



# Defense Facilities: Improving Safety and Security Using ArcGIS

Ben Conklin and Jim Bauer - Esri

An abstract graphic on the right side of the slide consists of various geometric shapes, lines, and patterns in shades of blue, teal, orange, and red. It resembles a stylized map or data visualization with topographic contour lines and various colored blocks.

**GIS  
INSPIRING  
WHAT'S  
NEXT**





Big Data

Open

Spatial Analysis

Real-Time

Visualization

Mapping

Data Management

Content

Imagery

Mobile

# A Smart Installation is a Safe Installation





SOCIAL CONFLICTS

ENVIRONMENTAL

ACTIVE SHOOTER

ENCROACHMENT



WORK STRESS

BUDGET PRESSURES

PUBLIC ENGAGEMENT

ACCESS CONTROL



DISASTERS

FIRE

DROUGHT

FLOODING





# GIS is helping us be **SMARTER, SAFER, & HEALTHIER**



**Installations**



A 3D rendering of a city skyline, including several skyscrapers, set against a blue background. The city is overlaid with a white digital network grid of dots and lines. A large, stylized cloud shape is formed by a grid of dots and lines, positioned in the lower right quadrant of the image. The overall aesthetic is futuristic and digital.

# Our World Is Evolving

Undergoing a Massive  
Digital Transformation

Consumerization of  
Community

The New Normal



A 3D architectural rendering of a city skyline, featuring several skyscrapers and a building under construction. The scene is overlaid with a complex network of white lines and dots, representing a digital or data network. The background is a gradient of blue, transitioning from a lighter blue at the top to a darker blue at the bottom. The overall aesthetic is futuristic and technological.

# Our Vision

Enabling a  
Smarter Installation

Connecting Content  
and Providing Context



# GIS Provides the Framework and Process

For Enabling a Smarter World



Data Integration  
and Management

Visualization  
and Mapping

Analysis  
and Modeling

Planning and  
Design

Decision-  
Making

Action

Science

Understanding

Collaborating

*Transforming How We Think and Act . . .  
. . . Creating a More Sustainable Future*



# GIS Integrates Real-Time Data

Providing Dynamic Information About Everything



Web GIS

Sensors

IoT

Built Environment

Natural Environment



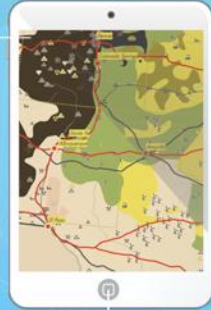
# Smart GIS Connects Everyone

Creating a System of Engagement

Supporting Real-Time Awareness and Collaboration



Communities



Organizations

People



*GIS Provides a Common Language for Communication*



# Safe Community

Sustainable

Transparent

Resilient

Responsive

Productive

Innovative

Livable

Collaborative



## What Is A Safe Community?

...one in which all sectors of the community work together in a coordinated and collaborative way, forming partnerships to promote safety, manage risk, increase the overall safety of all its members and reduce the fear of harm. ***The key feature is the creation of an infrastructure to combine their resources and interests.***



**Australian Safe Communities Foundation**

<http://www.safecommunities.net.au/index.php/becoming-a-safe-community>



**DATA DRIVEN**

**SECURE**

**INNOVATIVE**

**RESILIENT**

# What is a Safe Installation?

**EFFICIENT**

**COLLABORATIVE**

**TRANSPARENT**



## The Underlying Problems:

*Sharing static and dynamic data across agencies and organizations for shared situational awareness*

*Integrating and analyzing data into understandable and actionable information*

*Deploying mission based applications and viewers to support National Security requirements and decisions*

*Disseminating information to multiple devices when and where needed for coordinated actions*





## Regional Incidents

# 73

Last update: a few seconds ago

### Infrastructure: Telecom Outage

Central & Western Cuba - ETECSA says 80 percent of cellular service has been restored.

Created: 6/25/2018, 1:09 PM Updated: 7/3/2018, 9:32 PM

### Advisory: Boil Water Advisory

NW 41st St & NW 107th Ave - Boil water advisory reported in the area after earlier water main break.

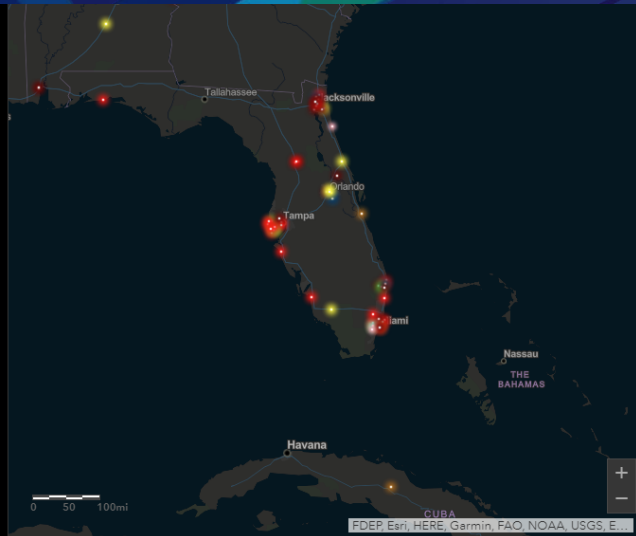
Created: 7/2/2018, 9:28 PM Updated: 7/2/2018, 9:30 PM

### Meteorological: Flooding

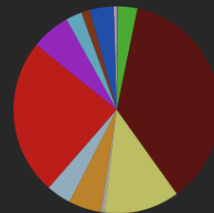
Downtown Charleston - Heavy rainfall has caused flash flooding; some roads impassible.

Created: 7/4/2018, 7:26 AM Updated: 7/4/2018, 7:26 AM

### Structural: Unsafe



- Security
- Fire
- Transportation
- Geophysical
- Infrastructure
- Aviation
- Advisory
- Hazmat
- Meteorological
- Labor
- Other



- Terrorism 2
- Hazmat 34

### Incident Frequency



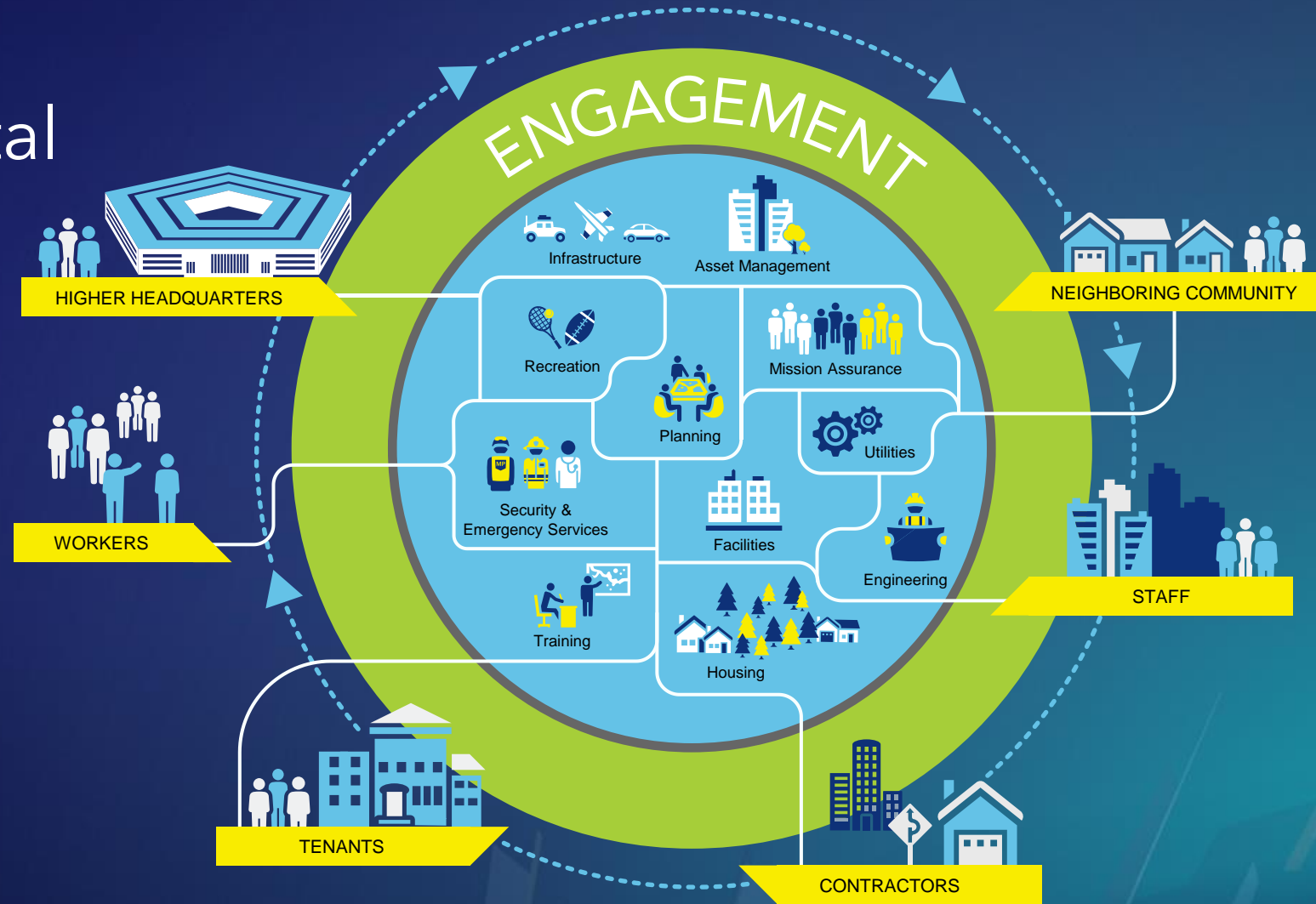
# Assessing Threats

Jim Bauer



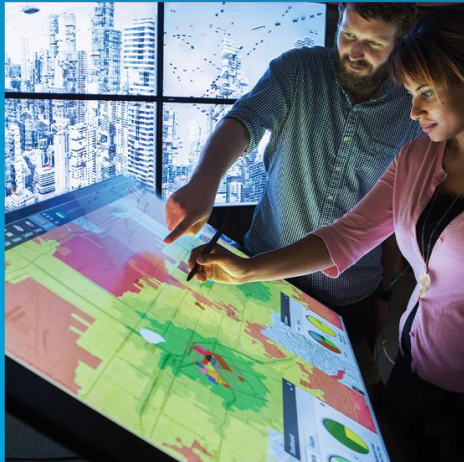
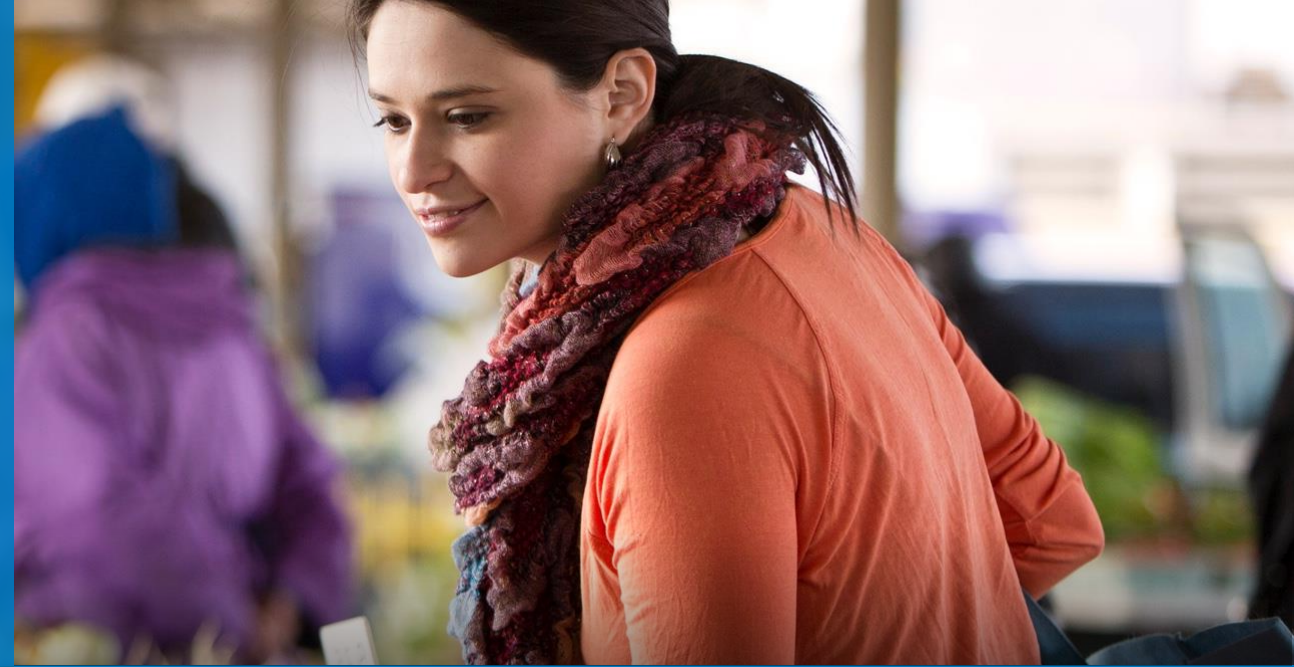
# GIS Supports Multiagency & Interdepartmental Collaboration

No matter the matter the mission or the jurisdiction, ArcGIS empowers organizations with the capabilities they need to identify threats, preserve critical infrastructure, and save lives.





# Can you confidently answer these questions?



- Is your installation healthy, are you protecting your workers?
- Are you prepared to deal with an environmental or technological events?
- Can you secure your installation during a major event?
- Can you execute modern crime control strategies?
- Can you manage emergencies or an intentional attack?
- Can you protect critical infrastructure (both physical and virtual)?
- Can you secure your perimeter and interior?



# What do you need to do?

Integrate & Exploit Existing Investments in data & Infrastructure

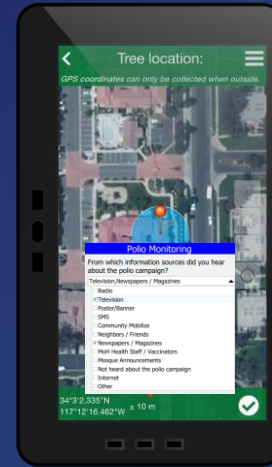


# What do you need?

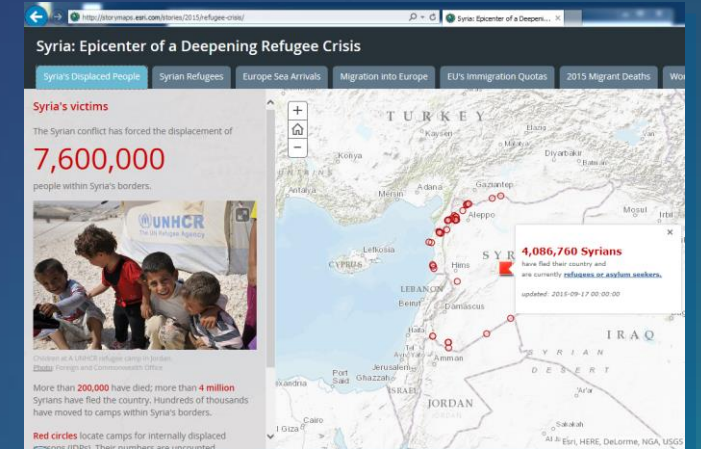
## Essential capabilities



Location Data Management, Analytics and Decision Support  
Common Operational Picture  
**Operations Dashboard**



Field Mobility  
Mobile Apps  
**Collector**



Constituent Engagement  
Briefing tools  
**Story Maps**



Location Platform



# Monitoring Safety and Security

Jim Bauer





# Learn from Smart Communities

Sustainable

Transparent

Productive

Responsive

Resilient

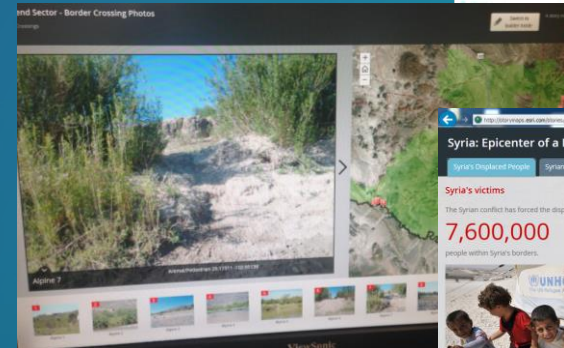
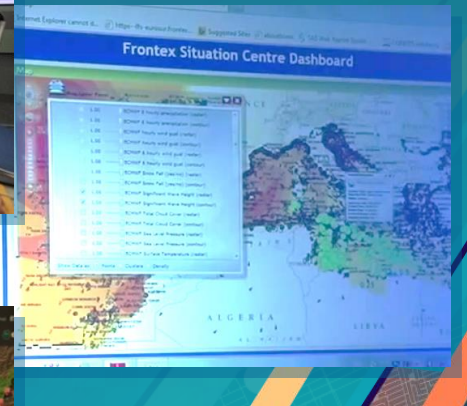
Innovative

Livable

Collaborative



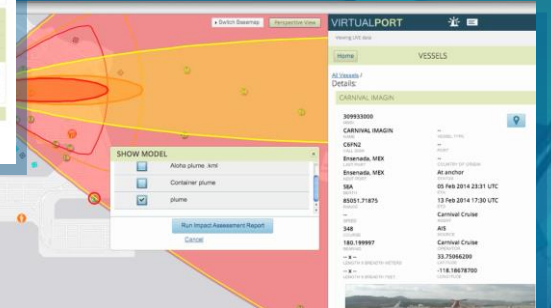
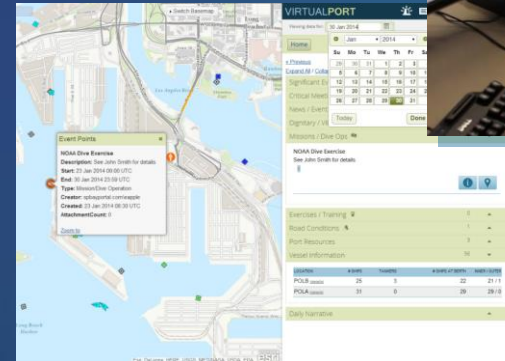
# Can you secure your perimeter and interior?



Frontex Operations Center  
Dashboard, Story Maps



# Can you protect your critical Infrastructure?



Port of Long Beach Operations Center Dashboard

Pre-Incident Plan Coordinator

Enter Address

Find Pre-Incident Plans

Task	Results
Status_Queryresult	Number of features found: 9
504	Station: Homestead AFB FD
	Style:

Critical Facilities Dashboard

BACK

Priority: None High Low Medium

Critical Infrastructur 60  
Last update: a few seconds ago

ATFP Survey Complete 32  
Last update: a few seconds ago

Egress Survey Complete 24  
Last update: a few seconds ago

0 300 600ft

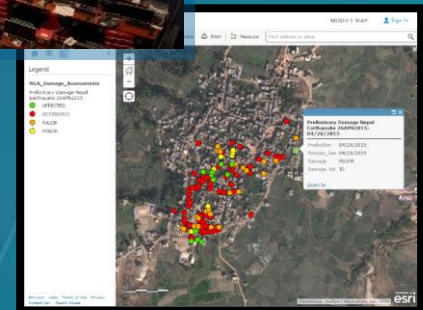
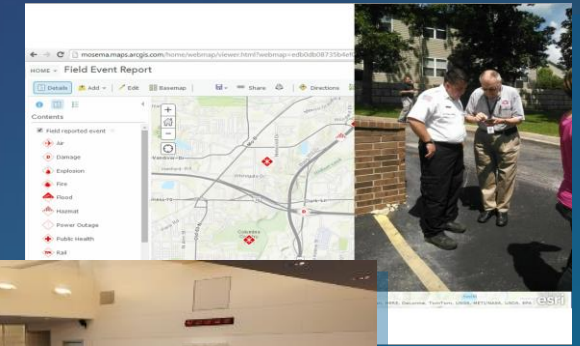
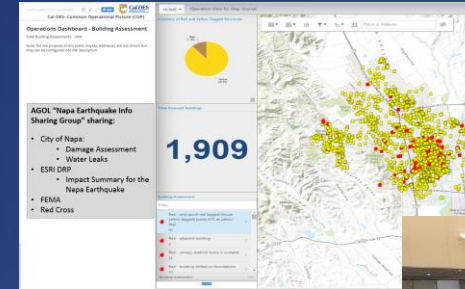
Miami-Dade County, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NAS...

# Understanding Critical Infrastructure

Jim Bauer



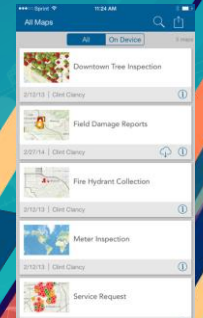
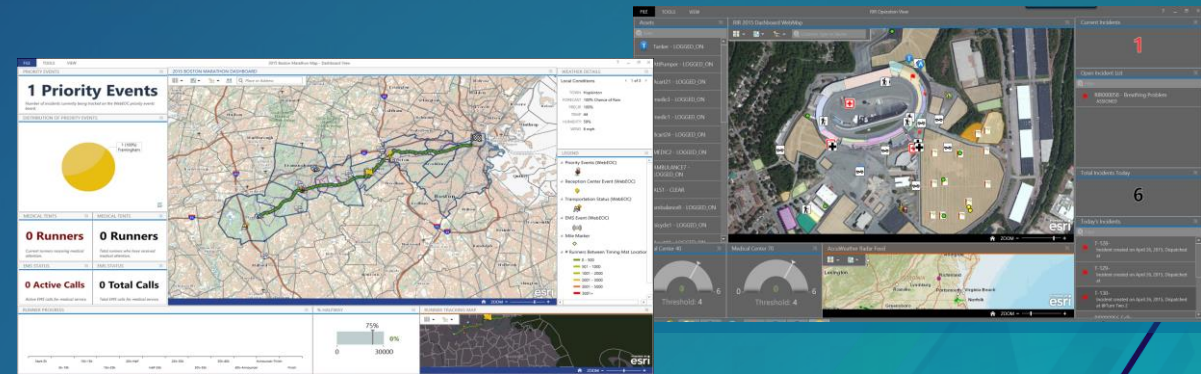
# Are you ready to deal with environmental or technological event?



California Office of Emergency Services Operations Center  
Collector, Dashboard, Story Maps



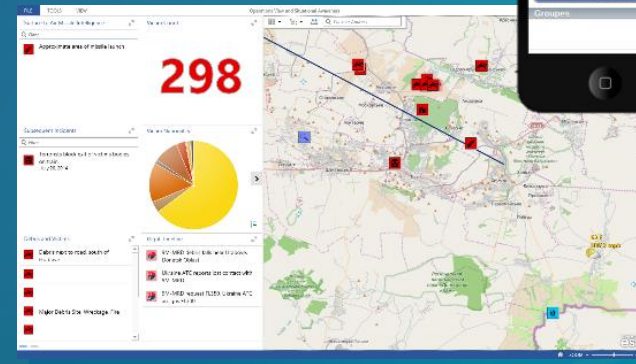
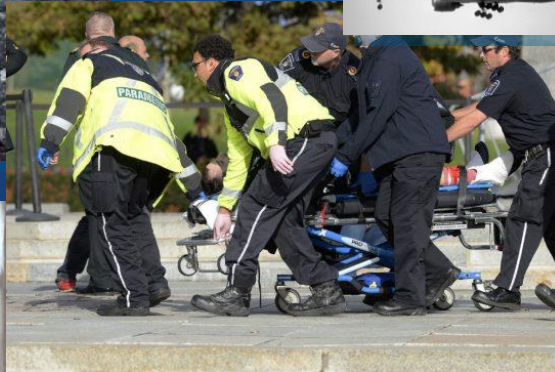
# Can you protect your installation during special events?



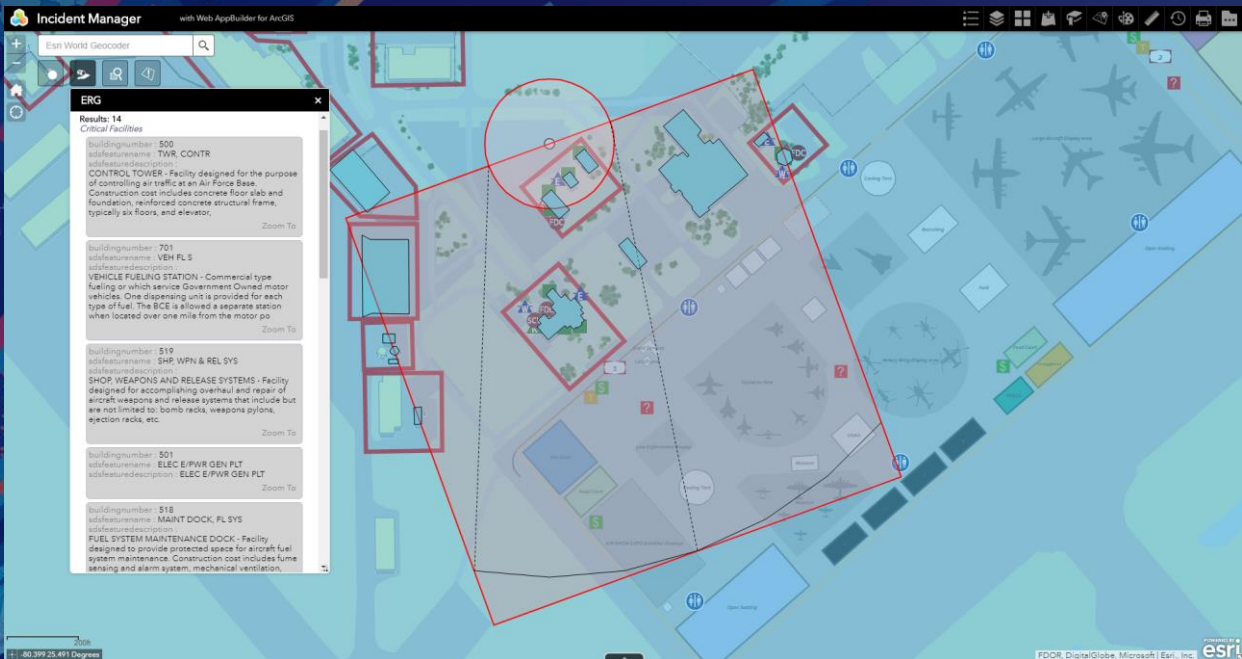
Boston Marathon Operations Center  
Collector, Dashboard



# Can you cope with an attack on your installation?



MH17 Shoot-down Temporary Operations Center  
Collector, Dashboard, Story Maps



# Mitigation and Response

Jim Bauer





# Who benefits?

Analysts



Planners



Executives



Commanders



Dispatchers



Field Personnel



Briefers



Tenants



Community



GIS  
Professional

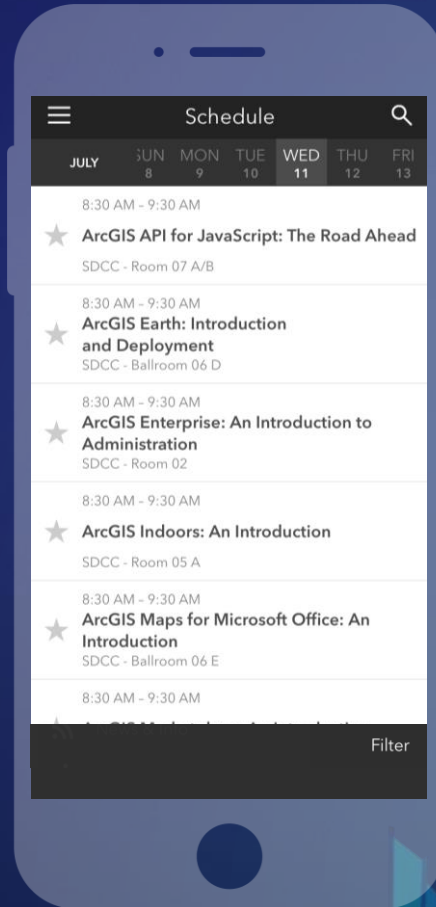


# Please Take Our Survey on the App

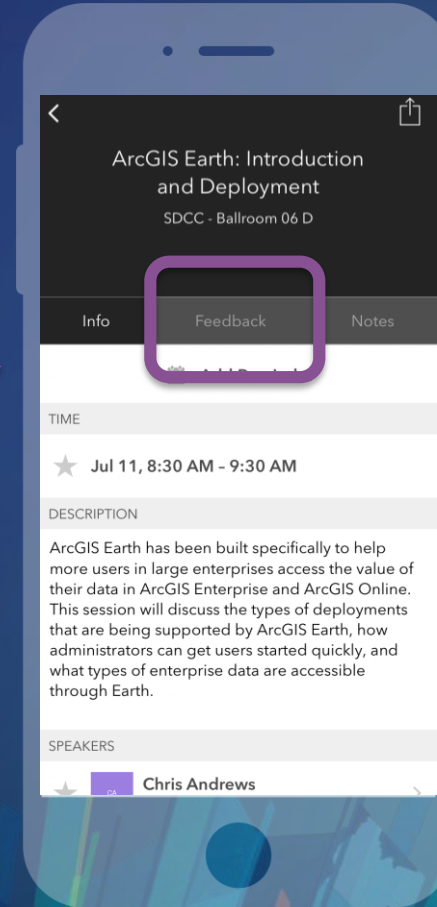
Download the Esri Events app and find your event



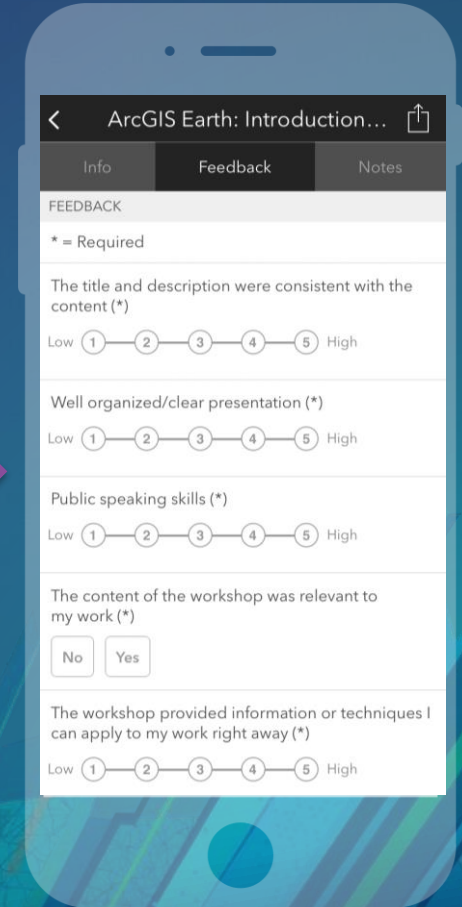
Select the session you attended



Scroll down to find the feedback section



Complete answers and select "Submit"







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**esri**

**THE  
SCIENCE  
OF  
WHERE**