

Federal GIS Conference 2014

February 10–11, 2014 | Washington DC



Operations Dashboard for ArcGIS

Joe Bayles

Overview of Operations Dashboard

Building a Dashboard

Agenda

Using a Dashboard

What's Next for Operations Dashboard

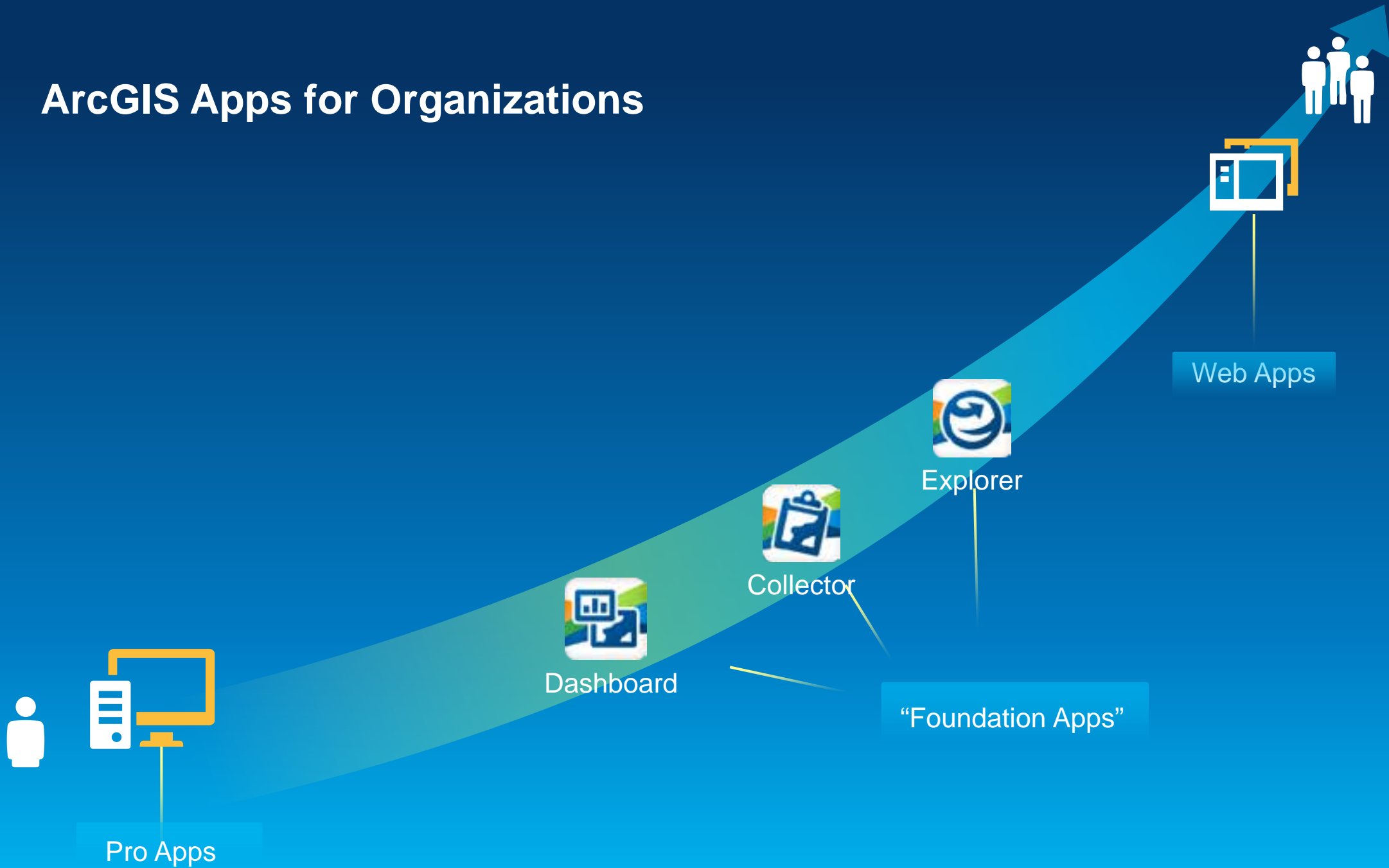
Questions

Esri Strategy toward mobility

- Extend the reach of Web GIS
- Platform agnostic
- Native apps/Web apps
- Developer Toolkits for partners



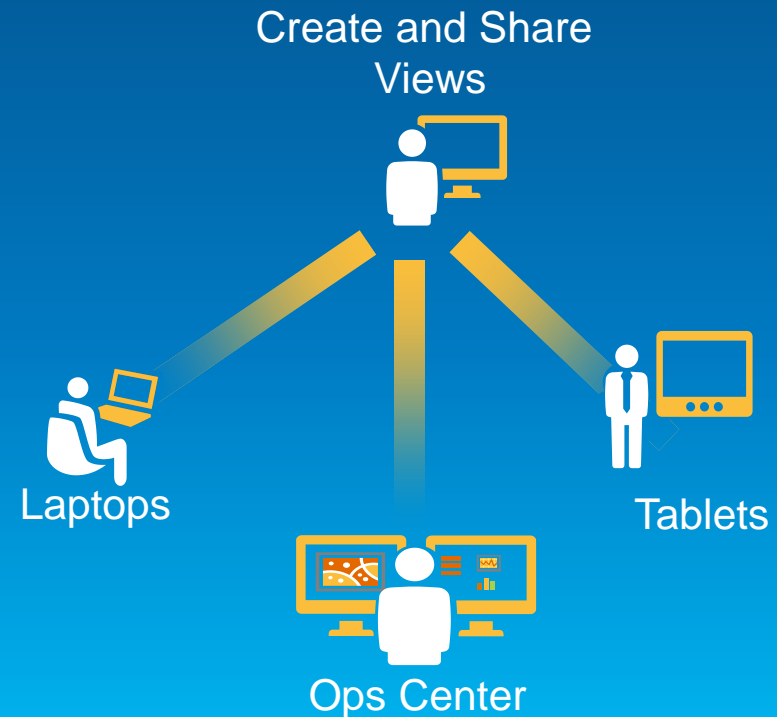
ArcGIS Apps for Organizations



Operations Dashboard for ArcGIS

- **Configurable view of the data and resources you manage**
 - Geographic view
 - Statistical view
- **Designed to work with dynamic/static data**
- **Designed for specific types of use:**
 - Unattended use
 - Attended use
 - Video walls
 - Touch screen tablets

- **Customer adoption**
 - Monitor planned and unplanned events
 - Summary view of capital projects



Operations Dashboard for ArcGIS

- Monitor, track, and respond to operations and events
- Connect to Dynamic or Static data
- Manage multiple views
- Laptops and touch screen devices
- Available with:
 - ArcGIS Online Subscriptions
 - Portal for ArcGIS 10.2
 - <http://www.esri.com/software/arcgis/arcgisonline/apps/operations-dashboard>
- Extensible using:
 - ArcGIS Runtime SDK for Windows Presentation Format (WPF)



Creating and Using Operations Views

Components

- Widgets
- Map Tools
- Feature Actions
- Data Sources

Role Based

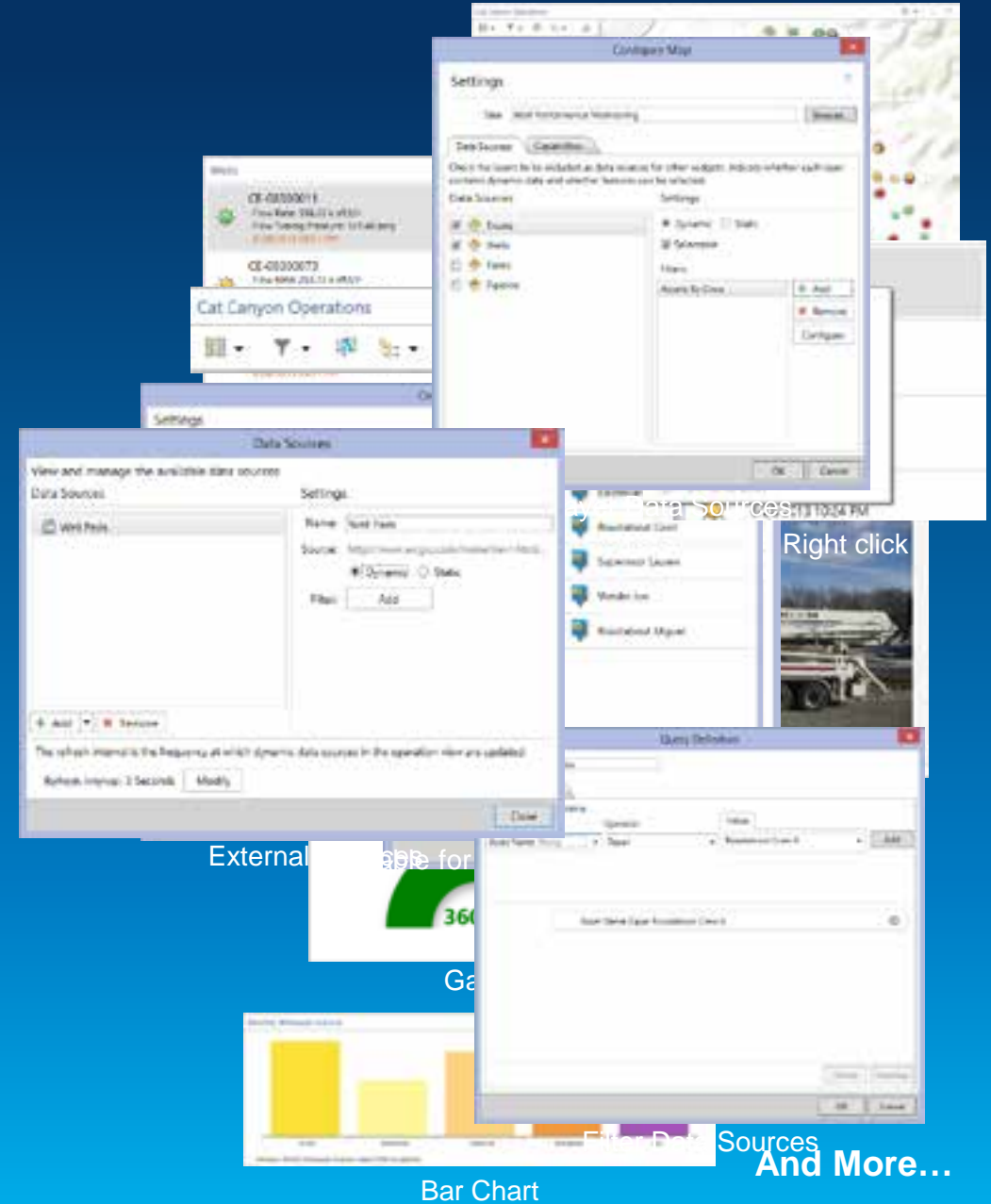
- Widgets are dynamic, interactive
- Maps provide spatial context

Two Types

- Single Monitor
- Multiple Monitor

Operation Views

- 2 types of views:
 - Single Monitor
 - Multiple Monitor
- View contains:
 - Widgets
 - Map Tools
 - Feature Actions
 - Data Sources

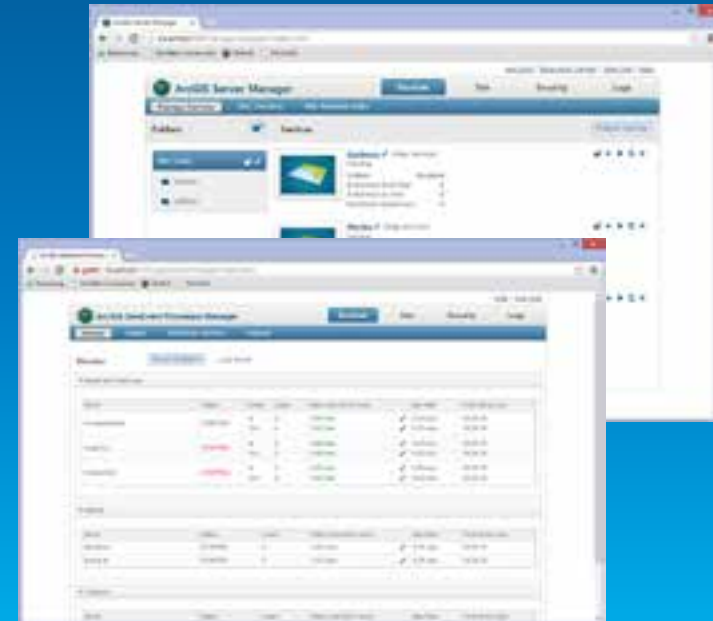


Bar Chart

And More...

ArcGIS Server – GeoEvent Processor Extension

- **Optional Extension to ArcGIS Server (Standard and Advanced)**
- **Media is included with the ArcGIS for Server media**
 - Stand alone setup
- **Works with Portal for ArcGIS and ArcGIS Online subscriptions**
- **Includes an SDK:**
 - Write your own connectors
 - Write your own processors



Geo Event Processing



Receive Real-Time
Data

Input Connectors



Process and Analyze
Data

Processors and Filters



Output features
and alerts

Output Connectors

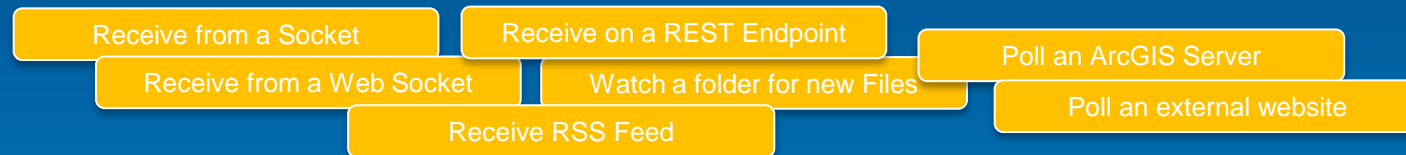
Real-Time data + ArcGIS Server Geo Event Processing = Real-time ArcGIS



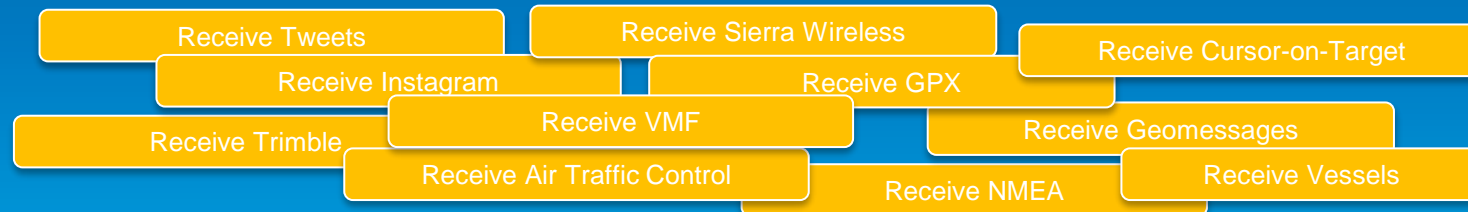
Receive Real-time data

Integrate real-time data sources using Input Connectors

- Input Connectors receive real-time data from a stream and create “**GeoEvents**”
- GeoEvent Processor includes the following default input connectors...



- Downloadable Input Connectors from Esri...



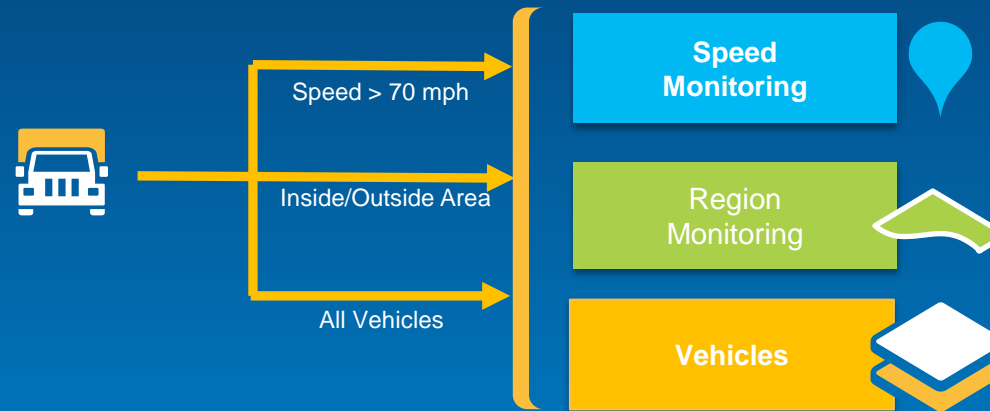
Write your own Input Connector using the GeoEvents SDK...



Processing, Filters and Analysis

Filter and process real-time data using a Processor

- Filters eliminate GeoEvents based upon attribute, spatial or logical conditions



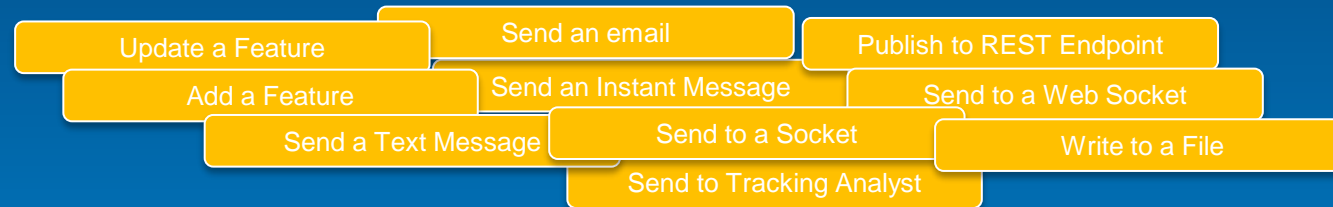
- Process GeoEvents
 - Modify an event (enrich, reduce fields)
 - Calculate new fields (field calculator, geo tagger)
 - Derive new events (field mapper, incident detector)



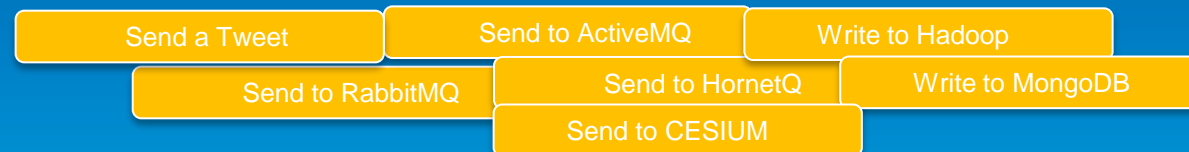
Output Features and Alerts

Operationalize real-time streams as data, services and/or events

- Output connectors operationalize GeoEvents by creating **features** and/or **alerts**
- GeoEvent Processor includes the following default output connectors...



- Downloadable Output Connectors from Esri...



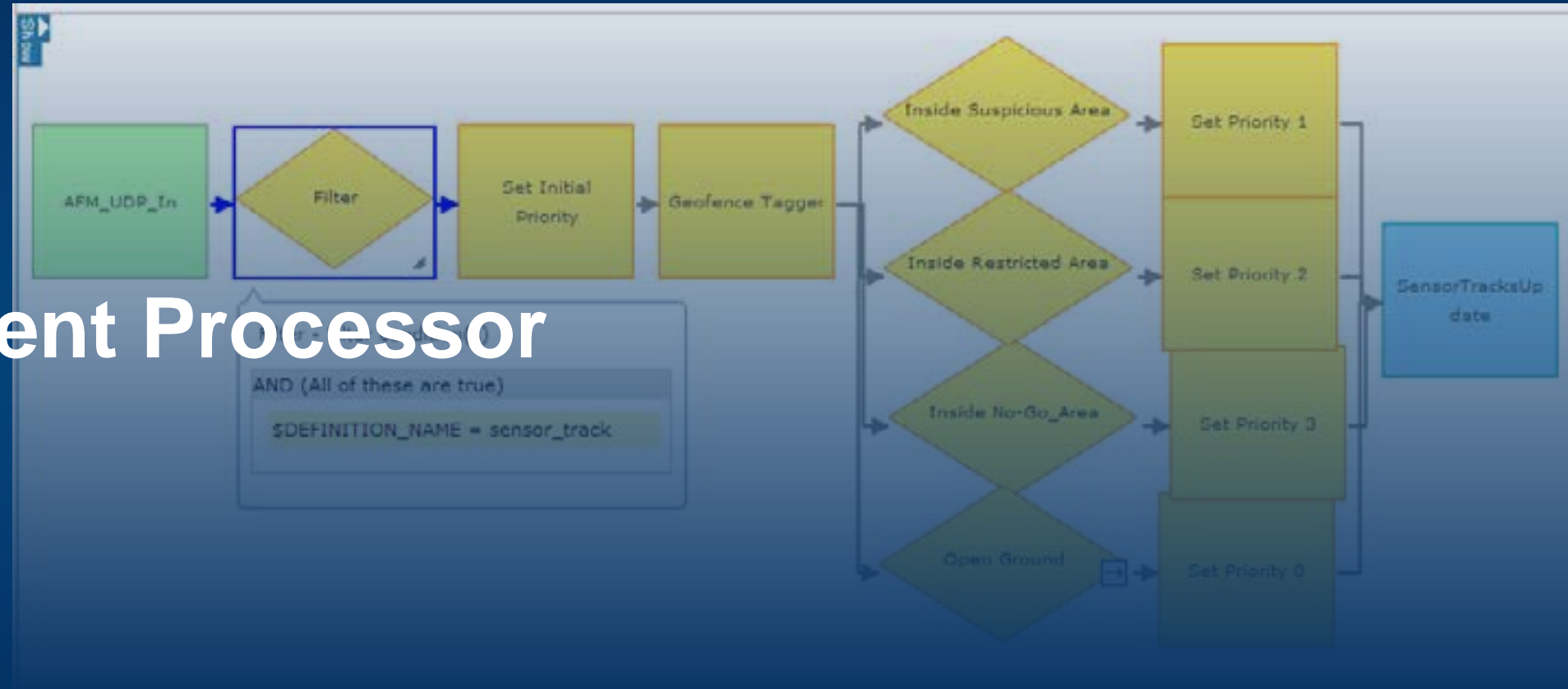
Write your own Output Connector using the GeoEvents SDK...

GeoEvent Services

- **Connect Inputs, Processors and Outputs to make features come to life**
- **Configure the flow of GeoEvents**
 - Filtering and processing steps to perform
 - What inputs to apply them to
 - What outputs to send results to
- **Use GeoEvent definitions to specify the structure of GeoEvents**
 - Mapping of fields between inputs, filters, processors and outputs

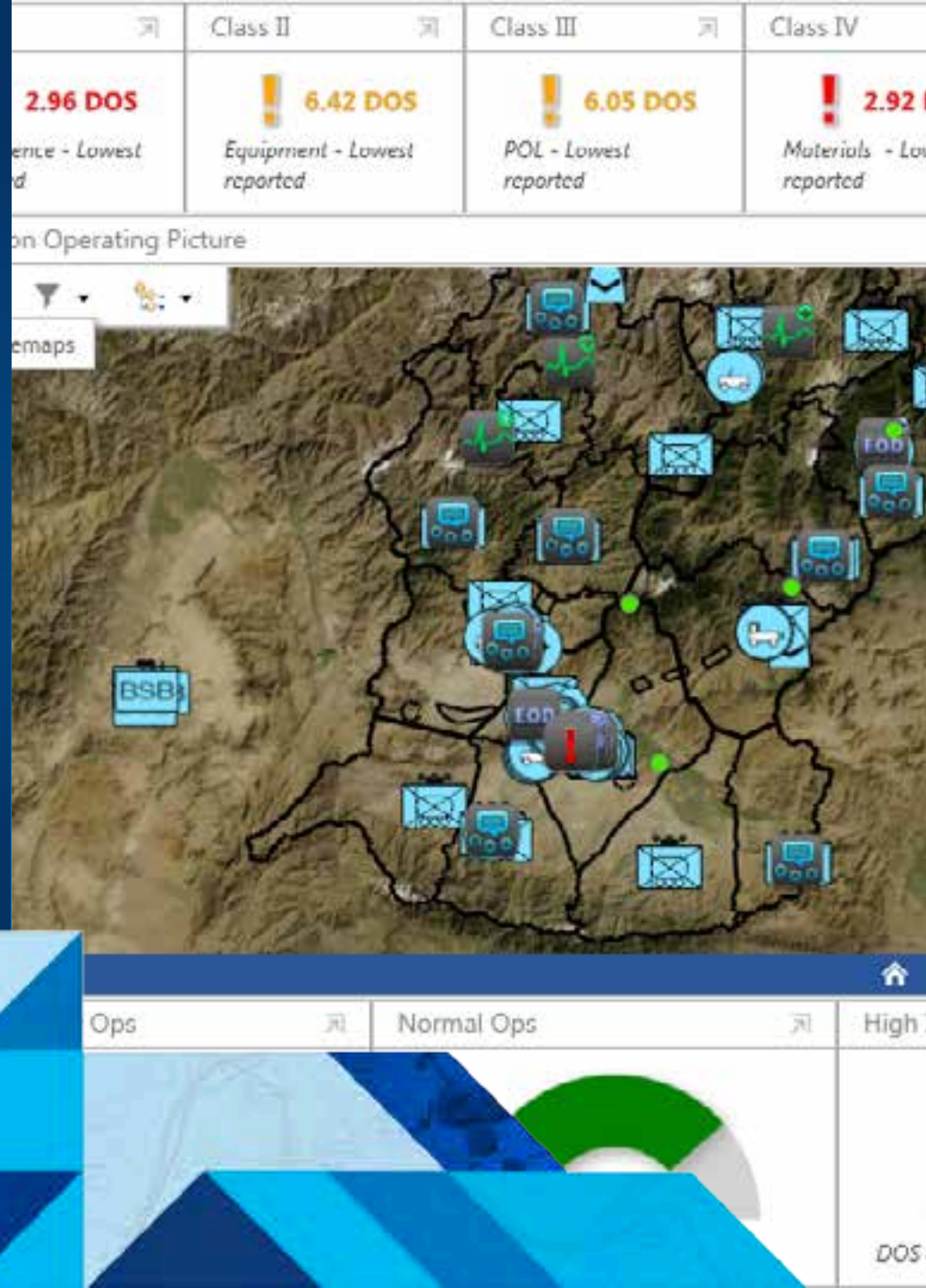


GeoEvent Processor

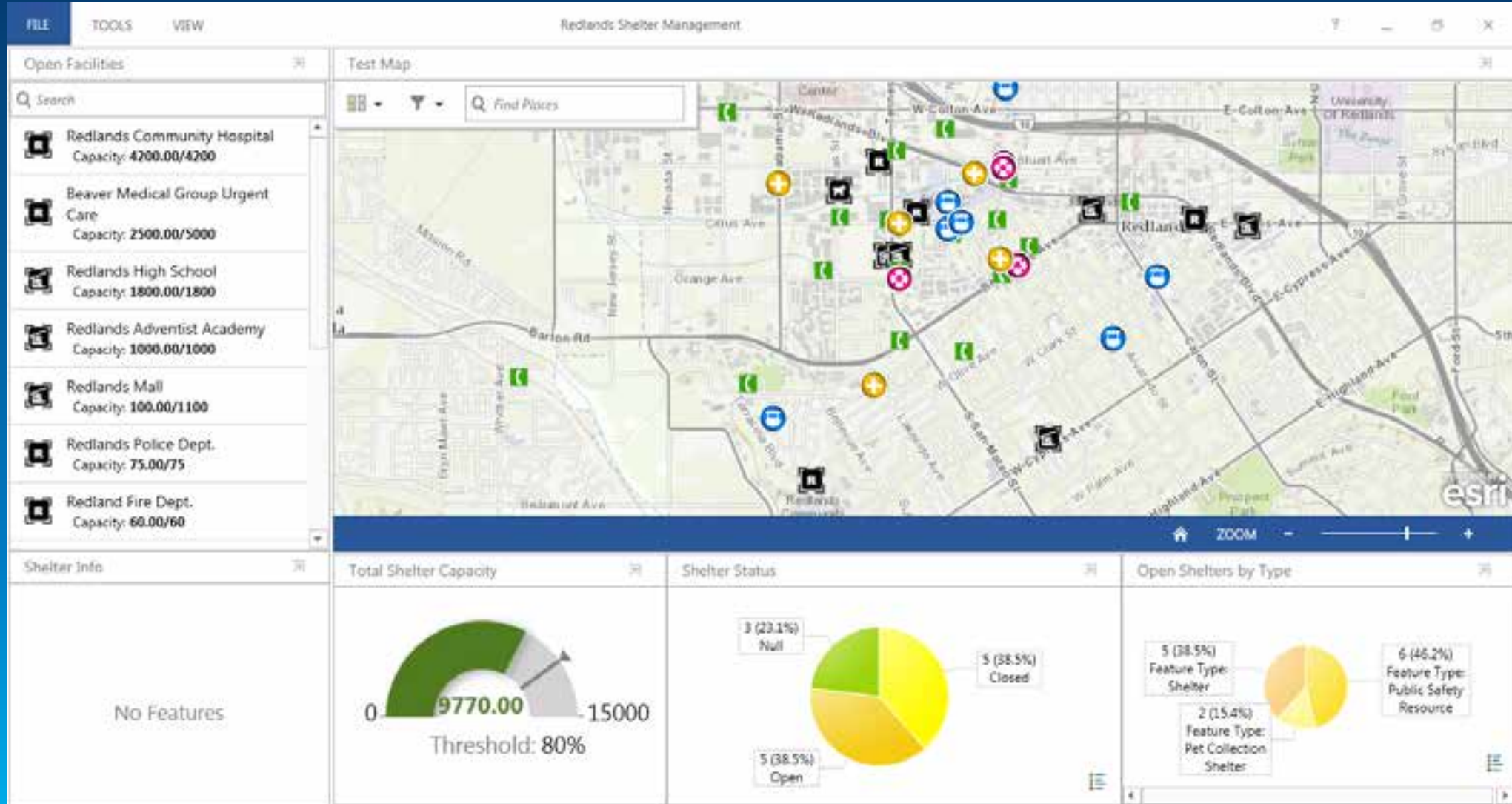


Demonstration

Use Cases



Shelter Management



Flight Operations

FAA flight Track Operation View

Flight Query

Flight Query

Flights

Search

- ✈ SWA134-B733-LAX to MCI
3/4/2014 10:40 - 15:50
Feet - 333 Knots
- ✈ SKW4613-N/A-KSMF to KLAX
3/4/2014 10:16 - 4:00
Feet - 284 Knots
- ✈ DAL284-B744-RJAA to KLAX
3/4/2014 07:37 - 2:00
Feet - 210 Knots
- ✈ N73BT-N/A-N/A to N/A
3/3/2014 17:44 - 2:00
Feet - 107 Knots

FAA Flight Tracks NT

ZOOM

GeoFences

(7) Add Search...

- GeoFenceId
- Territory 2 Items
- Territory/Silver Spring Area
- Territory/Severe Ice Storm 1
- FlightRestrictedZone 5 Items
- FlightRestrictedZone/Restricted Zone 1

Alerts

Alerts (9) Search...

Incident Name	Resource
is inside a Flight Restricted Zone	10 Items
is inside a Flight Restricted Zone	FAA_TrackInfo
is inside a Flight Restricted Zone	FAA_TrackInfo
is inside a Flight Restricted Zone	FAA_TrackInfo
is inside a Flight Restricted Zone	FAA_TrackInfo

Flight Altitude

Flight Altitude

Airlines

Airlines

Altitude

Altitude

Speed

Speed

Security Operations



Medical Evacuation

MEDEVAC Reporting Dashboard

FILE TOOLS VIEW

GOLDEN HOUR

No Features

Casualties not treated within 60 minutes

Available Medical Assets

No Features

MEDEVAC (air) and ambulances

Bed Availability

No data source is defined.

Facilities and specialist capabilities

- CSH JBAD - Hospital Unit
Surgical, CT Scanner, 256 Beds - A
- BAS NURESTAN - Forward Surgical Team - A
- BAS ASASABAD - Medical

MEDEVACReporting

Find Places

Security at Pickup Site

- New - 24 Delta - Possible Enemy Troops in Area
- Closed - 4-A-2 - Enemy Troops

MEDEVAC Equipment Requests

- New - 2-C-2 -
- New - 2-B-1 -

Nationality

- New - 2-C-2 - EPW
- New - 2-B-1 - Non-US/Coalition

MEDEVAC Urgent - Surgery

- New - 2-C-2 - Total: 1
- New - 2-B-1 - Total: 0

MEDEVAC Urgent - Surgery

MEDEVAC Urgent

- New - 2-C-2 - Total: 1
- New - 1-B-2 - Total: 1

MEDEVAC Urgent

MEDEVAC Priority

- New - 2-C-2 - Total: 1
- New - 1-B-2 - Total: 1

MEDEVAC Priority

MEDEVAC Routine

- New - 1-B-2 - Total: 1
- Closed - 2-B-3 - Total: 0

MEDEVAC Routine

MEDEVAC Convenience

- Closed - 3-A-3 - Total: 0

MEDEVAC Convenience

esri

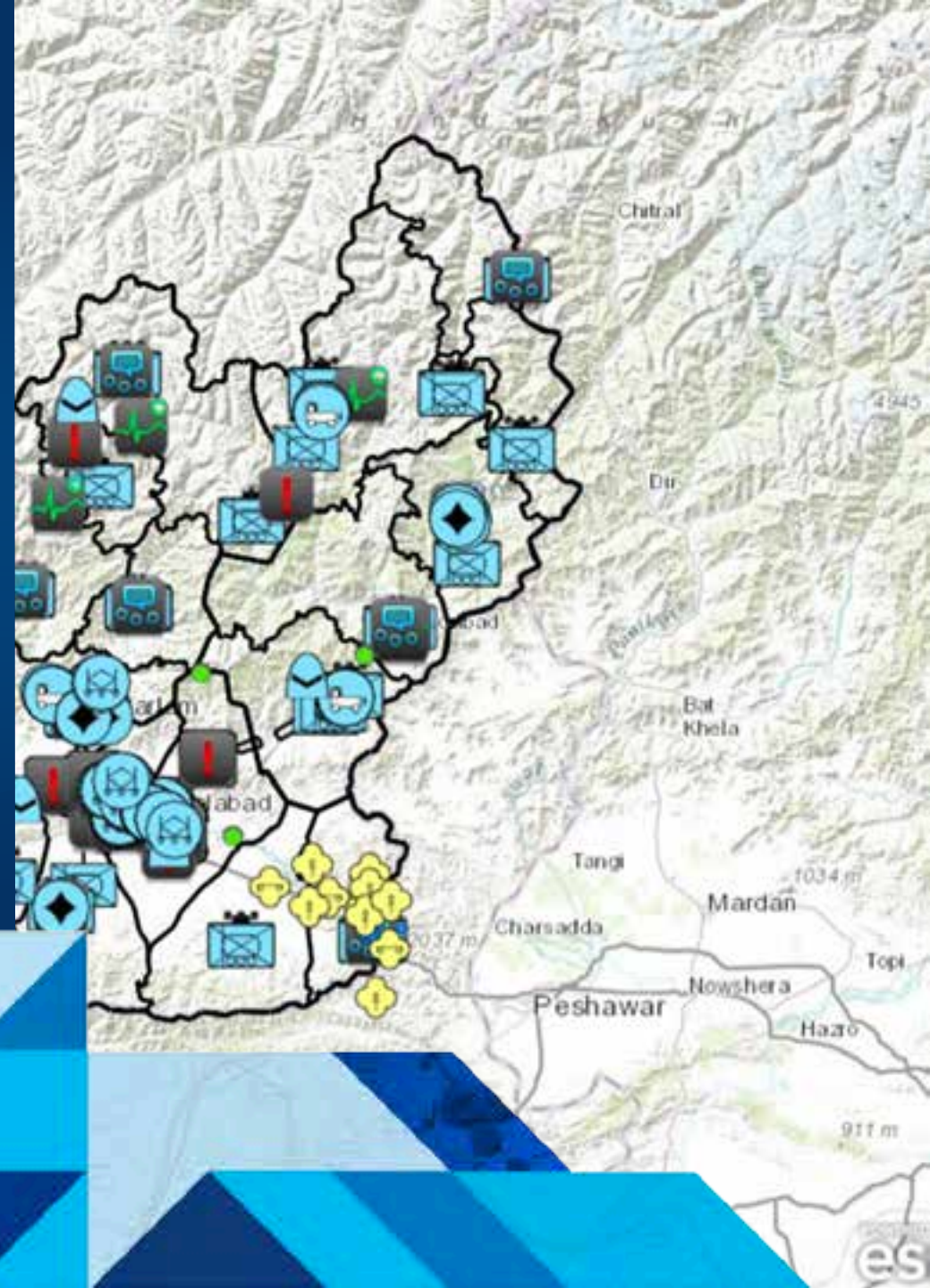
ZOOM

Logistics Operations



Demonstration

Creating a new Operations View



From the Home Screen

Operations Dashboard for ArcGIS

Recent

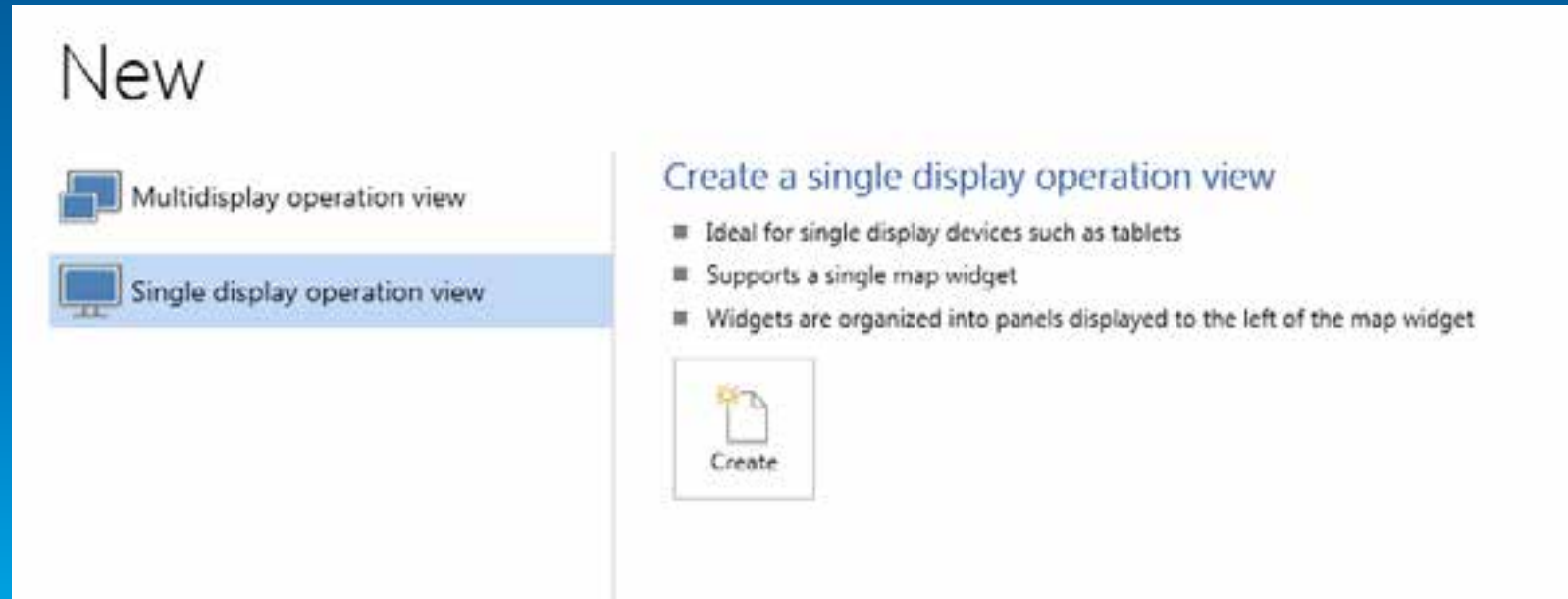
- FAA Flight Track Operation View
- Redlands Shelter Management
- FAA Flight Tracks
- Riyadh Traffic View
- Basin View
- Open an Operation View**
- Create a New Operation View**

Main Dashboard Grid:

Thumbnail	Title	Updated	Author	Description	More
	Panama Canal Watchkeeper	Updated 2 days ago	johnly02	Operations Dashboard to help maintain situational awareness of Panama Canal operations	More
	Mississippi River Operations	Updated 5 days ago	johnly02	Dashboard to support situational awareness for shipping	More
	Maritime Security Dashboard	Updated 5 days ago	johnly02	Maritime Security Dashboard	More
	Redlands Shelter Management	Updated last week	johnly02@esri.com_esriederal	The Redlands Shelter Management view is used to monitor and manage shelter capacity	More
	Damage Assessment	Updated last week	kgorton	No information available	More
	Aid Workers	Updated 2/6/2014	kgorton	No information available	More
	Syrian IEP Camp Dashboard	Updated 2/4/2014	evrinc	Syrian IEP Camp Dashboard	More
	USPS Ops Dashboard	Updated 2/3/2014	kgorton	No information available	More
	Conference Collects Dashboard	Updated 1/14/2014	johnly02	A dashboard showing collectives around a conference	More
	Panama Canal Area of Operations Dashboard 2	Updated 1/6/2013	kgorton	Operations Dashboard to help maintain situational awareness of Panama Canal operations	More
	FAA Flight Track Operation View	Updated 12/5/2013	mpilcak_fed	FAA Flight Track Operation View with automatic symbol orientation	More
	Image Observations	Updated 12/5/2013	CraigCleveland_Fed	No information available	More
	Real-time Mobile Device Tracking	Updated 12/4/2013	mpilcak_fed	Real-time Mobile Device Tracking	More
	NetworkFlow GeoEvent Processor Operation View Demo	Updated 11/27/2013	mpilcak_fed	NetworkFlow GeoEvent Processor Operation View Demo	More
	FAA Flight Tracks	Updated 11/15/2013	mpilcak_fed	FAA Flight Tracks	More
	Riyadh Traffic View	Updated 11/5/2013	gohappant_esriederal	No information available	More
	Image Observations	Updated 6/18/2013	chris_ite	No information available	More
	Operation View_Seminar4	Updated 4/15/2013	johnly_fed	No information available	More

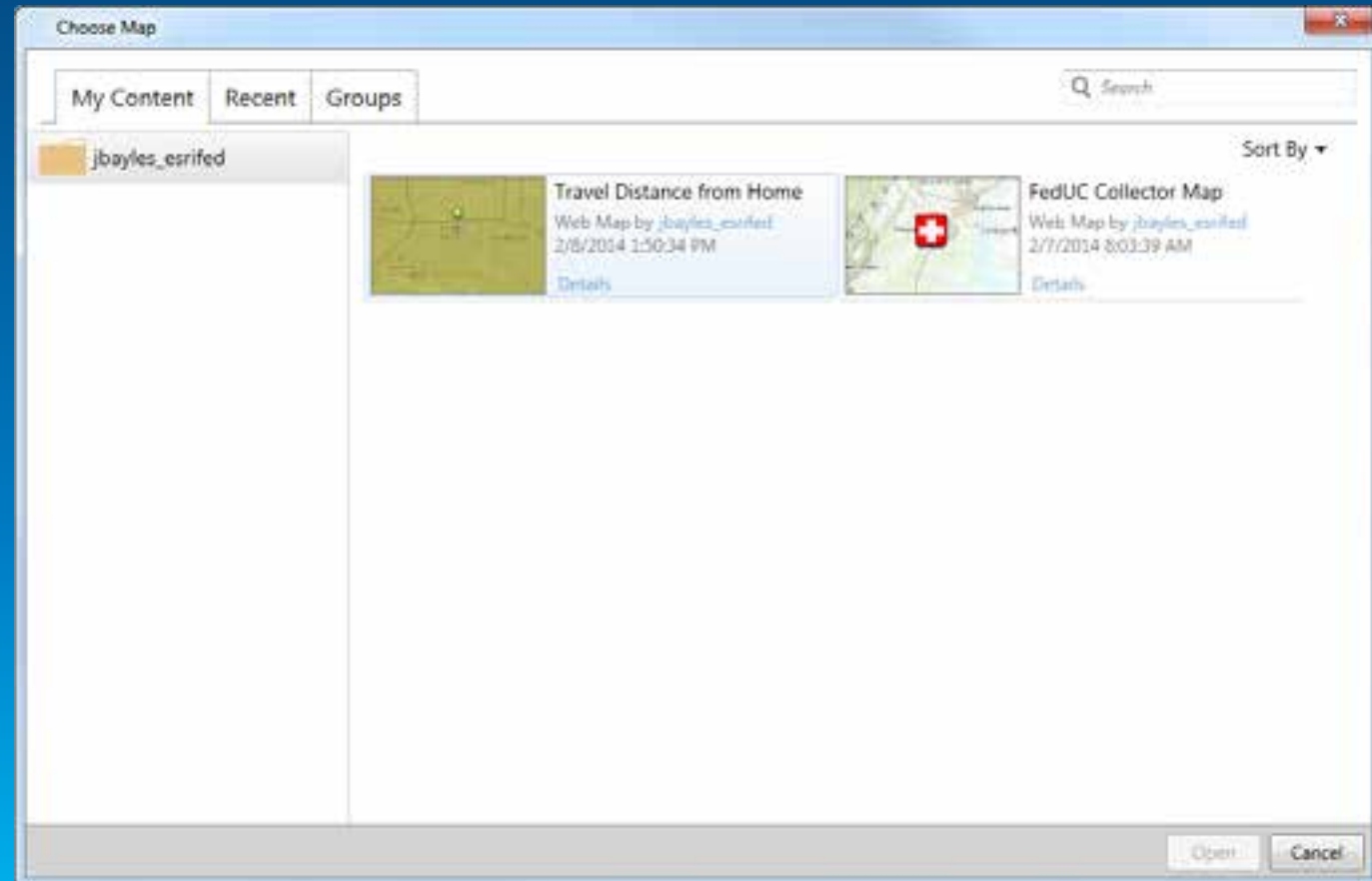
Choose your Operation View type

- Multi-Display
- Single Display
 - Browsers require Single Display



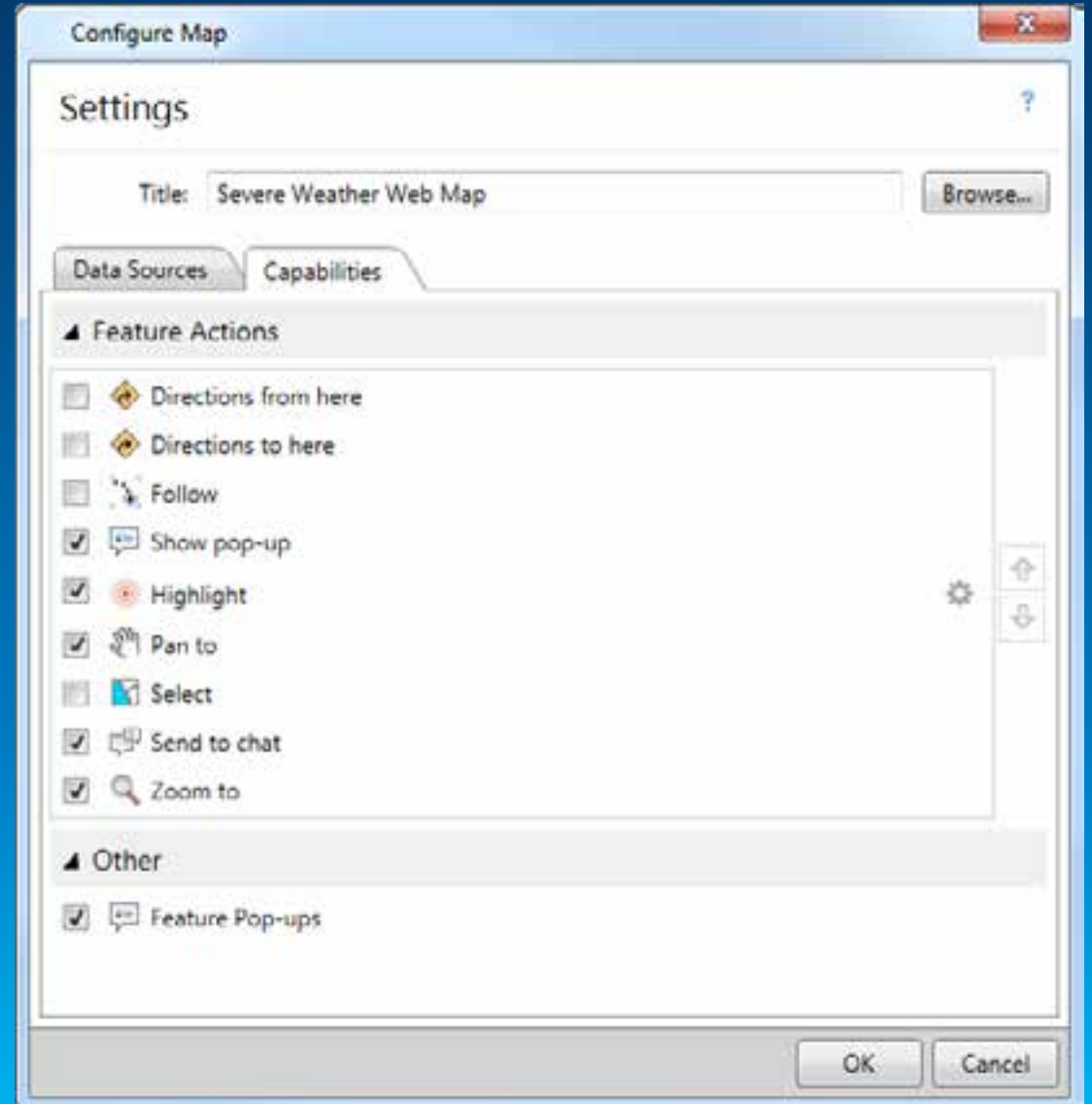
Choose your initial Web Map

- Your Web Map can be hosted anywhere on the portal
 - (as long as you have access to it)

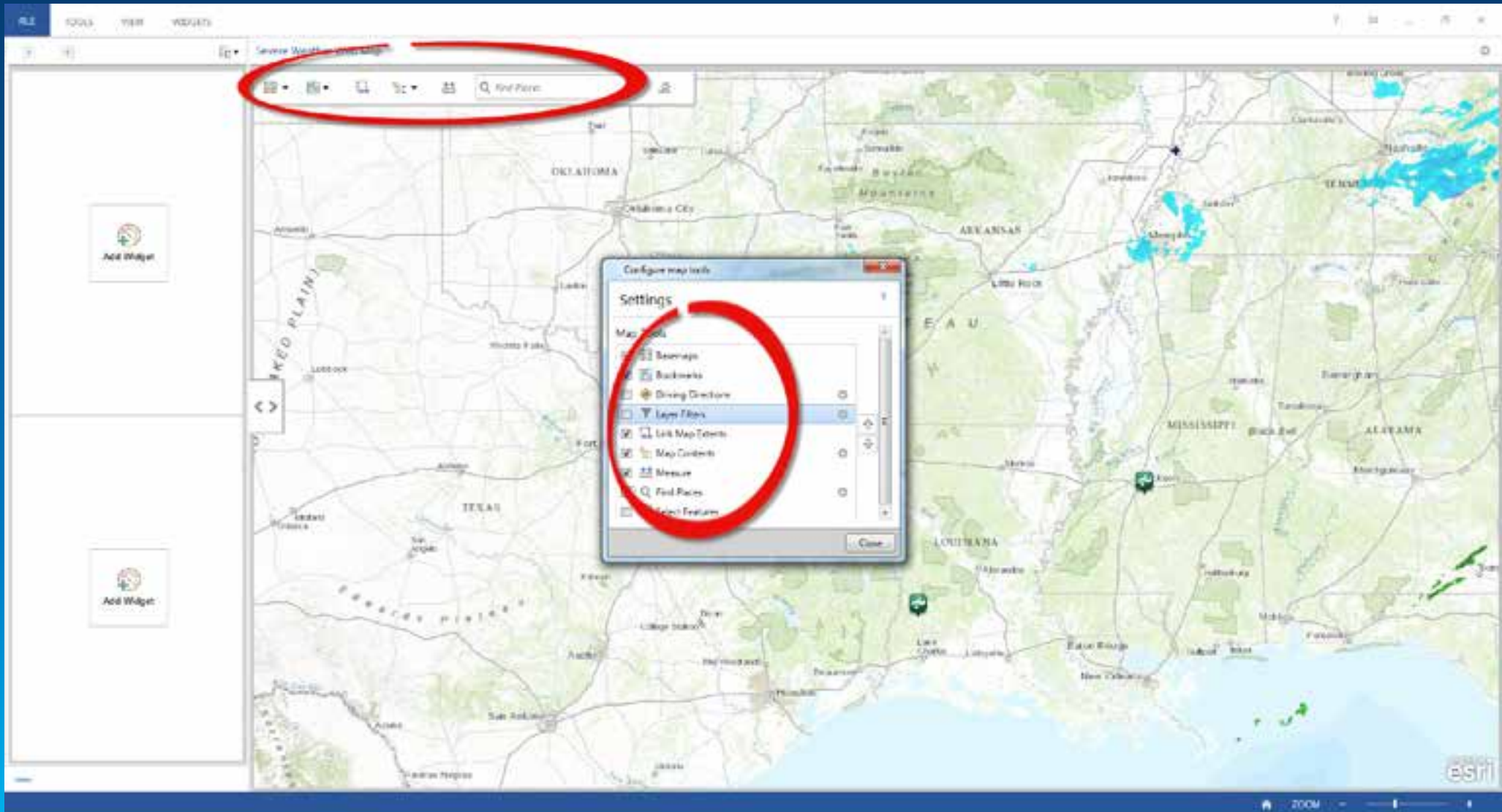


Configure your initial Web Map

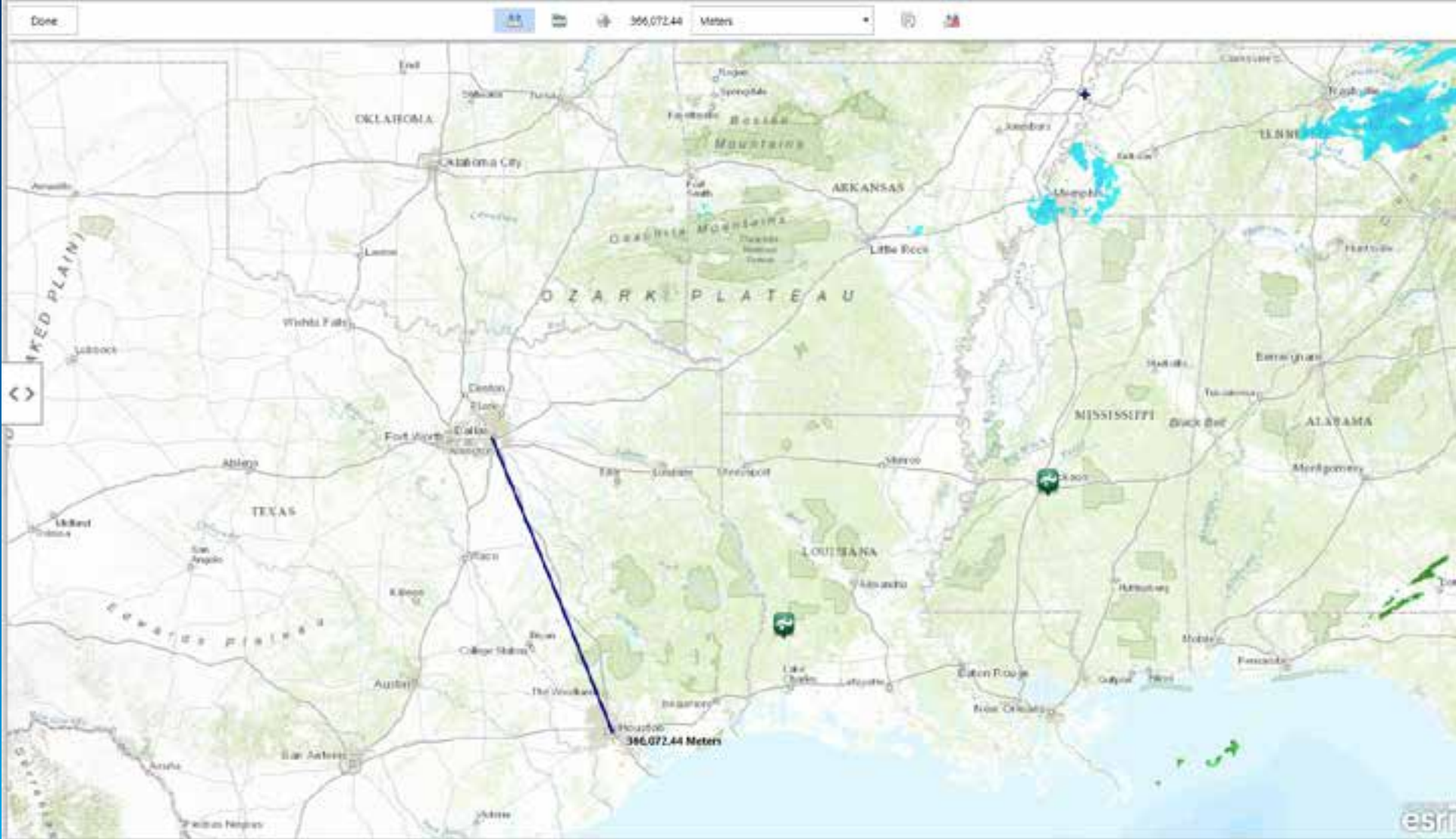
- Configure your map data sources...
- ... and capabilities.



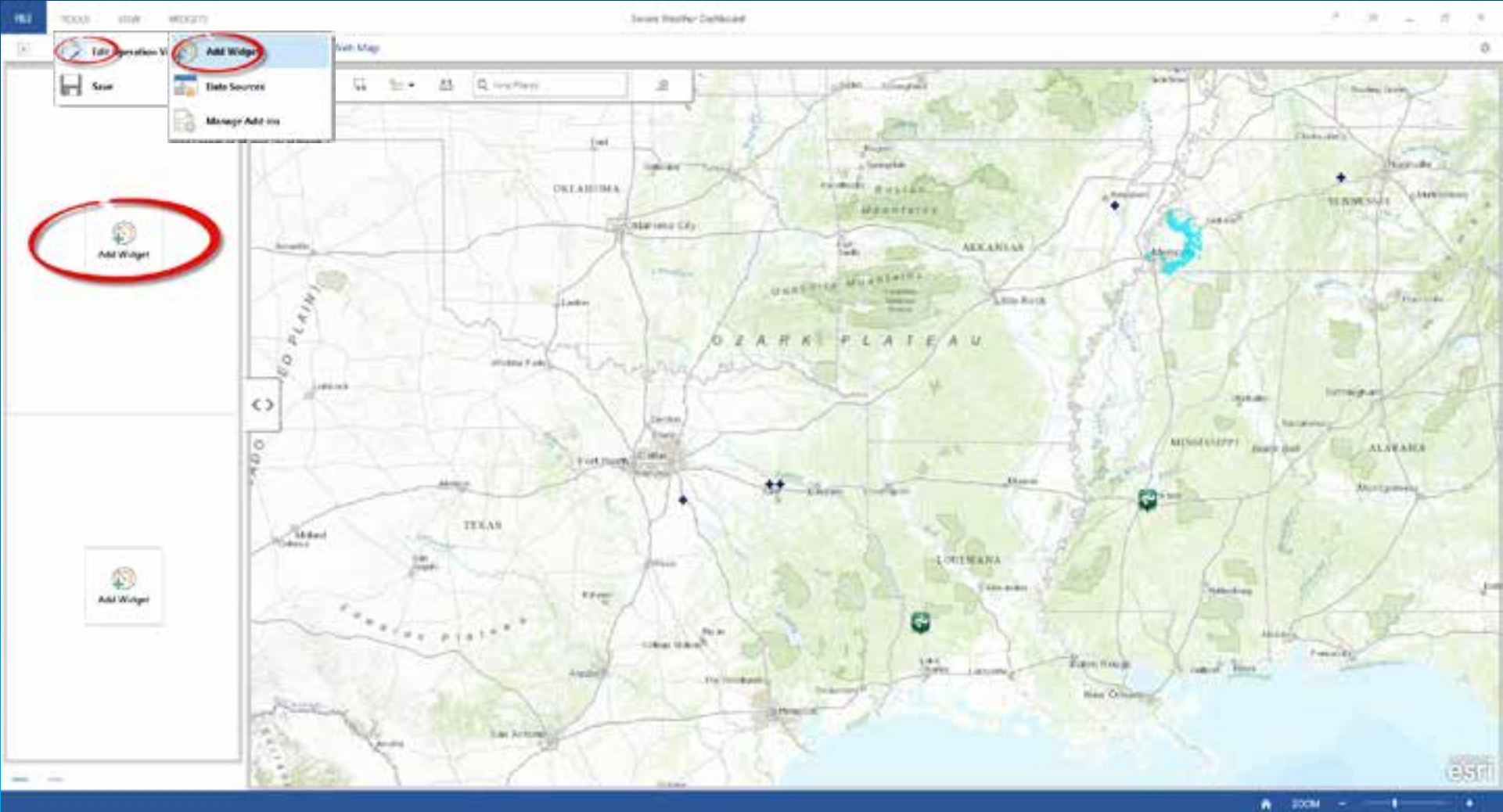
Operations View with Web Map



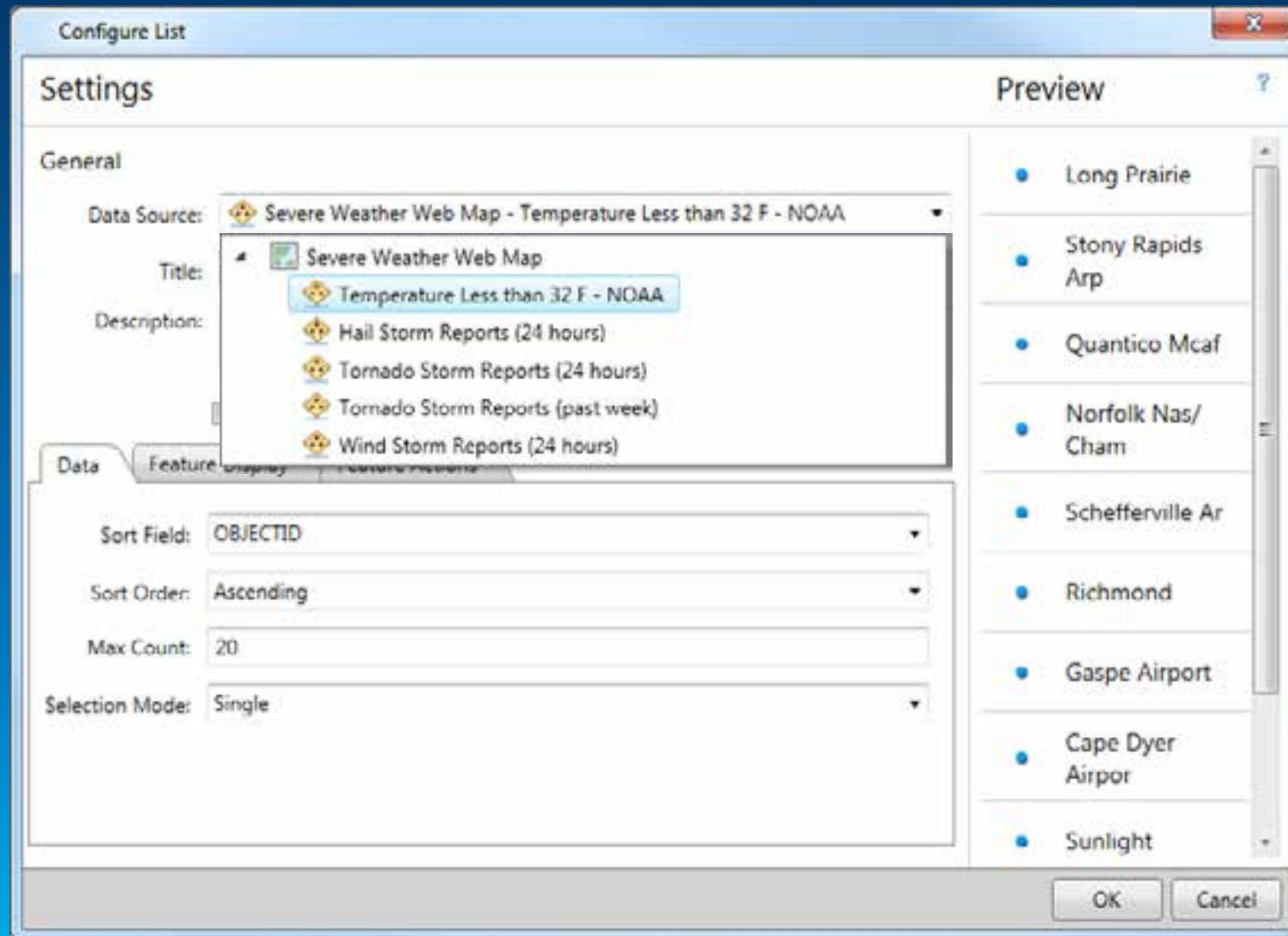
Operations View Web Map Tools



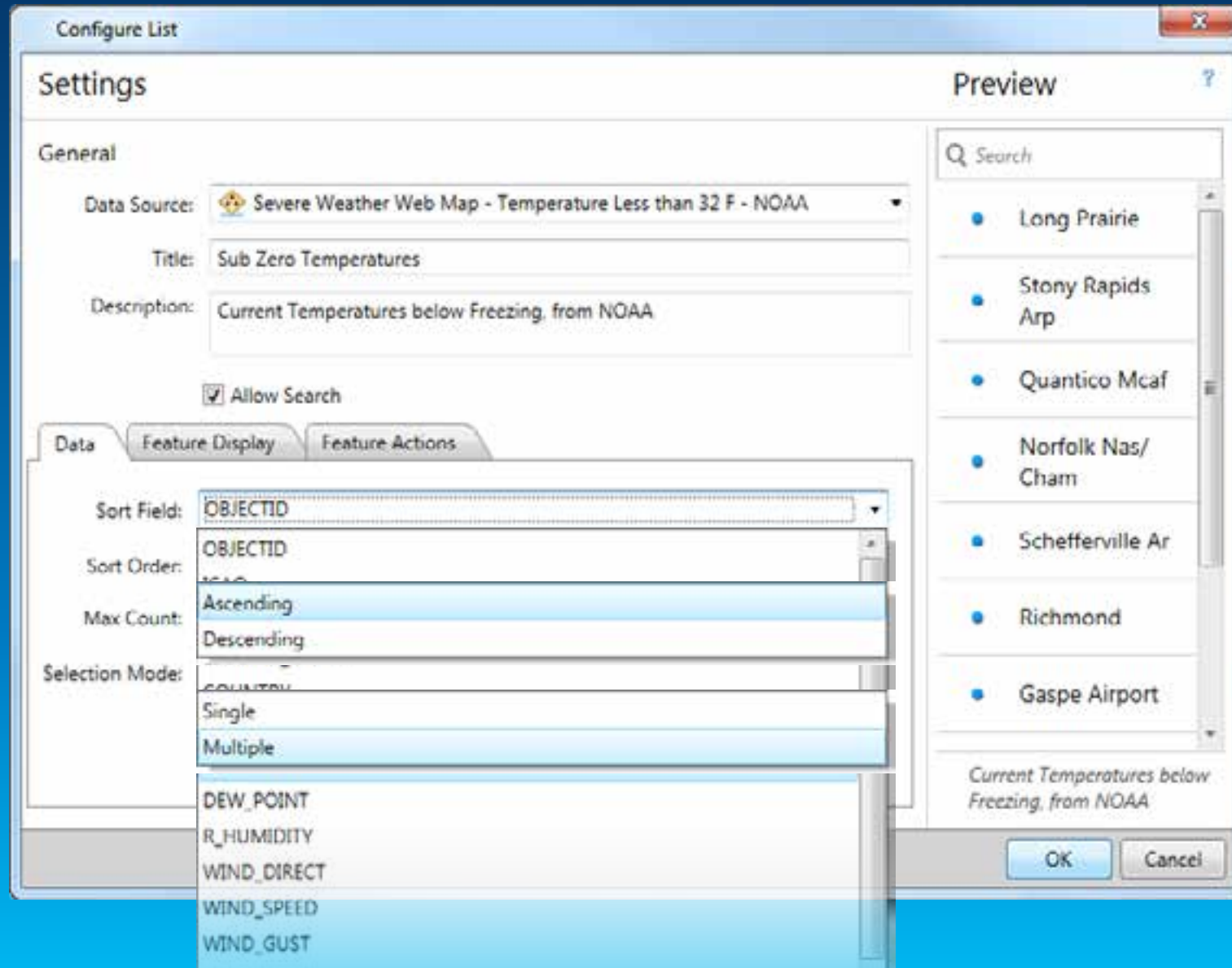
Adding Widgets



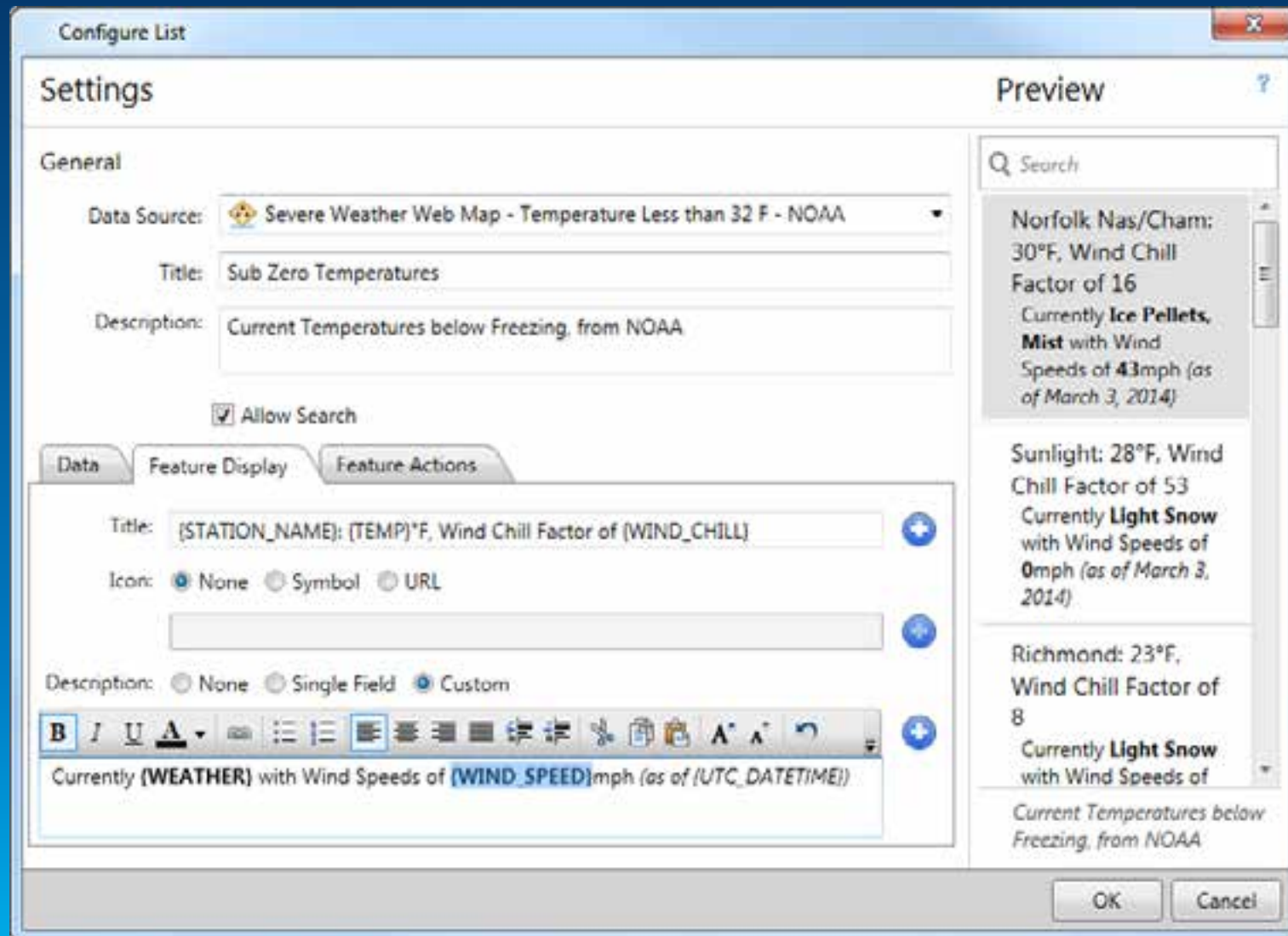
Creating a List



Creating a List

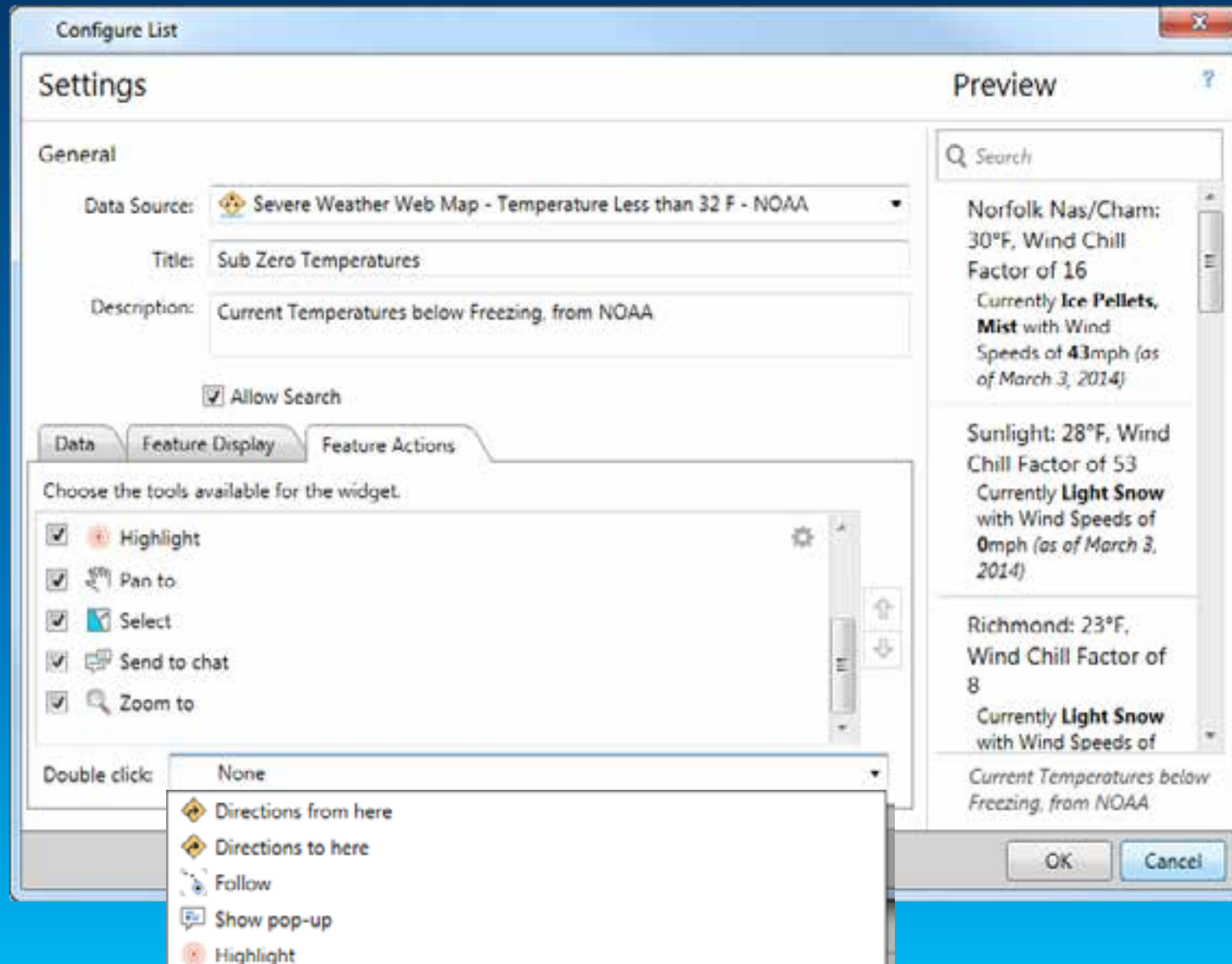


Creating a List

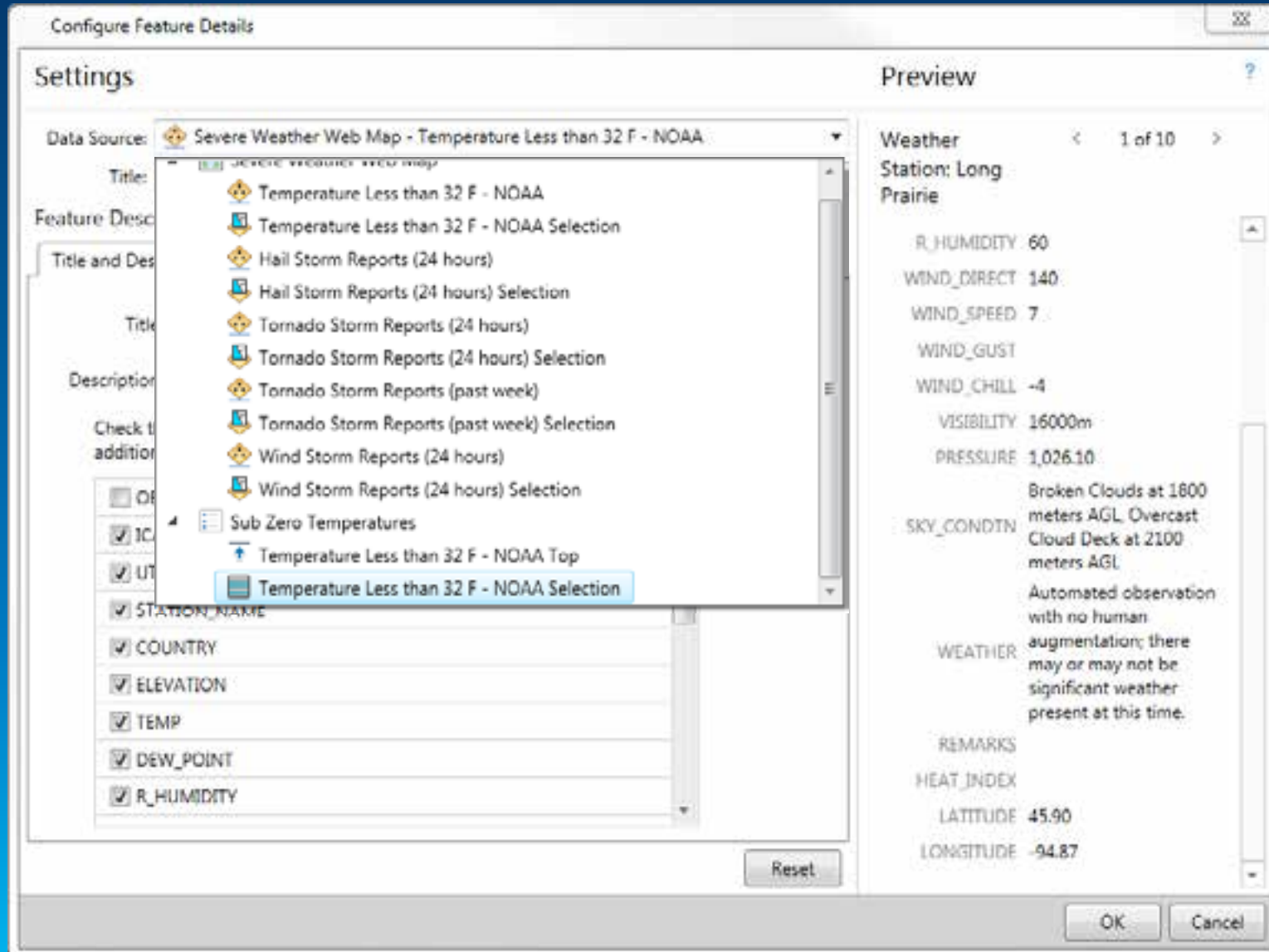


WIND_SPEED (WIND_SPEED)
WIND_GUST (WIND_GUST)

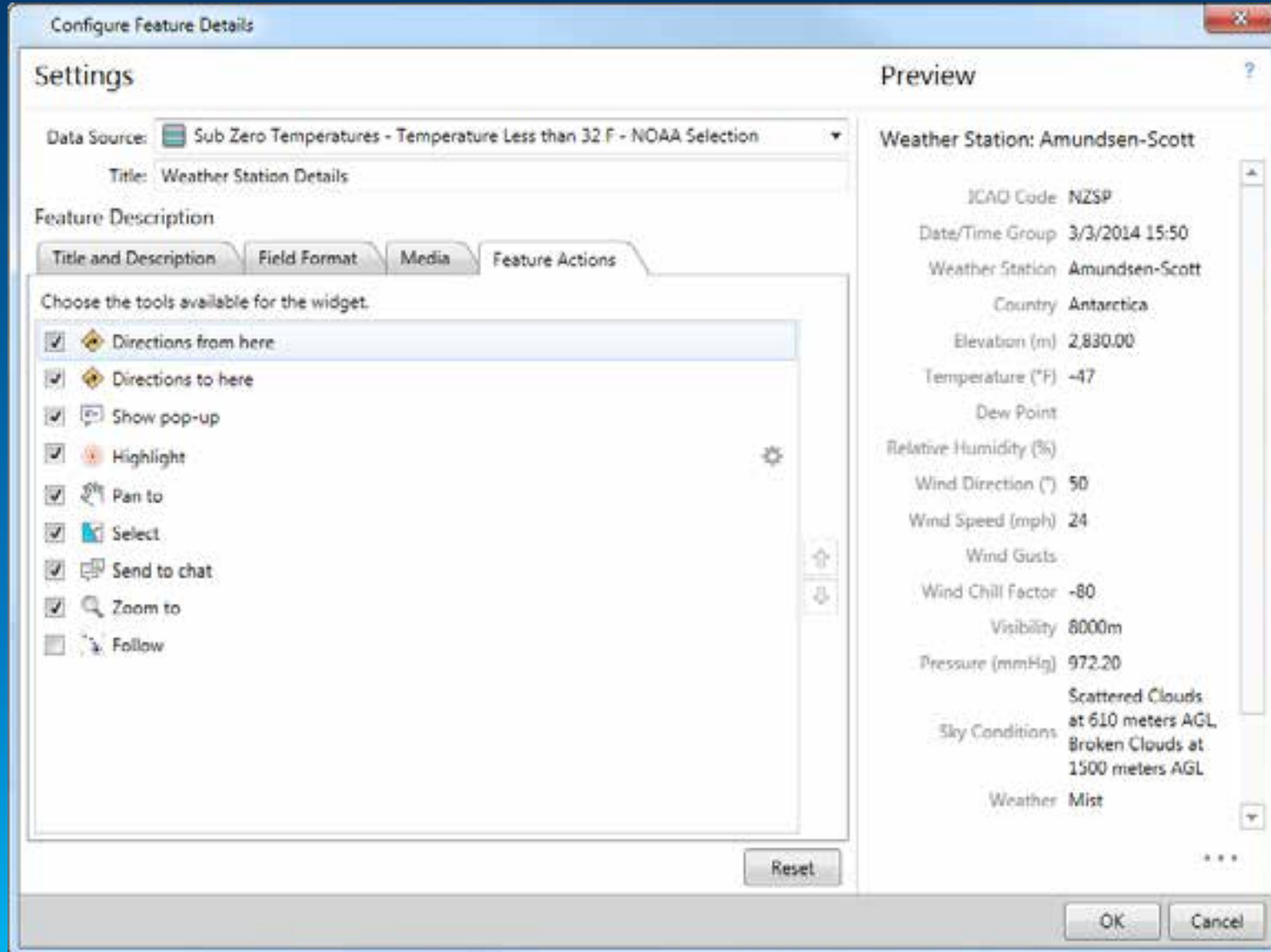
Creating a List



Creating a Feature Details Display



Creating a Feature Details Display



Check on Learning

The screenshot displays the ArcGIS Desktop interface with a map of Antarctica. A 'Query Definition' dialog box is open, allowing users to filter data based on specific criteria. The dialog box has a 'Name' field set to 'United States' and two tabs: 'Query' and 'Data'. The 'Query' tab is active, showing a list of criteria to be applied to the data.

Query Definition

Name: United States

Specify your query criteria

Field:	Operator:	Value:
WEATHER String	Not equal	

And

- COUNTRY Contains United States
- WEATHER Not equal Automated observation with no human augmentation; there may or may not be significant weather present at this time.

Group Ungroup

OK Cancel

The background map shows the continent of Antarctica with various weather stations marked. The 'Weather Station Details' pane on the left provides information for the 'Amundsen-Scott' station, including its SCAR Code (425P), Date/Time Group (3/3/2014 15:50), Country (Antarctica), Elevation (265000), Temperature (°C) (-47), and other meteorological data.

Adjusting the List for the Filter

The screenshot displays a web application titled "Severe Weather Dashboard" with a browser window showing "Severe Weather Web Map". The interface includes a navigation menu (FILE, TOOLS, VIEW, WIDGETS) and a search bar for "Hot Places".

The main content area is split into two panels. The left panel, titled "Sub Zero Temperatures", contains a list of weather stations. The right panel shows a map of North America with weather data overlays.

Sub Zero Temperatures List:

- Naigut Village** -15°F, Wind Chill Factor of -32
Currently **No significant weather present at this time**, with Wind Speeds of 13 mph (as of March 8, 2014)
- Mount Washington** -13°F, Wind Chill Factor of -48
Currently **No significant weather present at this time**, with Wind Speeds of 70 mph (as of March 3, 2014)
- Barrow** -13°F, Wind Chill Factor of -30
Currently **No significant weather present at this time**, with Wind Speeds of 13 mph (as of March 2, 2014)
- Deadhorse** -9°F, Wind Chill Factor of -24
Currently **No significant weather present**
Current Temperatures below Freezing, from NOAA

Weather Station Details:

Weather Station: Mount Washington

- IAD Code: EMWH
- CreateTime Group: 3/3/2014 18:01
- Weather Station: Mount Washington
- Date: New Hampshire, United States
- Elevation (ft): 1915.00
- Temperature (°): -13
- Dew Point: -20.20
- Relative Humidity (%): 69
- Wind Direction (°): 200
- Wind Speed (mph): 70
- Wind Term
- Wind Chill Factor: -48
- Visibility: 25900m

The map shows the United States, Canada, and Alaska, with various weather stations marked by colored icons. The map includes labels for major cities and geographical features. The Esri logo is visible in the bottom right corner.

Panels

The screenshot shows a web application titled "Severe Weather Dashboard". The interface includes a top menu with "FILE", "TOOLS", and "VIEW". Below the menu is a search bar labeled "Find Places". The main content area is a map of the United States and parts of Mexico, showing weather data with color-coded overlays. On the left side, there is a panel titled "Below Freezing Temperatures" which lists weather stations and their current conditions. The panel is divided into sections: "Search", a list of stations, "Current Temperatures below freezing, from NOAA", and "Weather Station Details".

Red circles highlight the following UI elements:

- A red circle around the "Weather Station Details" section in the left panel, which contains a right-pointing arrow and a double-headed arrow.
- A red circle around the "No Features" text in the bottom left corner of the map area.

The map shows several weather stations with data points. The left panel lists the following stations:

- Nuiqsut: -29°F, Wind Chill Factor of -44. Currently **Mist** with Wind Speeds of 7 mph (as of March 4, 2014)
- Deadhorse: -28°F, Wind Chill Factor of -48. Currently **No significant weather present at this time**, with Wind Speeds of 13 mph (as of March 4, 2014)
- Kuparuk: -27°F, Wind Chill Factor of -49. Currently **No significant weather present at this time**, with Wind Speeds of 15 mph (as of March 4, 2014)

The map also shows the following cities and regions:

- San Francisco, Los Angeles, Dallas, Houston, Atlanta, New York, Philadelphia, Washington, Miami, Havana, Port-au-Prince, Santo Domingo, Kingston, Mexico City, Guatemala, and the Bahamas.

The bottom right corner features the ESRI logo and a "ZOOM" control with a plus sign.

Saving a new Operation View

The screenshot displays a software interface titled "Severe Weather Dashboard - MultiDisplay". The main window is divided into several sections:

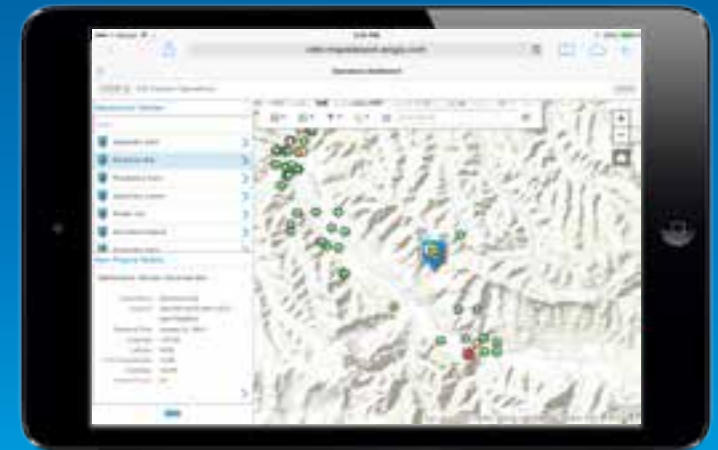
- Legend:** A list of weather events with corresponding icons:
 - Hail Storm Reports (24 hours)
 - Tornado Storm Reports (24 hour)
 - Tornado Storm Reports (past we)
 - Wind Storm Reports (24 hours)
 - Short Term Warnings - NOAA: N
 - Short Term Warnings - NOAA: N
 - Short Term Warnings - NOAA: N
 - Short Term Warnings - NOAA: N
 - Short Term Warnings - NOAA: N
- Severe Weather Web Map:** A map of North America showing weather data. A search bar at the top says "Find Places". The map shows the United States, Canada, and Mexico, with labels for the Pacific Ocean, Atlantic Ocean, and Gulf of Mexico. The Esri logo is visible in the bottom right corner of the map area.
- Below Freezing Temperat...:** A search bar with the text "Search". Below it, there are three entries for weather stations:
 - Nuiqsut:** -29°F, Wind Chill Factor of -44. Currently **Mist** with Wind Speeds of 7 mph (as of March 4, 2014).
 - Deadhorse:** -28°F, Wind Chill Factor of -48. Currently **No significant weather present at this time**, with Wind Speeds of 13 mph (as of March 4, 2014).
 - Kuparuk:** -27°F, Wind Chill Factor of -49. Currently **No significant weather**.
- Current Average US Tem...:** A bar chart showing the average current temperature in the United States. The bar is red and reaches the value 32 on a scale from 0 to 100. The number 19 is also visible on the right side of the chart.
- Current Temps:** A horizontal bar chart showing current temperatures for various locations. The x-axis ranges from -10 to 0. The bars are color-coded, with red for the highest temperatures and yellow for the lowest. The locations listed are:
 - Barrow
 - Cape Lisburne
 - Point Hope
 - Wainwright
 - Kivalina
 - Russian Mission
 - Savoonga
 - Deering
 - Nome
 - Selkirk
 - White Mountain
 - Anaktuvuk Pass
 - Barter Island
 - Northway
 - Tin City AFB
 - Mount Washington
 - Brevig Mission
 - Shanley
 - Bielson AFB
 - Selkirk
 - White Mountain
- Weather Station Details:** A panel for the "Weather Station: Deadhorse" with the following information:
 - ICAO Code: PASC
 - Date/Time Group: 3/4/2014 10:53
 - Weather Station: Deadhorse
 - State: Alaska, United States
 - Elevation (mi): 15.00
 - Temperature (°): -28
 - Dew Point: -32.10

What's Next

- **March Release**
 - Improved data source support
 - Fully leverage the new dynamic nature of a web map
 - Unified Search of both data and/or places
 - Improve working with selections
 - Widget enhancements
 - **NEW Web Viewer**
 - Addresses key cross-platform needs
 - User's can open and work with Single Monitor Operations Views
- **In Development**

What's Coming in March

- **Operations Dashboard in a Browser!**
 - Single display operation view
 - All widgets, feature actions and map tools supported**
 - Supported within the following browsers
 - IE 9.0+, Chrome, Firefox, Safari
 - Mobile Browsers (tablets only)

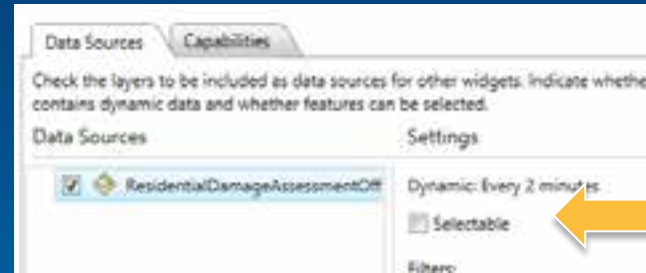


What's Coming in March

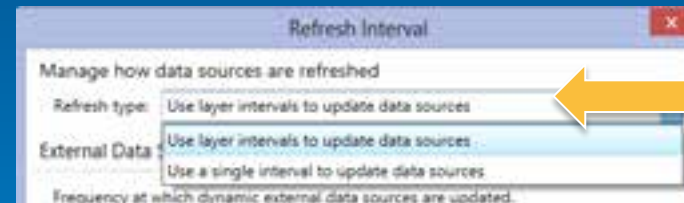
- Data source improvements
 - Support for dynamic map service layers as a data source
 - Honor dynamic layer settings for all layers
 - Ability to override the refresh for your data source layers
- Search Improvements
 - Search against features
 - Search suggestions for geocode
 - Search by coordinate notation
- Coordinate Display



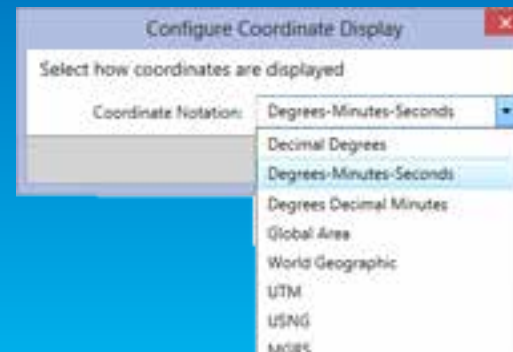
Set a refresh interval for a layer from the layer menu



Reads the layer refresh setting in your web map



Override that refresh for data sources if you want

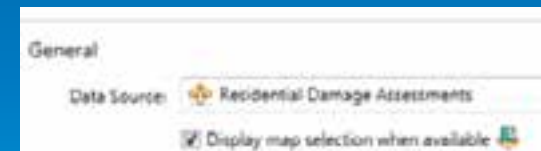
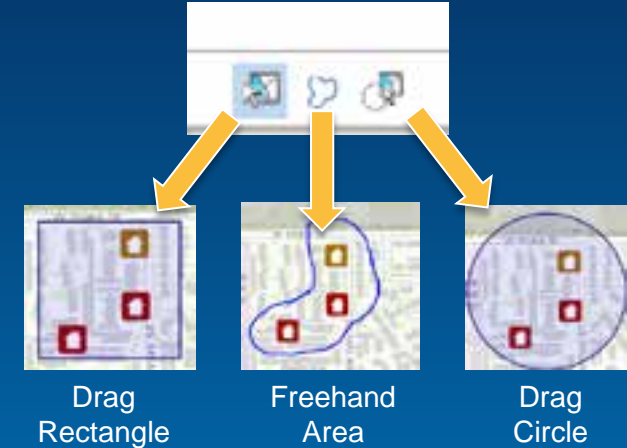


Configure coordinate notation

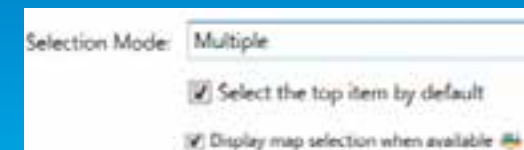
What's Coming in March

- Selection Improvements

- New Clear Feature Selection Tool
- New Selection Tool options
 - Rectangle, freehand, circle
- New List configuration settings for handling of selections from data sources



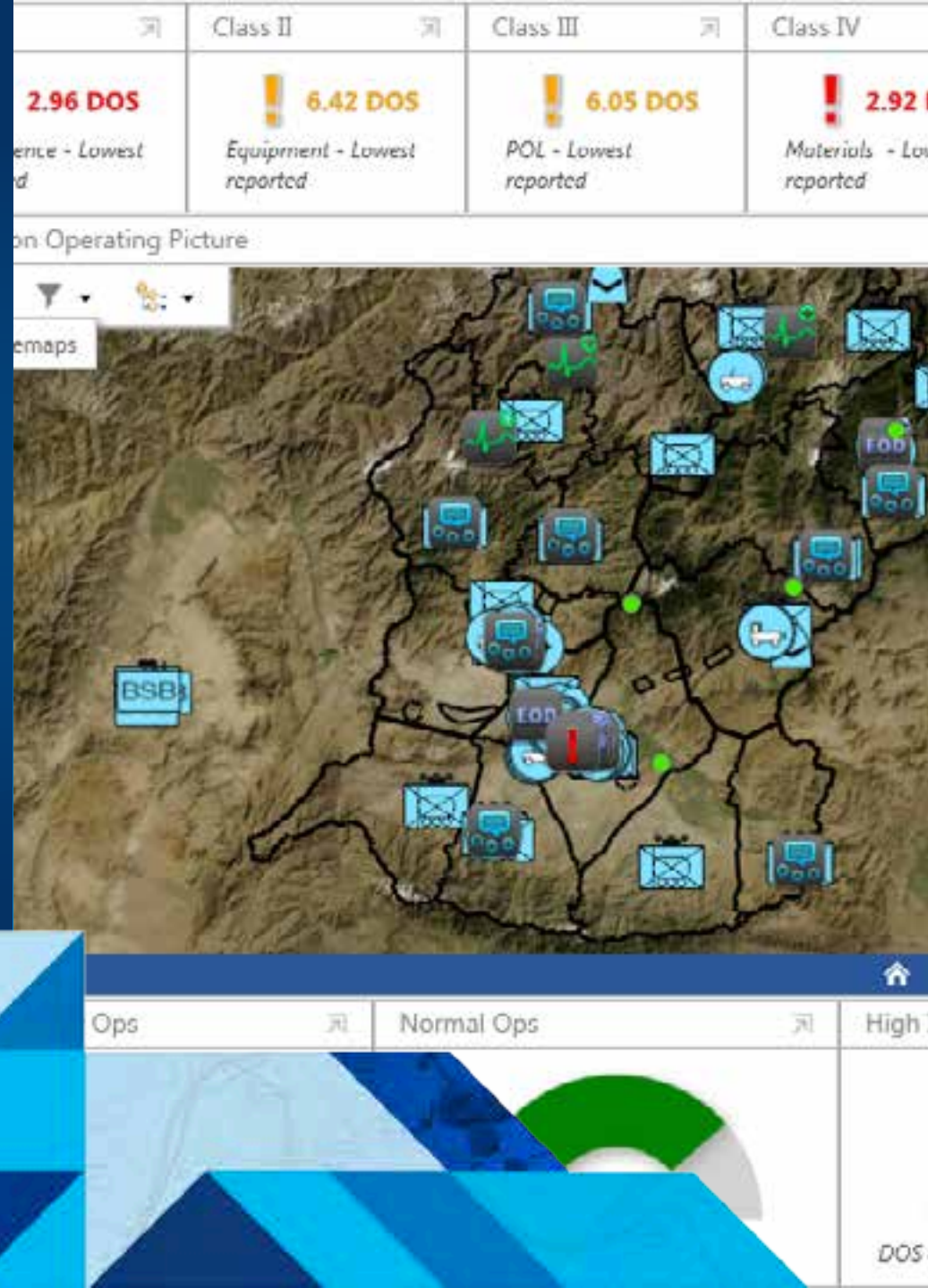
Filter when features are selected on the map



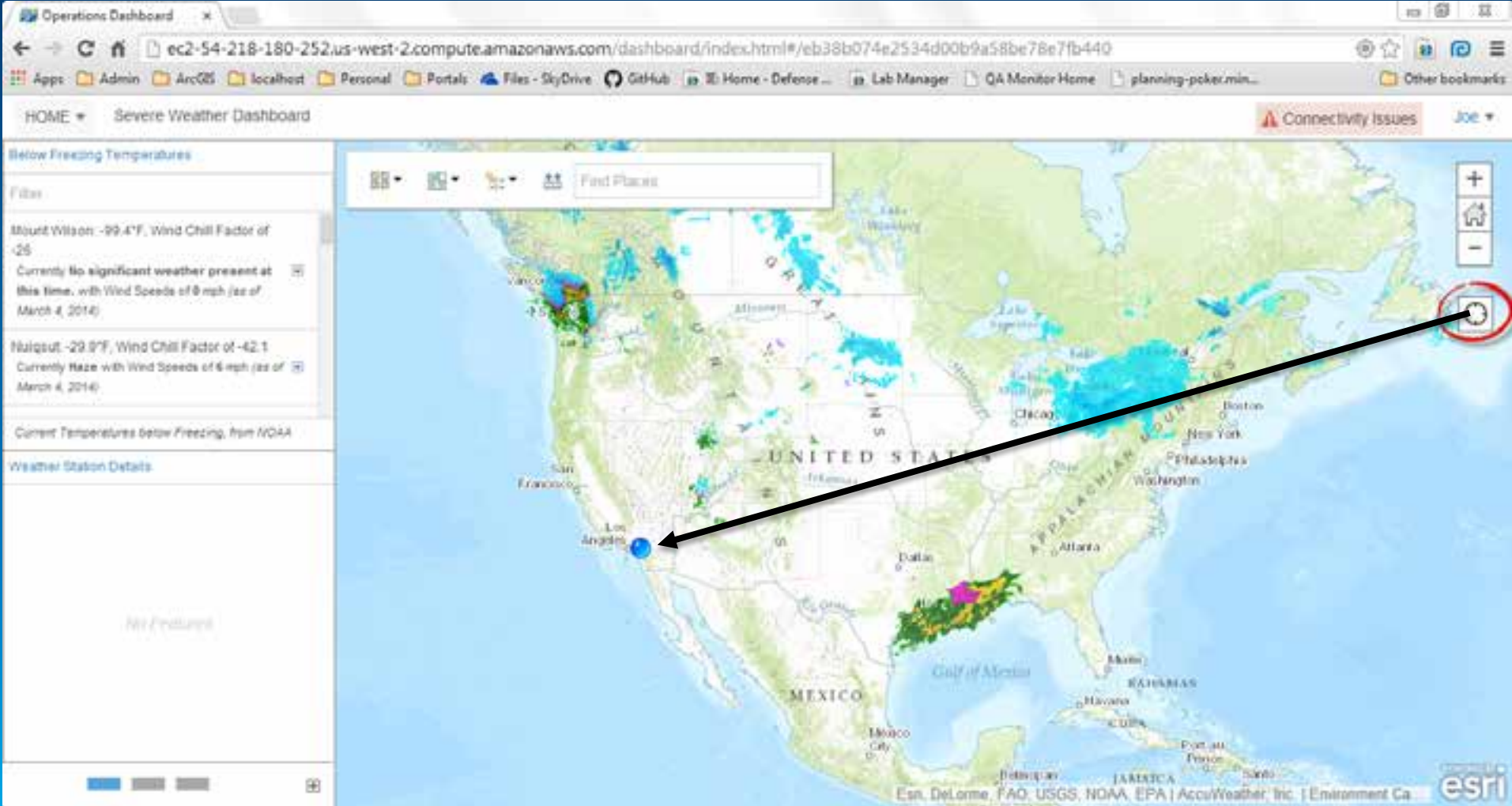
Set the default behavior to select the top most item in the list

Demonstration

Using Operations Dashboard in Browser



Operations Dashboard in the Browser



Resources

<http://doc.arcgis.com/en/operations-dashboard/>

<http://forums.arcgis.com/>

<http://ideas.arcgis.com/>

Federal GIS Conference 2014

February 10–11, 2014 | Washington DC



**Don't forget to complete
a session evaluation form!**

Session ID: 38

Federal GIS Conference 2014

February 10–11, 2014 | Washington DC



Networking Reception

Smithsonian National Museum of Natural History

Tuesday, 6:30 PM–9:30 PM

Bus Pickup located on L Street

Federal GIS Conference 2014

February 10–11, 2014 | Washington DC



Print your customized Certificate of Attendance!

Printing stations located in Hall B
and the 140/150 Room Concourse.

Federal GIS Conference 2014

February 10–11, 2014 | Washington DC



GIS Solutions EXPO, Hall B

Monday, 12:30 PM–6:30 PM

Tuesday, 10:45 AM–4:00 PM

- Exhibitors
- Hands-On Learning Lab
- Technical & Extended Support
- Demo Theater
- Esri Showcase

Federal GIS Conference 2014

February 10–11, 2014 | Washington DC



Interested in diving deeper into Esri technology?

Add a day to your Fed GIS experience and register to attend the Esri DevSummit Washington DC. Stop by the registration counter to sign up.



Understanding our world.