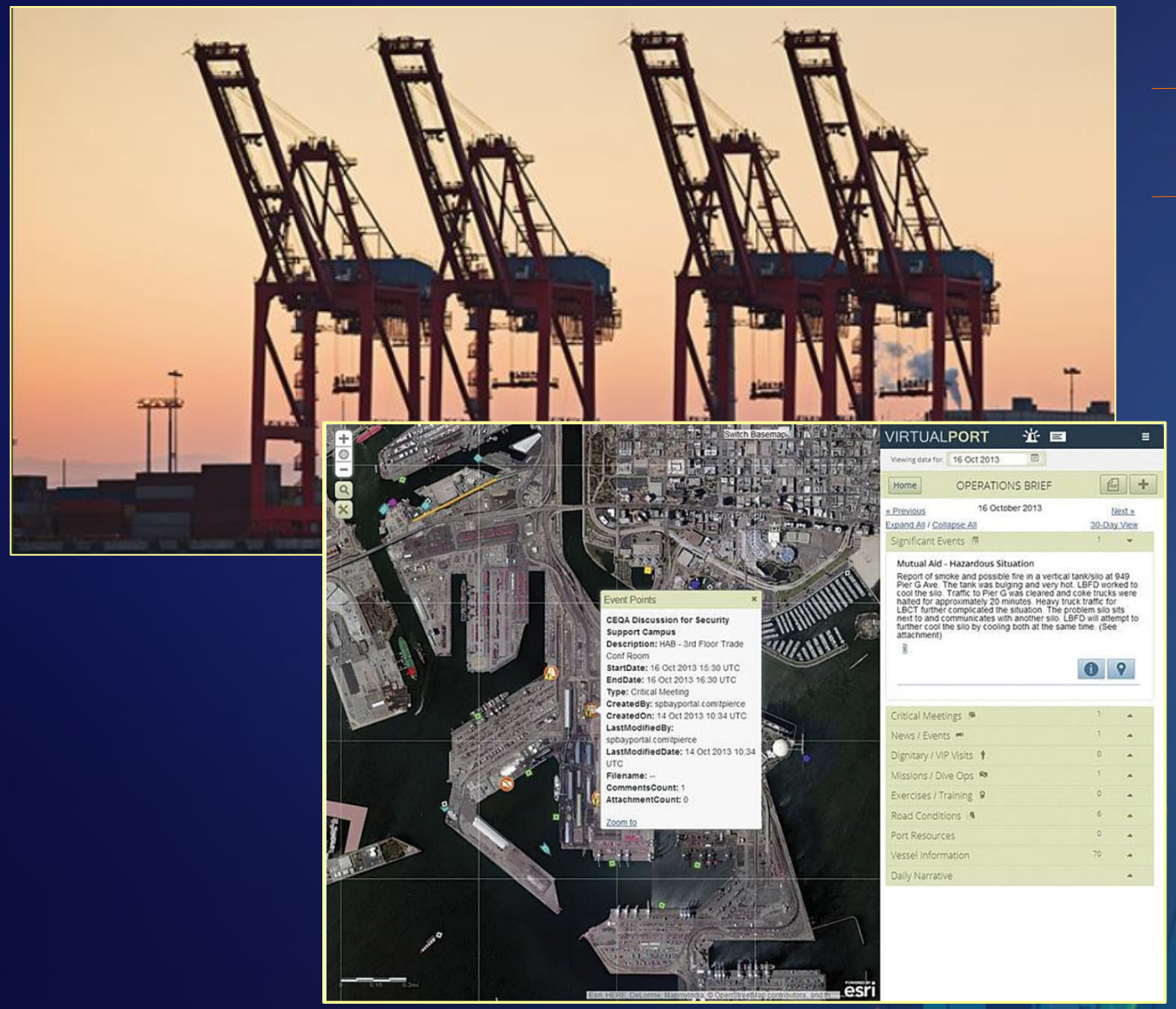
Seattle Police Department

The department's Real-Time Crime Center allows them to see what crimes are being reported citywide in an effort to respond to them more quickly.

"We're able to share the same information, the same view, using the common operating pictures, so that when there's a need to make a change, everyone is working from the same sheet of music."

- Dick Reed, Communications Director

Internet of Things + GIS



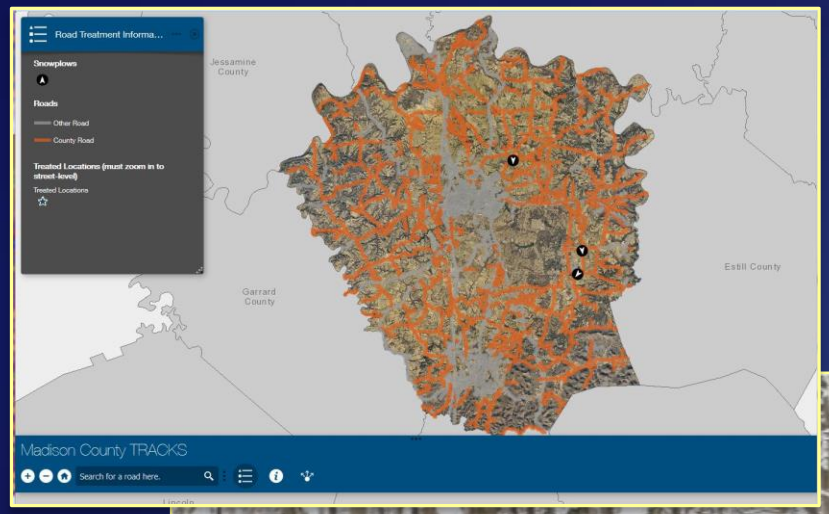
Port of Long Beach

Security and Operations

Occupying more than 3,200 acres (or 13 square kilometers) of land with 25 miles of the waterfront, the Port of Long Beach poses a major challenge for security operations

"While Virtual Port provides us with a clear operational picture of our extensive day-to-day security activities, we have found that it is also helping lower our business operating costs by streamlining those processes."

- Randy Parsons, Director of Security



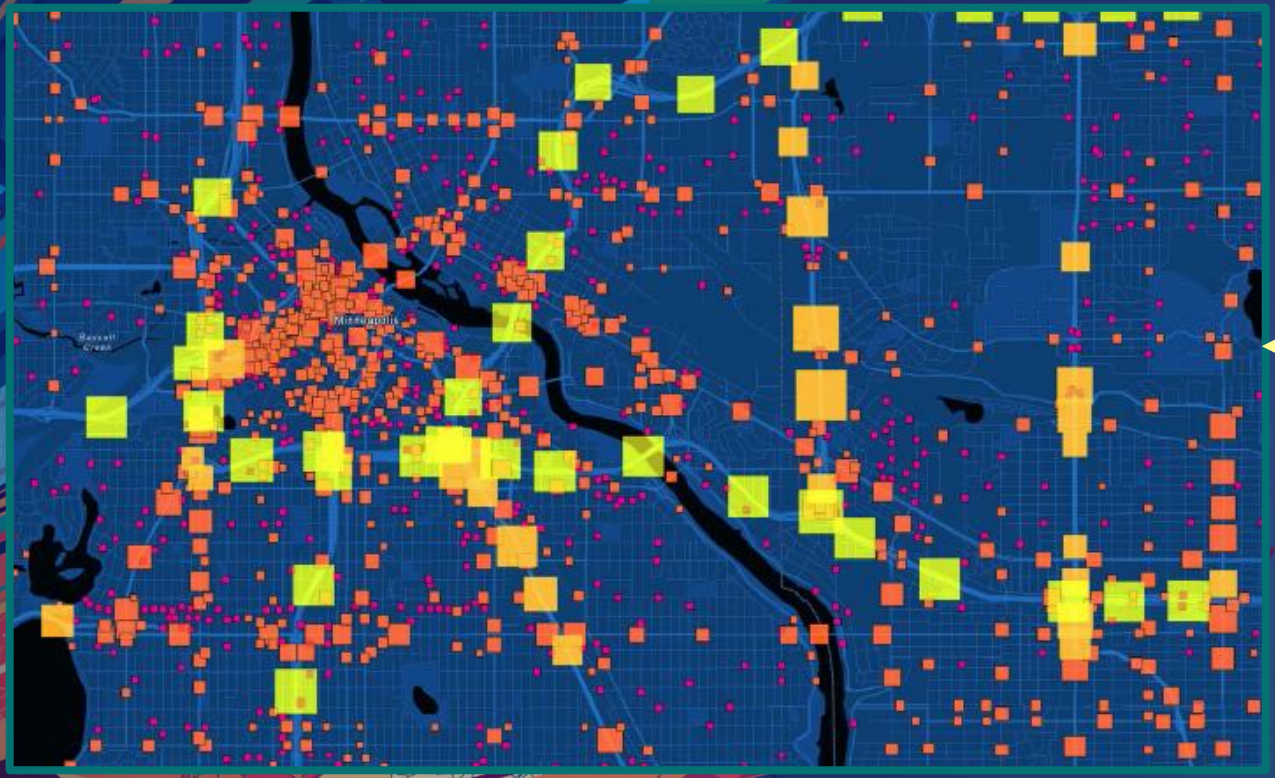
Madison County, Kentucky

Office of Emergency Management and Communications

The county deploys its fleet of 22 snowplow trucks. The crew covers a road network that's spread across 443 square miles, which presents a challenge when the snow falls thick and fast.

"In the past, the frustrating perception was that we don't plow at all. Our drivers plow for the mandated limit of 16 hours, rest, and go back out again. With citizens seeing the activity, the response changed to appreciation."

- Megan Tucker, GIS coordinator



Demonstration

Takeaways

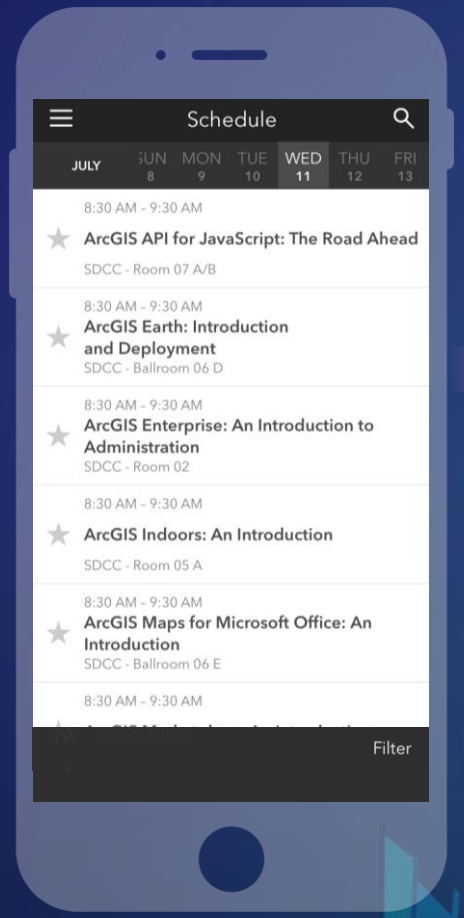
- Put the Internet of Things to work
- Two worlds of real-time data
  - Coordinating work
  - Application of Real-Time GIS
- Think Edge to Enterprise
- Improve situational awareness and operational efficiencies.
- Monitor real-time data feeds from stationary sensors.
- Track assets in motion, such as vehicles, vessels, and aircraft.
- Open a secure portal to the Internet of Things (IoT)

Become a Real-Time Government

Please Take Our Survey on the App

Download the Esri Events app and find your event

Select the session you attended



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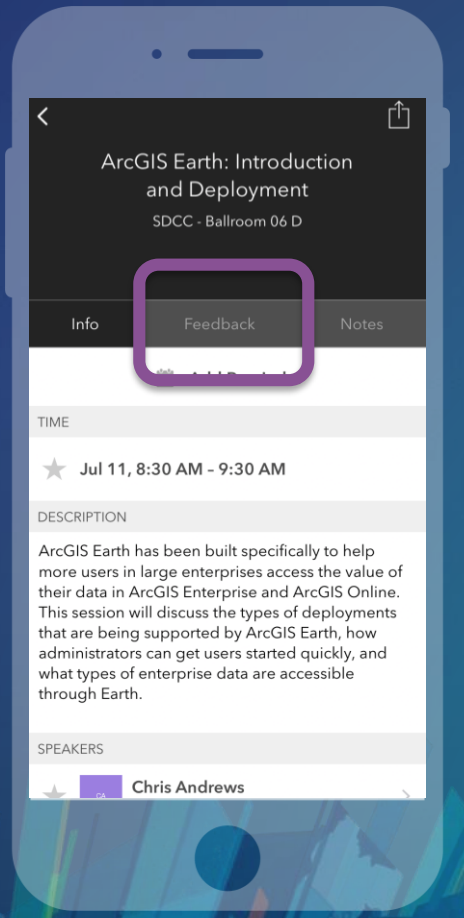
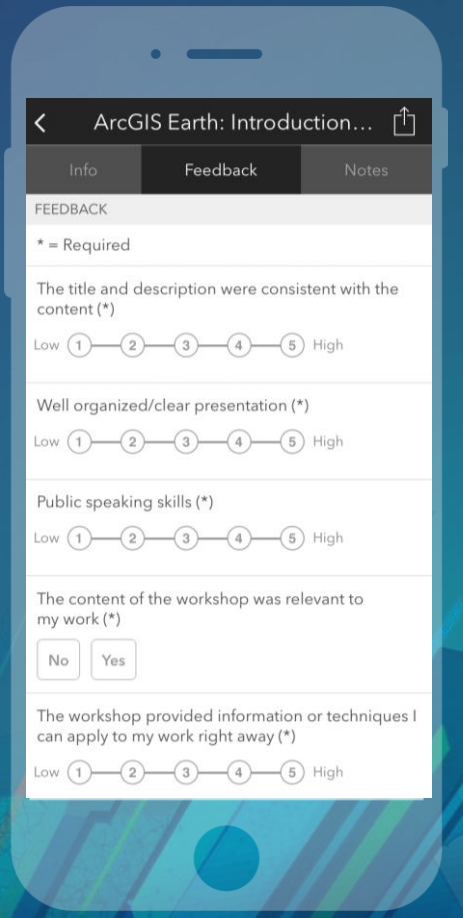


Complete answers and select “Submit”



See more about Real-Time GIS - TUESDAY

	Session	Location	Time
	ArcGIS GeoEvent Server: Applying Real-Time Analytics	Room 31 B	2:30 – 3:30p
★	ArcGIS GeoEvent Server: An Introduction	Room 04	4:00 – 5:00p
	Collector for ArcGIS: An Introduction	Room 10	4:00 – 5:00p
	Emergency Management: Solutions for Daily & Incident Operations	OPS Center - Hall B1	4:00 – 5:00p
★	Waze, ArcGIS, and Cityworks Enhancing Community Engagement	Ballroom 06 C	5:30 – 7:00

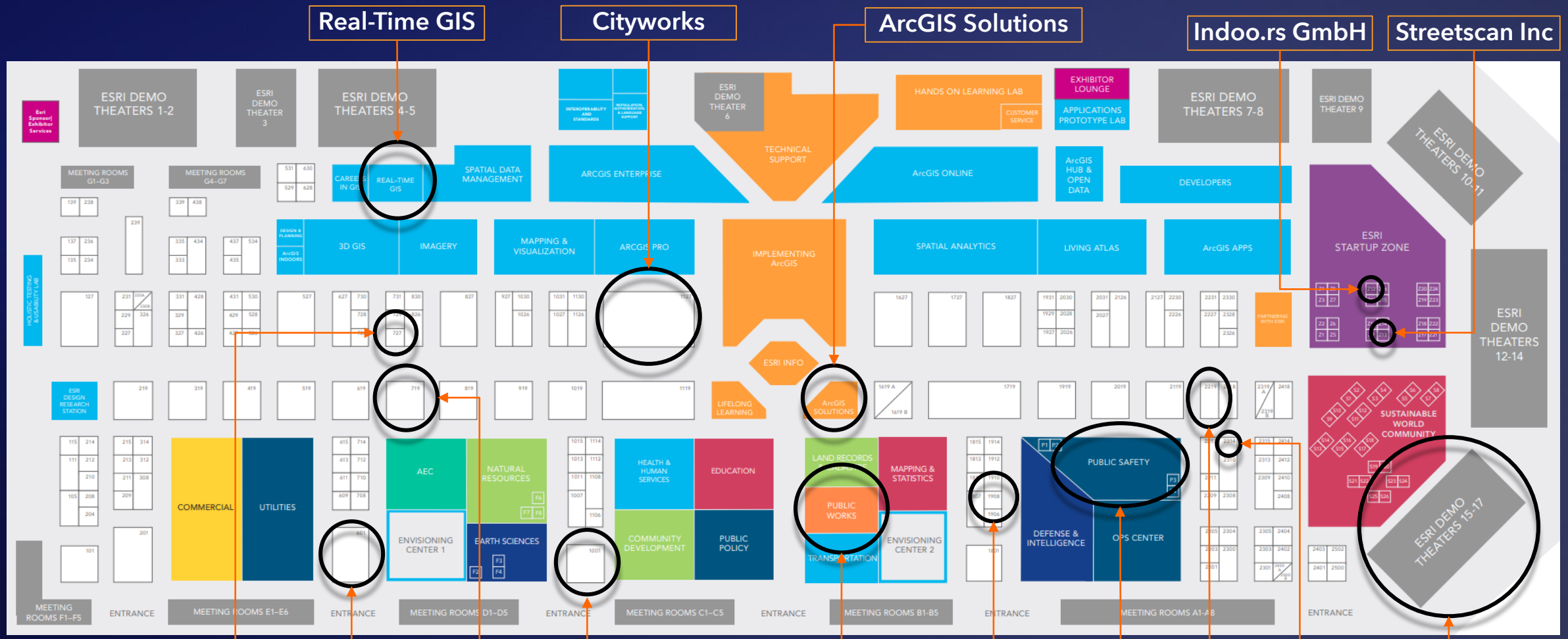
See more about Real-Time GIS - WEDNESDAY

Session	Location	Time
★ Fighting Snow with Data	Room 24 C	8:30 – 9:30 a
Real-Time & Big Data GIS: Leveraging the Spatiotemporal Big Data Store	Room 05 B	8:30 – 9:30 a
Workforce for ArcGIS: An Introduction	Room 14 B	8:30 – 9:30 a
★ ArcGIS and the Internet of Things (IoT)	Room 03	10:00 – 11:00a
GIS in Public Works: Real-time, Analytical, Collaborative and Engaged	Envisioning Center 2 - Hall B1	
Real Time Crime Management, Spatial Digital Transformation at the Modesto CA PD	Room 28 A	1:00 – 2:00p
★ Real-Time & Big Data GIS: Road Ahead	Room 05 B	1:00 – 2:00p
Operations Dashboards for Public Safety	Demo Theater 16	1:15 – 2:00p
★ Real-Time & Big Data GIS: Best Practices	Room 17 B	2:30 – 3:30p
ArcGIS GeoEvent Server: Applying Real-Time Analytics	Room 15 B	4:00 – 5:00p
★ Operations Dashboard for ArcGIS: An Introduction	Room 05 B	4:00 – 5:00p
Operations Dashboards for Public Safety	Demo Theater 16	4:00 – 4:45p

See more about Real-Time GIS - THURSDAY

Session	Location	Time
★ Real-Time Monitoring of Public Works Operations*	Room 24 C	8:30 – 9:30 a
Achieving Operational Awareness from Hurricane Maria and Irma*	Room 28 B	10:00 – 11:00a
Making Cities Smarter*	Room 24 C	10:00 – 11:00a
Operations Dashboard: Designing Effective Dashboards	Room 30 D	10:00 – 11:00a
★ Real-Time & Big Data GIS: Road Ahead	Room 15 A	10:00 – 11:00a
Developing a Real-Time GIS Strategy	Implementing ArcGIS Spotlight Theater	10:30 – 10:50a
GIS in Public Works: Real-time, Analytical, Collaborative and Engaged	Envisioning Center 2 - Hall B1	11:15 – 12:00p
Real-Time & Big Data GIS: Leveraging the Spatiotemporal Big Data Store	Room 14 B	1:00 – 2:00p
ArcGIS GeoEvent Server: Leveraging Stream Services	Room 33 C	2:30 pm - 3:30p
★ Real-Time & Big Data GIS: Best Practices	Room 14 B	2:30 pm - 3:30p

Showcase: Talk Real-Time in these areas



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