Deploying a Regional Situational Awareness Viewer

In this exercise you will use the Situational Awareness Viewer Solution as a starting point for creating a focused viewer for your Region.

Audience: Decision-makers who need to prioritize the allocation of resources and assistance.

Problem: A need to understand the potential impacts of a forecasted, modeled, or actual disaster on people and infrastructure within a specific region.

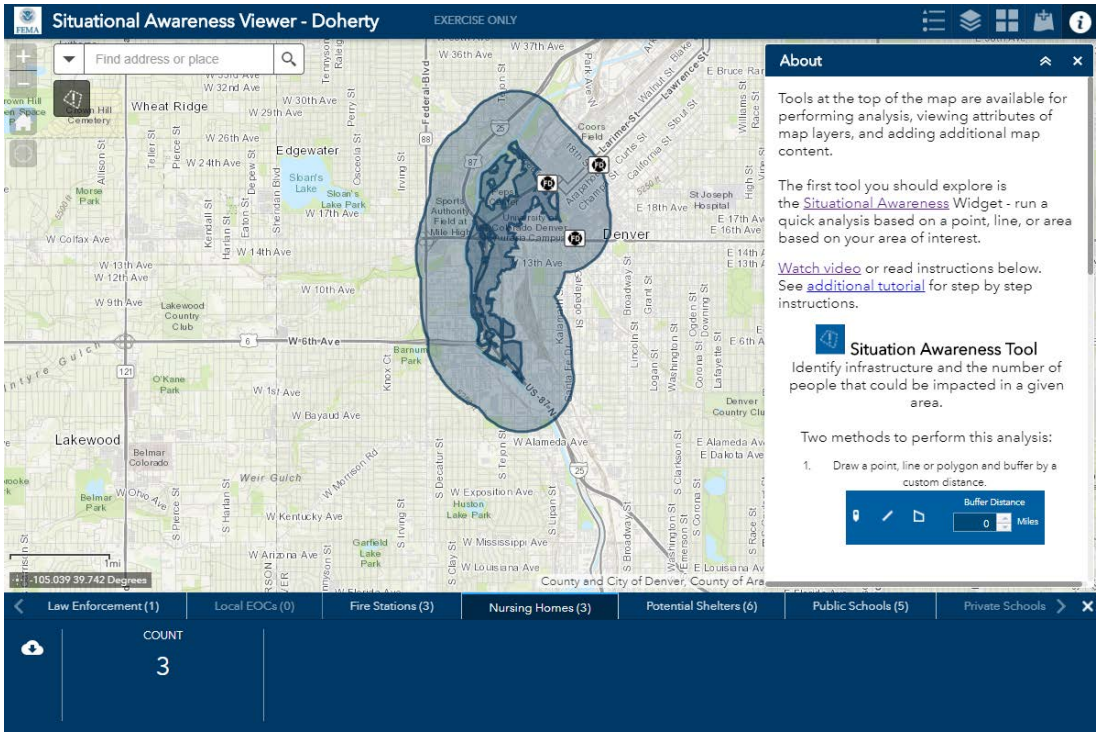
Solution: Regional Situational Awareness Viewer

What is a Situational Awareness Viewer?

A Situational Awareness Viewer can be used by emergency management staff to identify the impact of an incident on public infrastructure and human populations. It helps watch officers analyze and understand potential impacts to the community while planning for an impending incident.

The Situational Awareness Viewer is a configuration of Web AppBuilder for ArcGIS that can be used to analyze the impact to people and places within an incident area.

Watch the Video before getting started!



Test the Example App

NAPSG Foundation

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1 Sign-in

First, Sign in to your ArcGIS Online organization.

1. Go to http://arcgis.com/home/index.html

2. Type in your Username and Password

If you do not have this information, contact your organization technical support. If you are attending a NAPSG training event, are in need of a temporary training account, or experience any issues, please contact the NAPSG team (training@publicsafetygis.org)

2 Prepare Your Web Map

The Situational Awareness Viewer requires a map with critical infrastructure, and optionally demographics, for your area of interest. In the last tutorial, Skills for Geo-Enabled Plans, you configured a web map for your region. If that is still available you should use that as a starting point.

If you did not complete the previous tutorial or no longer have this web map:

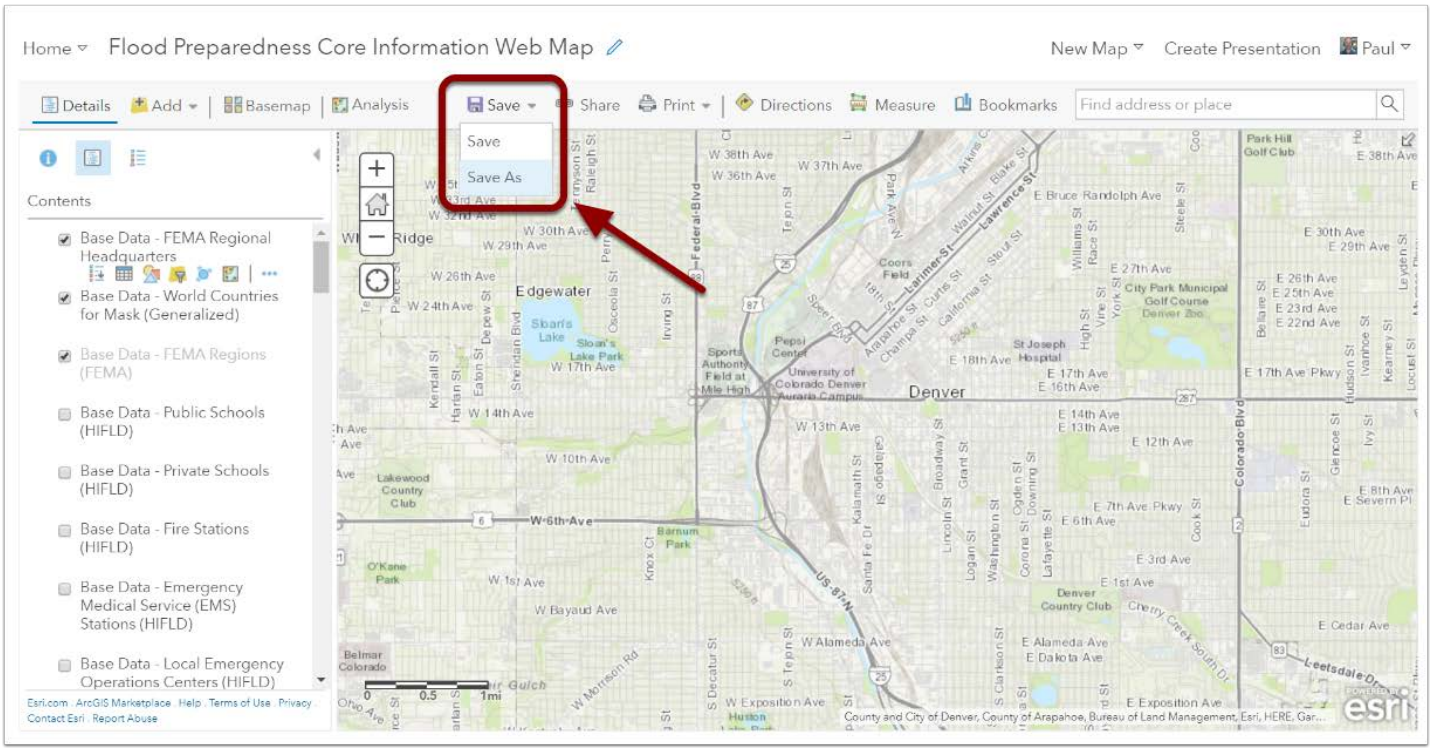
1. You may use the Flood Preparedness Core Information Web Map (Click on the link or search for 3790b1270f9e4f8ea6ffea92afe7bbfc in ArcGIS Online).

2. Open the web map viewer.

3. Click Save --> Save As

Best Practice: Create a folder in Content for this exercise and store web map and apps in that specific folder.

[See Next Page for screenshots of steps]

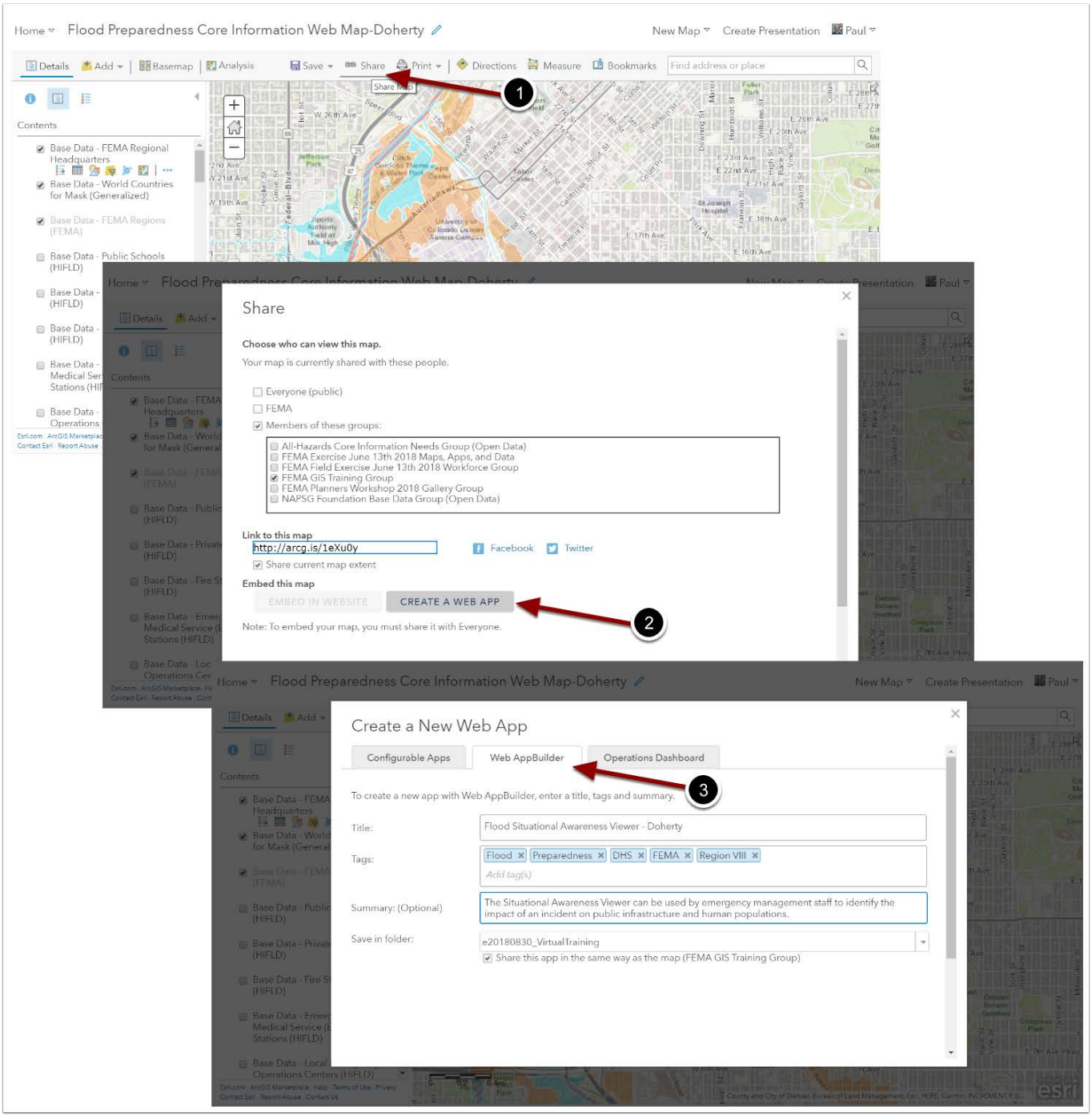


3 Create a New Application

In this step we will create a new Web Mapping Application from the Web Map Viewer.

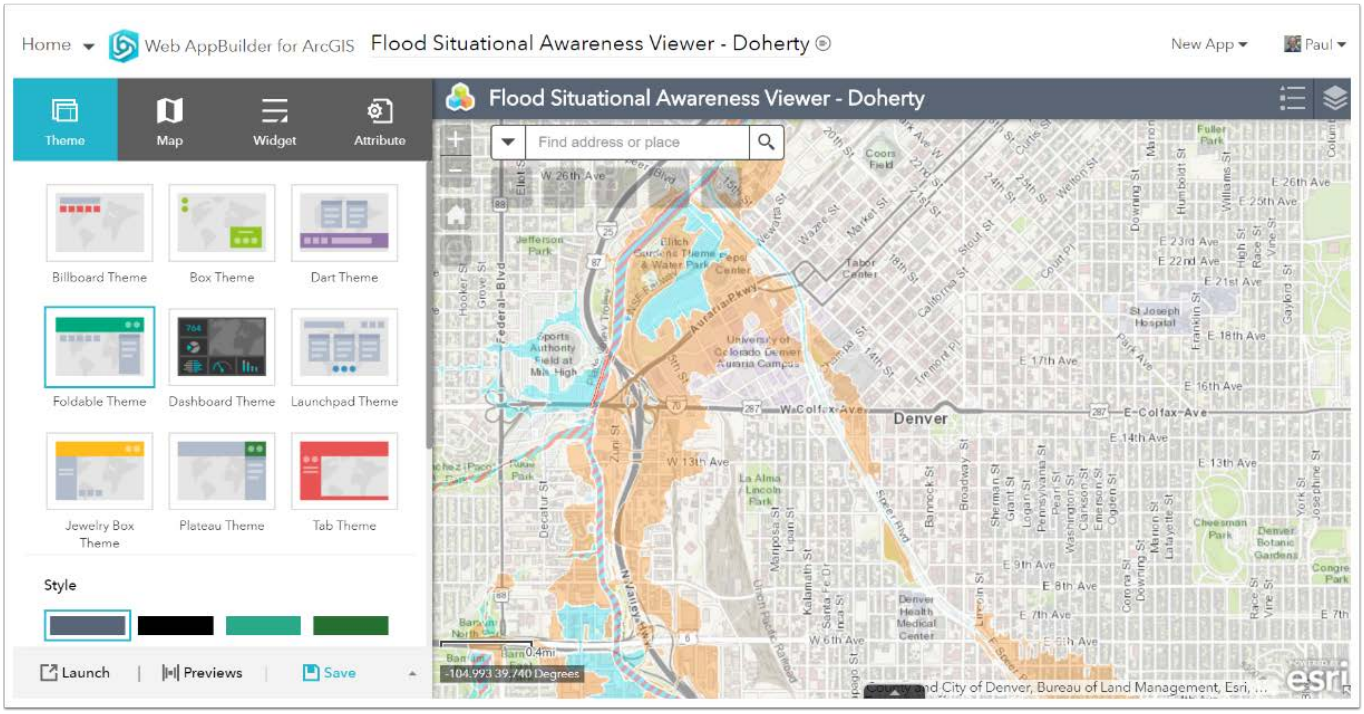
1. After saving the map to your content, click **Share**.
2. Click on **CREATE A WEB APP**.
3. Choose the Web AppBuilder tab and fill out Title, Tags, and Summary. Scroll down and click **GET STARTED**.

[See Next Page for screenshots of steps]


Home
Flood Preparedness Core Information Web Map-Doherty
New Map
Create Presentation
Paul
Details
Add
Basemap
Analysis
Save
Share
Print
Directions
Measure
Bookmarks
Find address or place
Share Map
1
Contents
Base Data - FEMA Regional Headquarters
Base Data - World Countries for Mask (Generalized)
Base Data - FEMA Regions (FEMA)
Base Data - Public Schools (HIFLD)
Share
Choose who can view this map.
Your map is currently shared with these people.
Everyone (public)
FEMA
Members of these groups:
All-Hazards Core Information Needs Group (Open Data)
FEMA Exercise June 13th 2018 Maps, Apps, and Data
FEMA Field Exercise June 13th 2018 Workforce Group
FEMA GIS Training Group
FEMA Planners Workshop 2018 Gallery Group
NAPSG Foundation Base Data Group (Open Data)
Link to this map
http://arcg.is/1eXu0y
Facebook
Twitter
Share current map extent
Embed this map
EMBED IN WEBSITE
CREATE A WEB APP
2
Note: To embed your map, you must share it with Everyone.
Create a New Web App
Configurable Apps
Web AppBuilder
Operations Dashboard
3
To create a new app with Web AppBuilder, enter a title, tags and summary.
Title:
Flood Situational Awareness Viewer - Doherty
Tags:
Flood
Preparedness
DHS
FEMA
Region VIII
Add tag(s)
Summary: (Optional)
The Situational Awareness Viewer can be used by emergency management staff to identify the impact of an incident on public infrastructure and human populations.
Save in folder:
e20180830_VirtualTraining
Share this app in the same way as the map (FEMA GIS Training Group)
esri

4 Configure the Application

In the last step, you launched a new application and it should have opened in Builder mode as shown below.



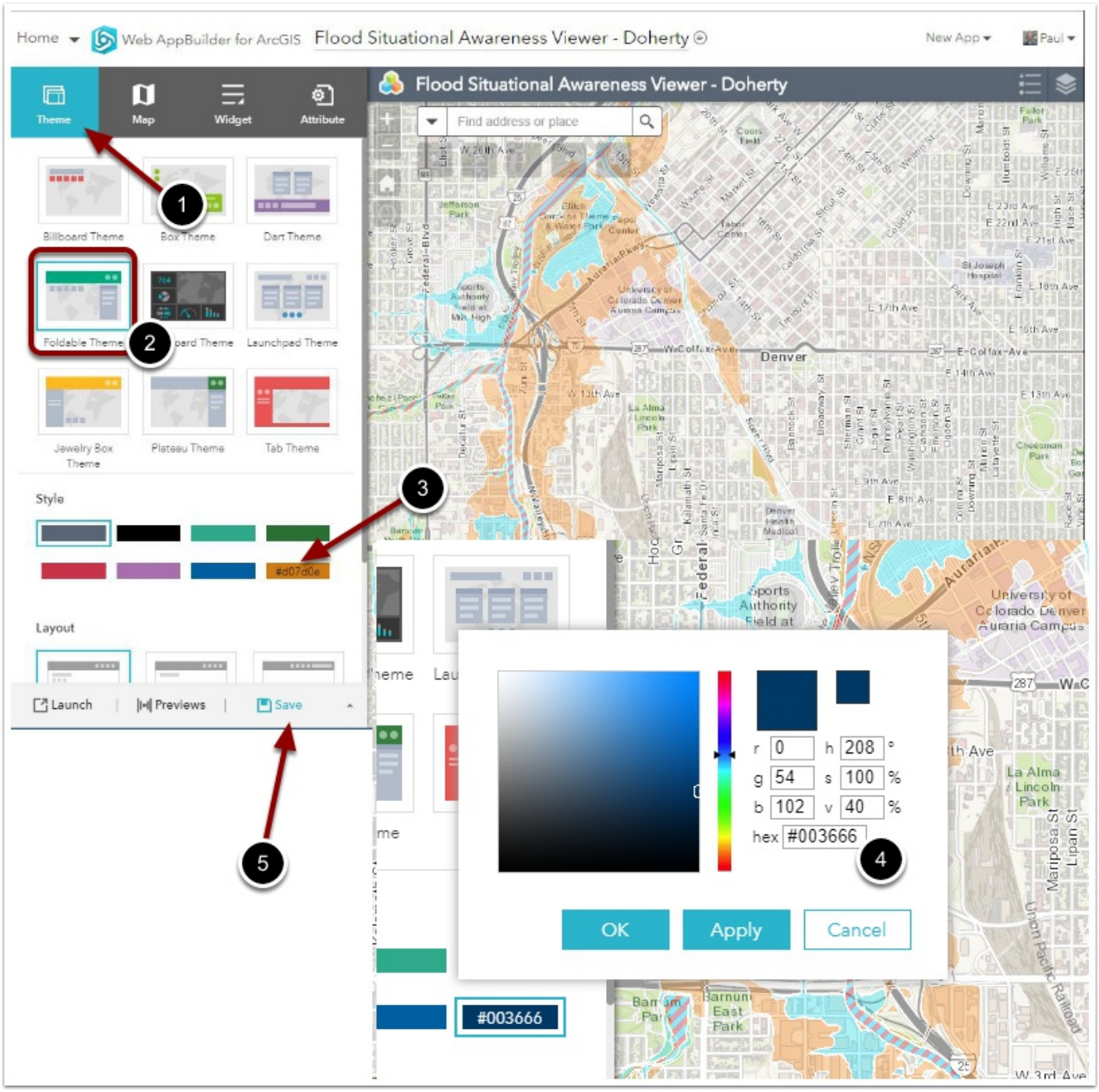
4.1 Theme

A theme is a template framework representing the look and feel of an app. Contents in a theme include a collection of panels, styles, and layouts, and a set of preconfigured theme widgets. One app can include more than one theme, but it can only use one theme while running.

For more details on this topic see Theme.

1. Navigate to the **Theme** tab (if necessary).
2. Keep the **Foldable Theme**.
3. **Style** - Click on the bottom right palette to open more options.
4. Click on **Custom** until you get to the dialogue where you can enter in your own hex code: For example, Black is typically a good neutral option that won't distract from your map.
5. Click **Save** often!

Tip: You can use the Eye-Dropper extension to copy hex codes from websites.

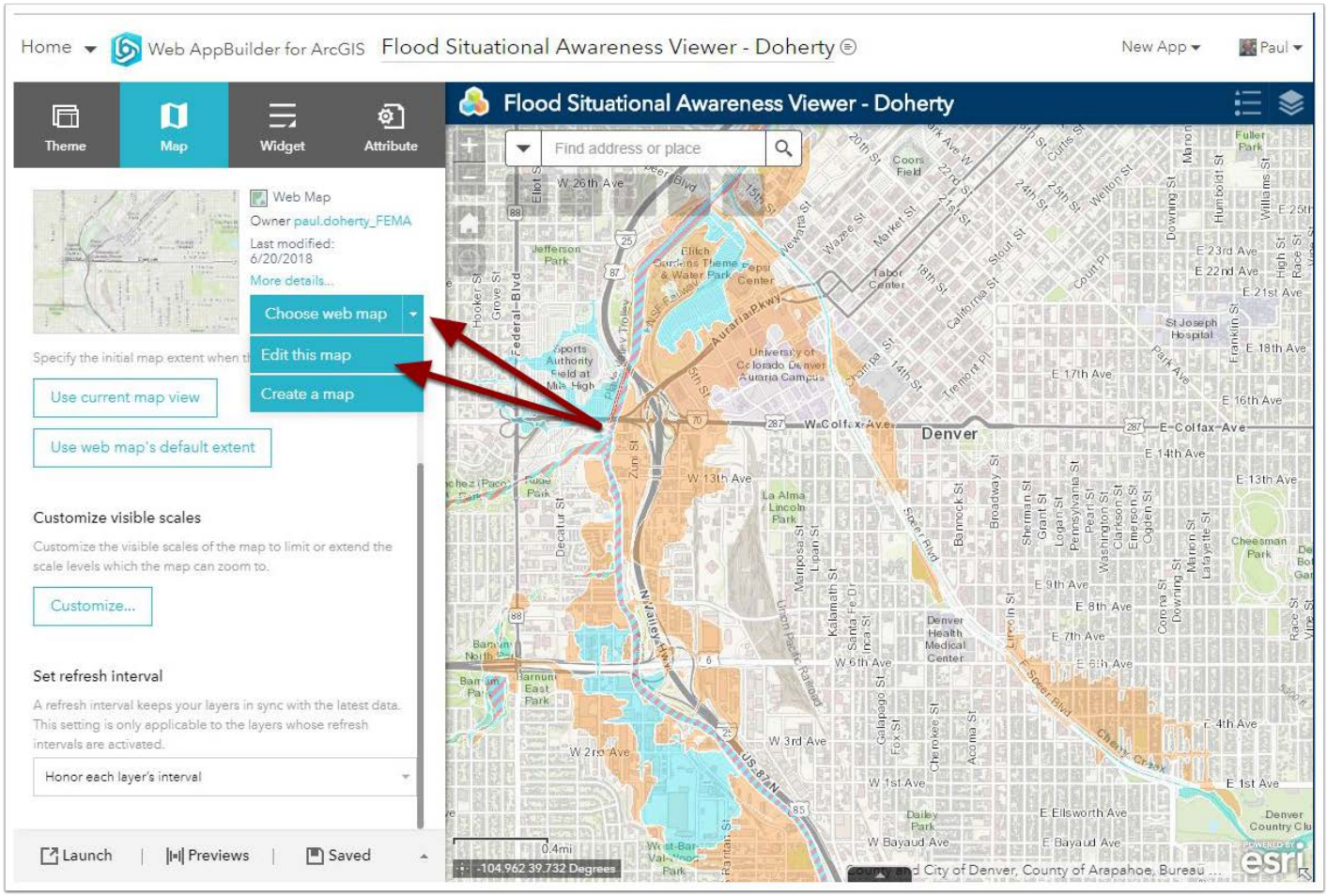


4.2 Map

The app created by Web AppBuilder for ArcGIS is based on a web map or web scene from ArcGIS Online or Portal for ArcGIS. 2D apps are built with web maps and 3D apps are built with web scenes.

For more information on this topic see: Map and Scene

One of the most important features in this tab is accessed on the Map tab, by clicking on the dropdown next to **Choose Web Map** and then **Edit this map.** This opens web map in Map Viewer. Edit the map as you normally do in Map Viewer and save it if you are the owner of the map or save it as a copy if you are not. When you close Map Viewer, the selected web map in your app is automatically updated. This is a quick way to make edits to your web map on the fly!



4.3 Attribute

The Attribute tab allows you to perform basic customization at the app level, such as configuring your app's banner.

For more information on this topic see: Attribute

The following items can be added to the banner:

1. **Logo**—Click the logo icon to open the file browser and select an image file. If you don't want to have a logo in the app, click the X icon on the logo to remove it.
2. **Title**—Click the **A** to customize the font style for the title of the app. **Subtitle**—Click the **A** to customize the font style for the subtitle of the app. This is a good location to add EXERCISE ONLY to your app.
3. **Links**—Click **Add New Link** to add a hyperlink to the banner and provide a name and valid URL. To edit a link, click the pencil icon. To remove a link, click the X icon. Limit of 4 links.

5 Configure Widgets

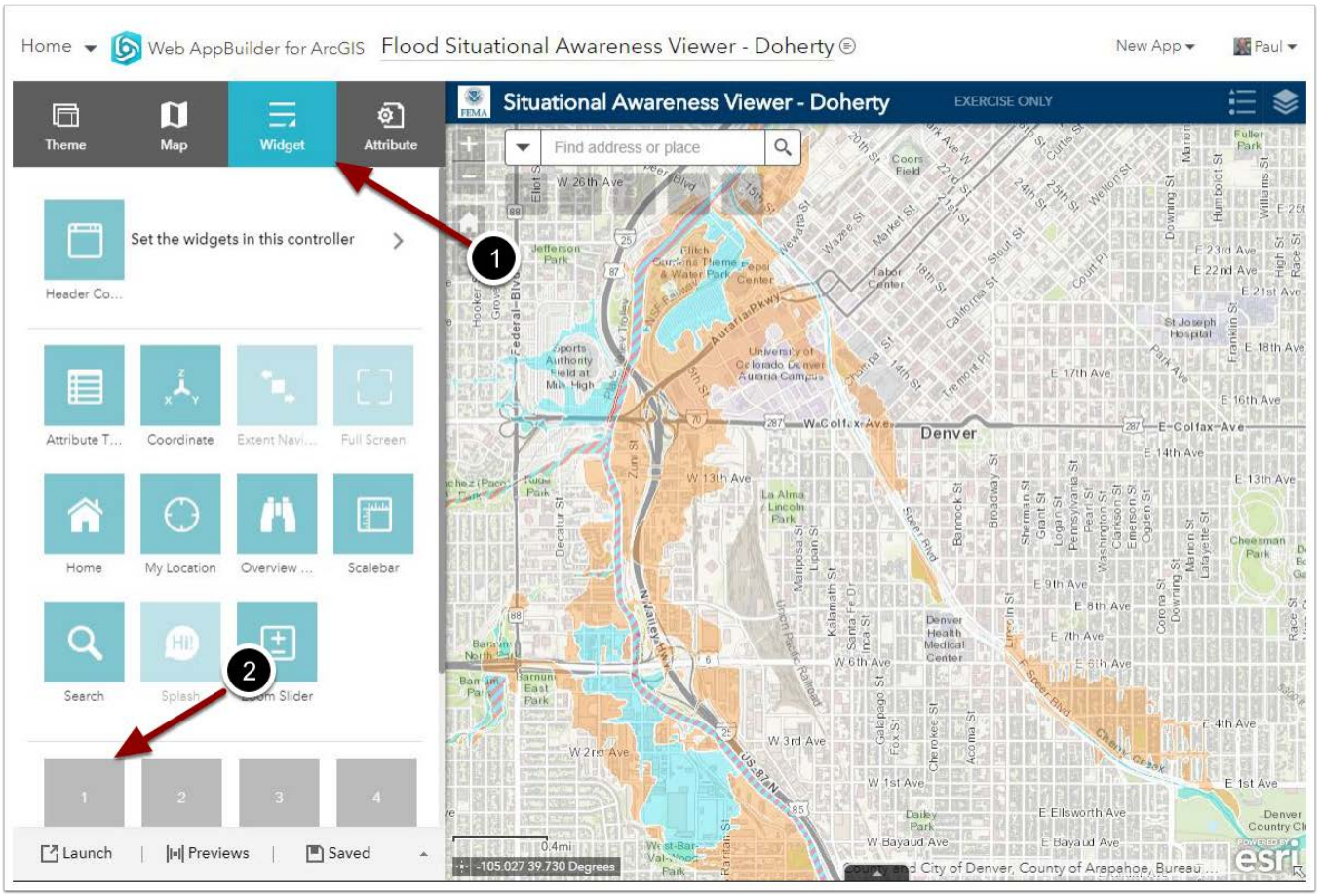
Web AppBuilder includes many out-of-the-box widgets. These widgets provide fundamental functions to easily create web apps. Most of them have parameters that allow configuration and customization. Widgets added from the Choose Widget window can be set to open automatically when an app starts. In general, widgets are categorized as two types: off-panel and in-panel. The Widget tab allows you to configure the functionality of the app.

For more details on this topic, see Widget.

1. Click on the **Widget** tab.

2. Click on the empty container indicated by the **2**. This will open up a panel of possible widgets for that container.

[See Next Page for screenshots of steps]


Home
Web AppBuilder for ArcGIS
Flood Situational Awareness Viewer - Doherty
New App
Paul
Theme
Map
Widget
Attribute
Set the widgets in this controller
Header Co...
Attribute T...
Coordinate
Extent Navi...
Full Screen
Home
My Location
Overview ...
Scalebar
Search
Splash
Zoom Slider
1
2
3
4
Launch
Previews
Saved
Situational Awareness Viewer - Doherty
EXERCISE ONLY
Find address or place
Denver
-105.027 39.730 Degrees
esri

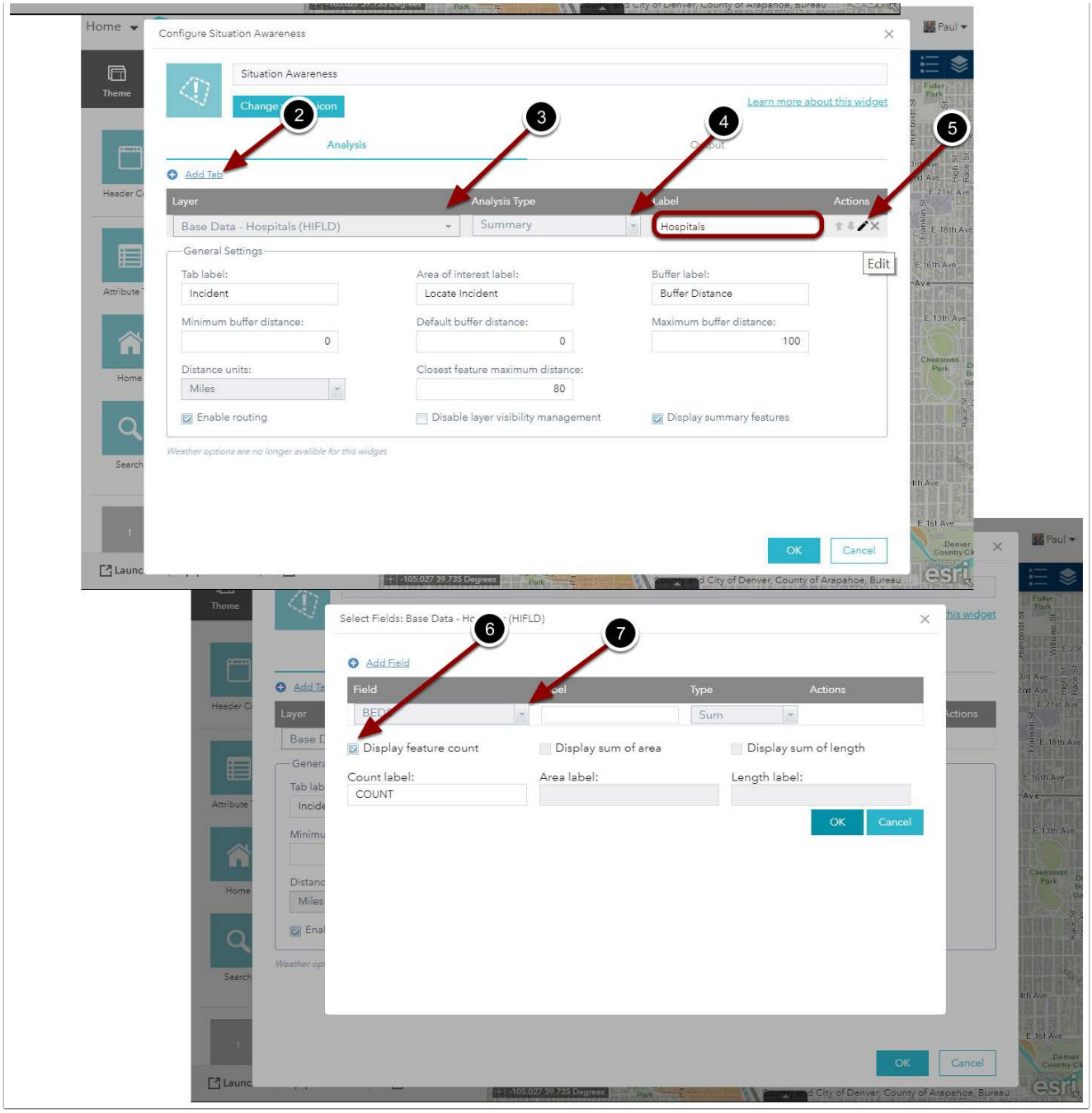
5.1 Situational Awareness – Analysis

The Situational Awareness Viewer template requires the Situation Awareness widget, which allows you to locate an incident on the map and analyze information from different feature layers within a specified distance of the incident. This widget can be added to the Header Controller or the numbered widget containers (upper left) on your map. For this exercise we will use the numbered widget containers.

For details on this topic, see Situation Awareness Widget.

See the screenshots on the following page that complemented the numbered list below.

1. Under **Choose Widget** click on the Situation Awareness widget. Click **OK**.
2. In your Situation Awareness widget, add tabs to display summarized information from the layers in the map by clicking **Add Tab**.
3. Choose 'Base Data - Hospitals' from the **Layer** dropdown.
4. Choose 'Summary' from the **Analysis Type** dropdown.
5. **Label -** Enter 'Hospitals' to shorten the label.
6. Under **Actions**, use the **Edit** tool to open the **Select Fields.**
7. Check on **Display feature count.**
8. Select BEDS from the dropdown, under **Type** select SUM. When you are finished, click **OK**.



You can repeat these steps for another ~4 to 6 types of infrastructure that are key essential elements of information (EEI) for your stakeholders. Here are some suggestions:

- Freeways
- Bridges
- Cellular Towers
- Law Enforcement
- Fire Stations
- Nursing Homes
- National Shelter Facilities
- Public & Private Schools

Tip: You can also analyze demographics from the Social Vulnerability layer or a finer resolution population dataset if available. These tabs are configured against the layers in your web map, which means you can configure your web map with additional layers as needed.

5.2 Situational Awareness – Output

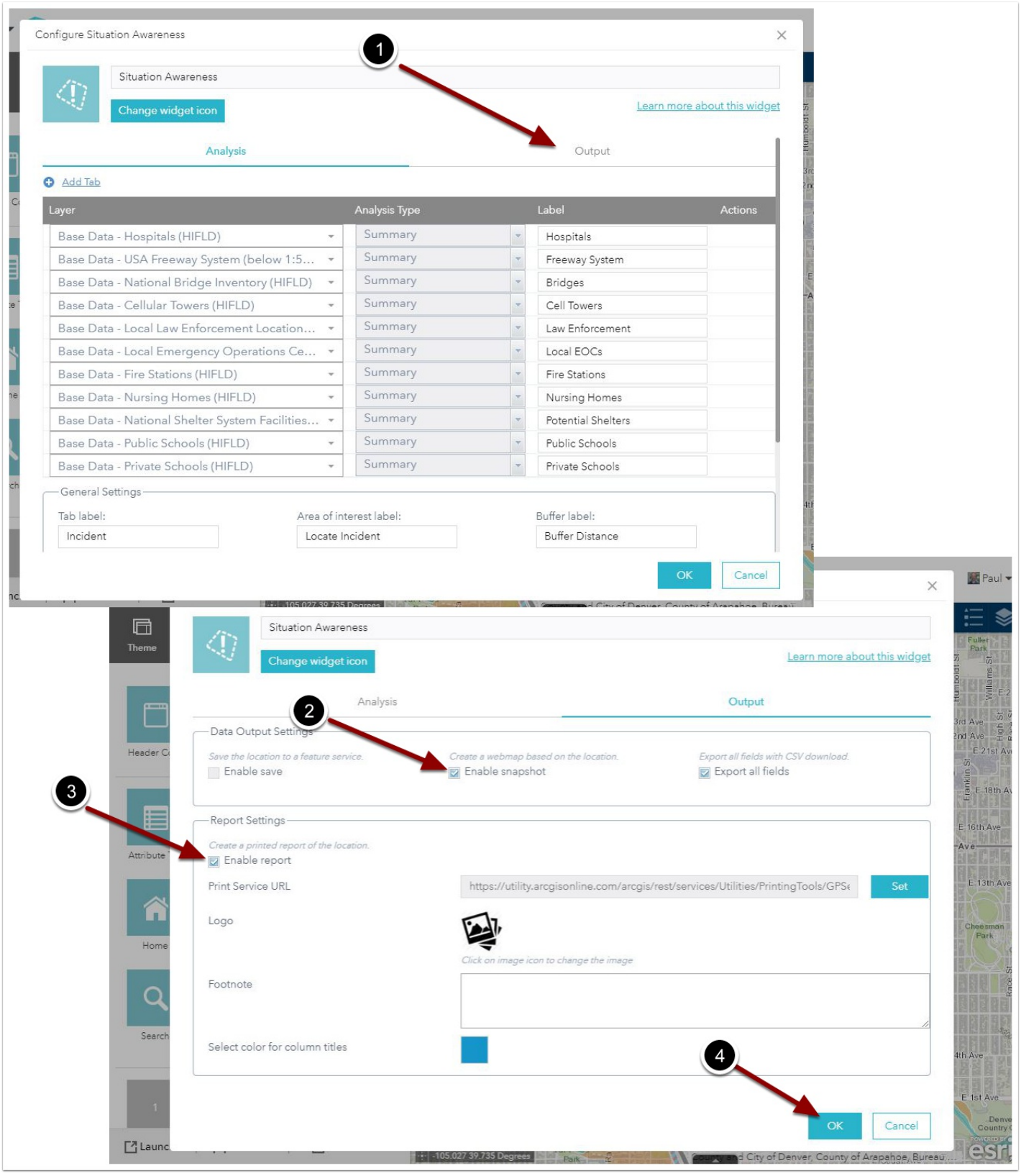
In this step, we will configure some additional capabilities that allow us to export data for a variety of purposes, save our input and analysis layers, and also generate PDF reports.

1. Click on the **Output** tab and see the Data Output Settings.
2. Check on **Enable snapshot** - enables the ability to create a snapshot of the situation at a specific moment in time, but special permissions are needed for each layer.
3. Under Report Settings, check the **Enable report** option to create a report of the map and summarized information from the configured tabs. Optionally, click the image icon to specify a logo image for the report. You can also provide text to be displayed in the footnote of the report, or choose a color for the column headers. The printed report will contain a map and a series of tables displaying the analysis results. Fields that are visible in the layer's pop-up are the fields reflected in the detailed information table for each tab.
4. Click **OK** when you are done, then click OK on the main panel.

Optional:

The check **Enable Save** option to allow users to add or delete features from the feature service. Check Save points, Save lines, or Save polygons, and specify the layer for each selected type (this will only work with editable layers). Some good feature layer templates for this can be found in the ArcGIS for Emergency Management Service Catalog.

Don't forget to click SAVE!

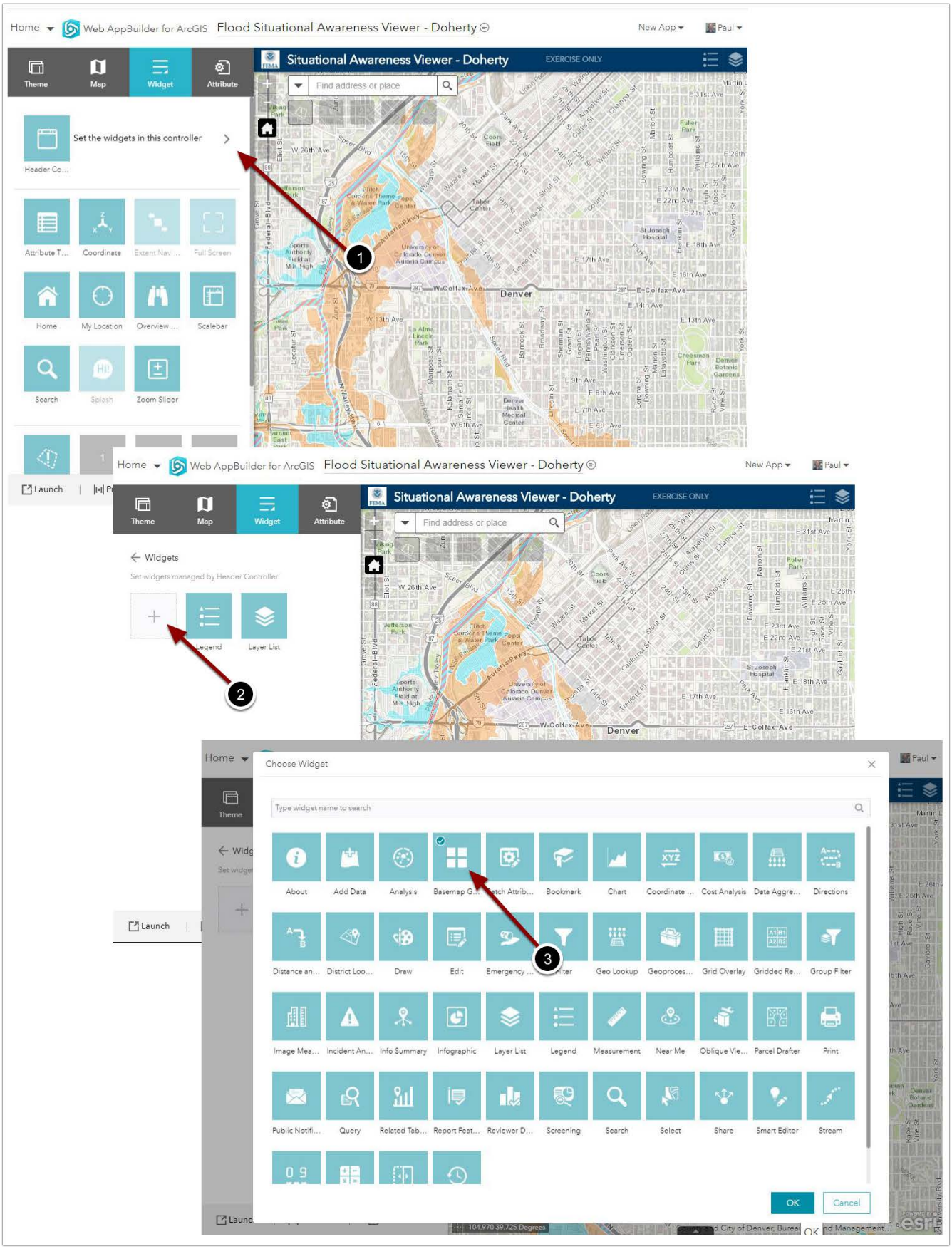

Configure Situation Awareness
1
Situation Awareness
Change widget icon
Learn more about this widget
Analysis
Output
Add Tab
Layer
Analysis Type
Label
Actions
Base Data - Hospitals (HIFLD)
Summary
Hospitals
Base Data - USA Freeway System (below 1:5...
Summary
Freeway System
Base Data - National Bridge Inventory (HIFLD)
Summary
Bridges
Base Data - Cellular Towers (HIFLD)
Summary
Cell Towers
Base Data - Local Law Enforcement Location...
Summary
Law Enforcement
Base Data - Local Emergency Operations Ce...
Summary
Local EOCs
Base Data - Fire Stations (HIFLD)
Summary
Fire Stations
Base Data - Nursing Homes (HIFLD)
Summary
Nursing Homes
Base Data - National Shelter System Facilities...
Summary
Potential Shelters
Base Data - Public Schools (HIFLD)
Summary
Public Schools
Base Data - Private Schools (HIFLD)
Summary
Private Schools
General Settings
Tab label:
Incident
Area of interest label:
Locate Incident
Buffer label:
Buffer Distance
OK
Cancel
Theme
Situation Awareness
Change widget icon
Learn more about this widget
Analysis
Output
2
Data Output Settings
Save the location to a feature service.
Enable save
Create a webmap based on the location.
Enable snapshot
Export all fields with CSV download.
Export all fields
3
Report Settings
Create a printed report of the location.
Enable report
Print Service URL
https://utility.arcgisonline.com/arcgis/rest/services/Utilities/PrintingTools/GPS
Set
Logo
Click on image icon to change the image
Footnote
Select color for column titles
4
OK
Cancel

5.3 Basemap Widget

The Basemap Gallery widget presents a gallery of basemaps and allows you to select one from the gallery as your app's basemap. The basemap can be user-defined or from your organization or portal. However, all basemaps added to the Basemap Gallery widget must have the same spatial reference. In addition, you have an option to synchronize the app at run time with the Basemap Gallery setting in your organization or portal. For now, accept the defaults. For more details on this topic, see Basemap Gallery widget.

1. Open the option to **Set the widgets in this controller**. This Header Controller is the area for widgets in the upper right section of the app. We will use this area for widgets related to the map content.
2. Click **+** to open the widget collection that allows you to select and add widgets to the application.
3. In the **Choose Widget** window, search for the widget or select one or more widgets. The selected widgets are highlighted in the blue boxes. Click on the **Basemap Gallery to add** and configure this widget. Then click **OK** on the lower right. After the first "OK" the you are taken to the Basemap Gallery.

[See Next Page for screenshots of steps]

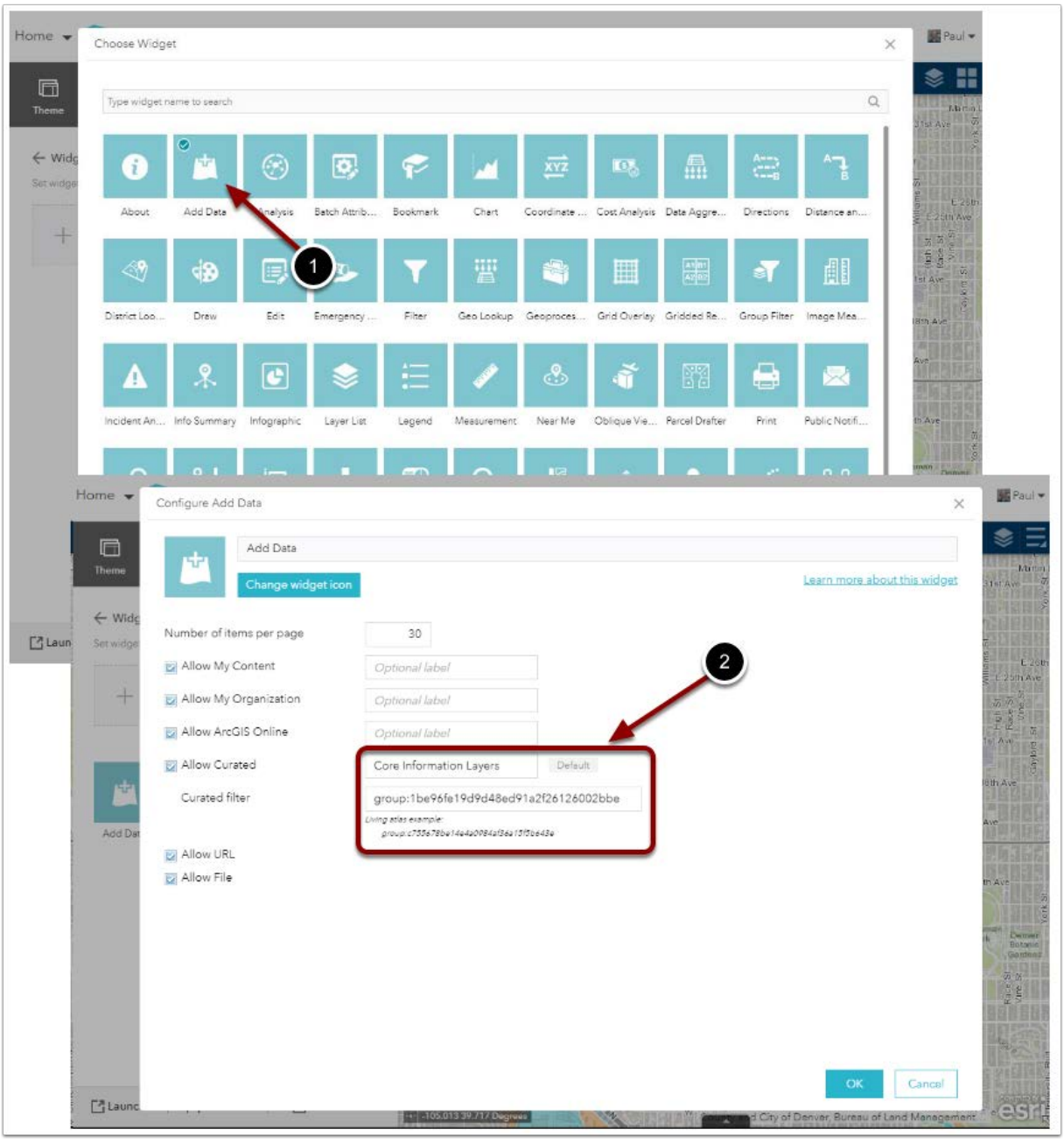

Home
Web AppBuilder for ArcGIS
Flood Situational Awareness Viewer - Doherty
New App
Paul
Theme
Map
Widget
Attribute
Set the widgets in this controller
Situational Awareness Viewer - Doherty
EXERCISE ONLY
Find address or place
Denver
1
Widgets
Set widgets managed by Header Controller
Legend
Layer List
2
Launch
Choose Widget
Type widget name to search
About
Add Data
Analysis
Basemap G...
Bookmark
Chart
Coordinate ...
Cost Analysis
Data Aggre...
Directions
Distance an...
District Loo...
Draw
Edit
Emergency ...
Geo Lookup
Geoproces...
Grid Overlay
Gridded Re...
Group Filter
Image Mea...
Incident An...
Info Summary
Infographic
Layer List
Legend
Measurement
Near Me
Oblique Vie...
Parcel Drafter
Print
Public Notifi...
Query
Related Tab...
Report Feat...
Reviewer D...
Screening
Search
Select
Share
Smart Editor
Stream
OK
Cancel
3

5.4 Add Data

The Add Data widget enables you to add data to the map by searching for layers in ArcGIS Online or Portal for ArcGIS content, entering URLs, or uploading local files. In this way, you can temporarily add layers to and remove layers from the map. However, you can't save the layers to the map – this is a temporary way to add an interact with data outside your web map.

1. Follow the previous steps for adding new widgets to the header. This time, select the **Add Data** widget.
2. This widget can be configured to search a curated list of layers with incident data, live feeds, and base data. Here we have provided an example for Core Information Layers. Copy and paste “group: 1be96fe19d9d48ed91a2f26126002bbe” into the dialogue.

[See Next Page for screenshots of steps]


Home
Choose Widget
Type widget name to search
About
Add Data
Batch Attrib...
Bookmark
Chart
Coordinate ...
Cost Analysis
Date Aggre...
Directions
Distance an...
District Loo...
Draw
Edit
Emergency ...
Filter
Geo Lookup
Geoproces...
Grid Overlay
Gridded Re...
Group Filter
Image Mea...
Incident An...
Info Summary
Infographic
Layer List
Legend
Measurement
Near Me
Oblique Vie...
Parcel Drafter
Print
Public Notifi...
1
Configure Add Data
Add Data
Change widget icon
Learn more about this widget
Number of items per page
30
Allow My Content
Optional label
Allow My Organization
Optional label
Allow ArcGIS Online
Optional label
Allow Curated
Core Information Layers
Default
Curated filter
group:1be96fe19d9d48ed91a2f26126002bbe
Living atlas example:
Allow URL
Allow File
2
OK
Cancel

5.5 More Widgets?

While this web mapping application is very easy to use, you will want to limit the number of widgets and layers you add. A general guideline is "4 to 7". If you have less than 4 things on your map, perhaps it is too simple and could be combined with another map. If you have more than 7 things, perhaps your map is too complex and should be divided into separate themes based on a particular audience and their workflow. (Logistics, Operations, Planning, etc.). Here are some other popular widgets you might consider adding or using to replace one on your map. See the full list of +40 Widgets.

Recommended Settings for Default Widgets

Attribute Table - The Attribute Table widget displays a tabular view of operational layers' attributes. It displays at the bottom of your web application and can be opened, resized, or closed.

Coordinate - The Coordinate widget displays x and y coordinate values on the map. With the default coordinate system of the web map, the coordinate values change dynamically when the mouse pointer moves to different locations on the map. Configure to work with US National Grid.

Extent Navigate - The Extent Navigate widget allows you to navigate the map to its previous or next extent.

Home - The Home Button widget zooms the map to the initial map extent.

My Location - The My Location widget allows the network to detect your physical location and zoom the map to it. The location can be highlighted if necessary. **NOTE:** Some browsers require https to be enabled.

Overview - The Overview Map widget displays the current extent of the map within the context of a larger area and updates whenever the map extent changes.

Scalebar - The Scalebar widget displays a scalebar on the map. The widget respects various coordinate systems and displays units in English or metric values.

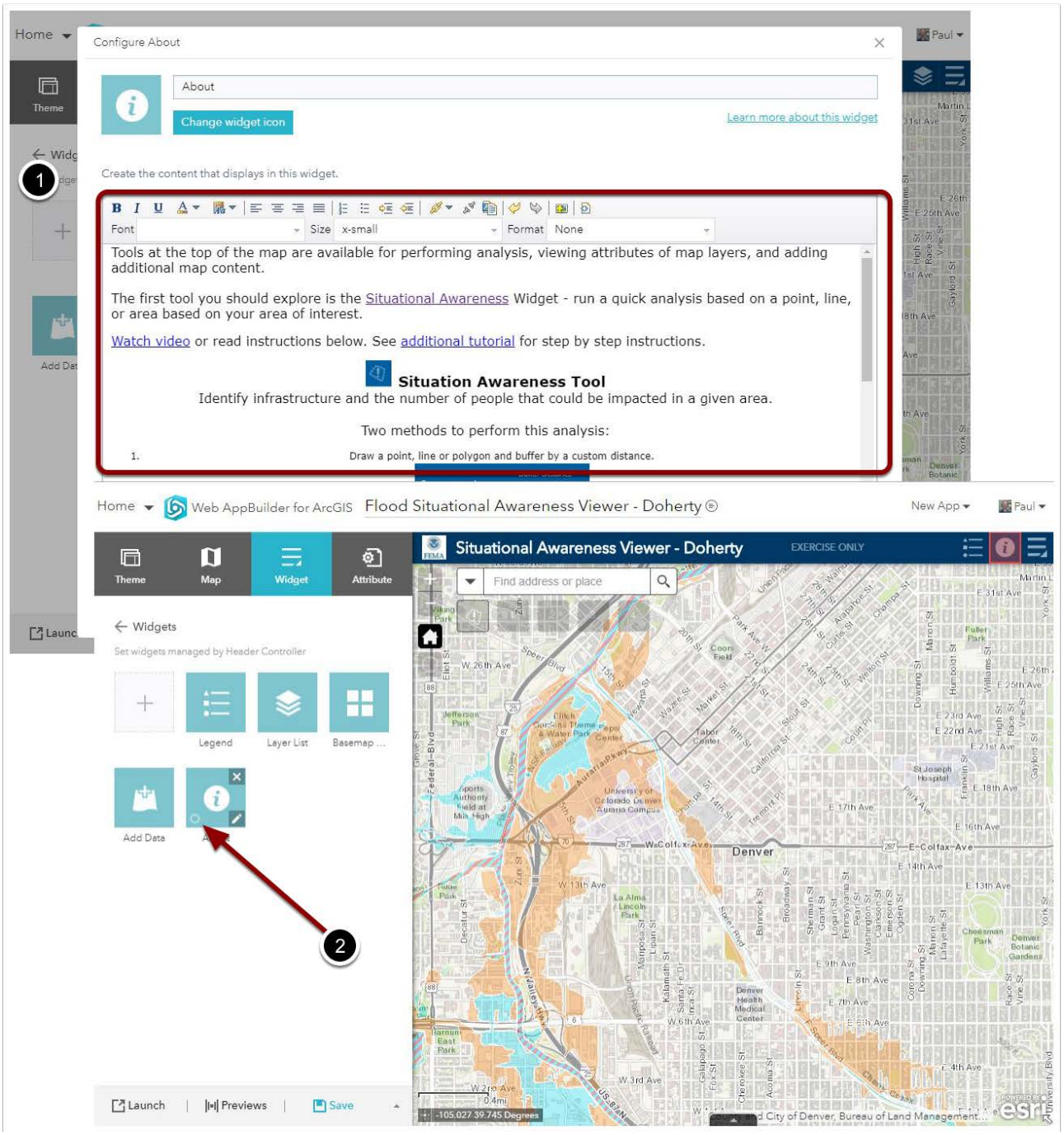
Zoom Slider - The Zoom Slider widget provides interactive zoom controls in the map display. **Tip:** SHIFT + Drag the mouse to zoom in, SHIFT + CTRL + Drag the mouse to zoom out.

Search - The Search widget enables end users to find locations or search features on the map. By default, the widget uses the geocoding service from your organization or portal and displays searchable layers configured in the map, if available. See Configure feature search for more information.

5.6 About Widget

The About Widget is a great way to introduce the capabilities of this app to new staff or those that will not be using this application in business-as-usual.

1. Here you can add links, images, or even a quick training video.
2. In the early use of this application you may want this page to be open by default by enabling "open this widget automatically".



3. Here is some sample text you can copy and paste into your About widget. You will want to take your own screenshots and use the image upload tool within the About widget interface.

Tools at the top of the map are available for performing analysis, viewing attributes of map layers, and adding additional map content. The first tool you should explore is the Situational Awareness Widget - run a quick analysis based on a point, line, or area based on your area of interest.

Watch video or read instructions below. See additional tutorial for step by step instructions.

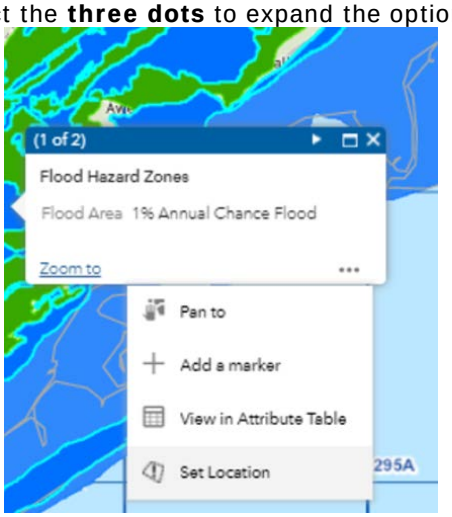
Situation Awareness Tool

Identify infrastructure and the number of people that could be impacted in a given area.

Two methods to perform this analysis:

1. Draw a point, line or polygon and buffer by a custom distance.

2. Select a map layer. Select the **three dots** to expand the options. Select 'Set Location'.



3. **Create a Report** - To export the results from the Situation Awareness Tool, select the print icon.

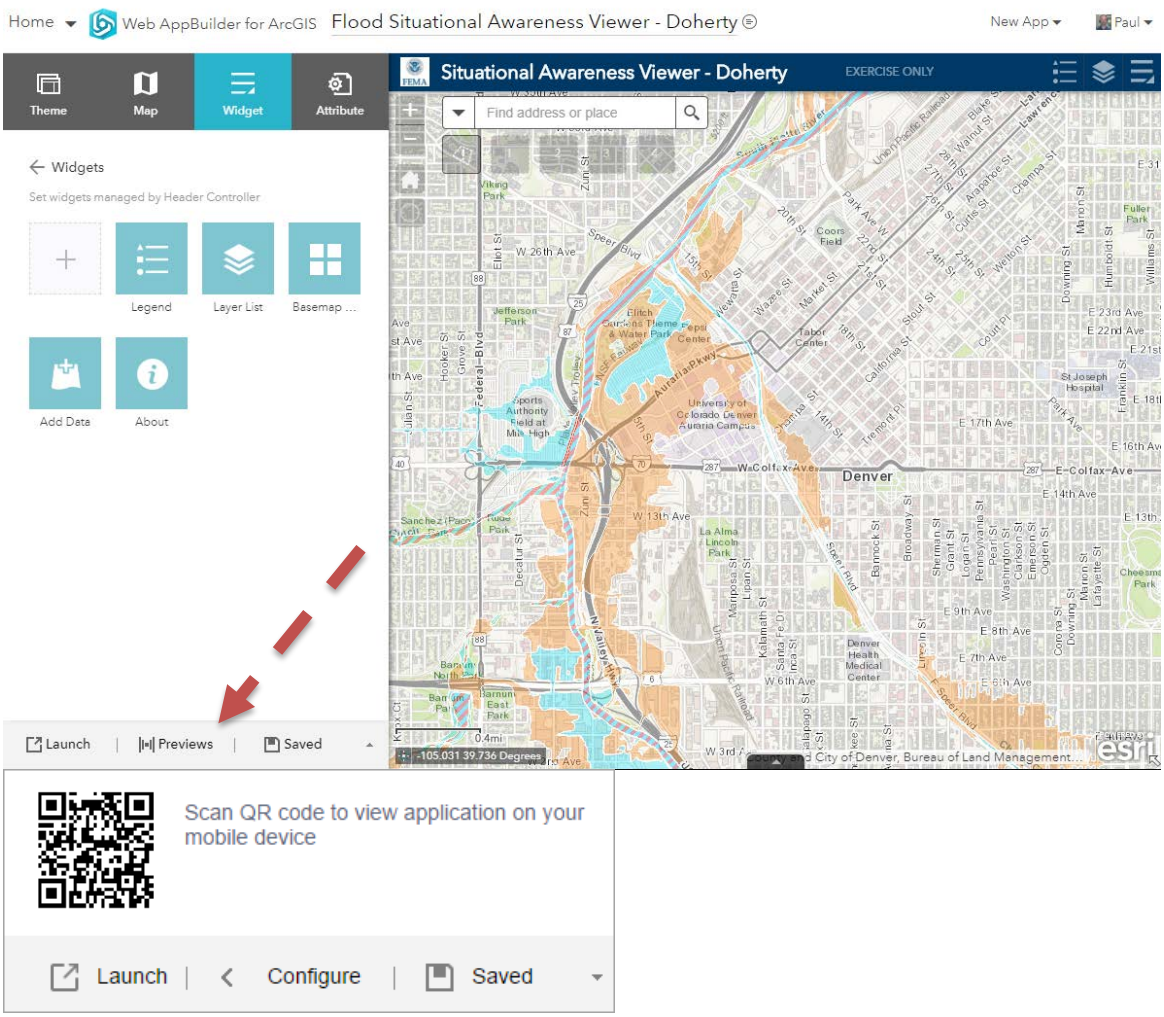
Additional Instructions
*Important tip: if on a PC, hold the shift key and draw a box with your mouse to zoom to an area of interest.

Tools
Basemap - change the basemap to imagery or other thematic maps.
Layer List - turn layers on/off and find out more about the layer.
Legend - displays labels and symbols for layers in the map.
Share - share the map with others based on the extent of the map or individual features.
Search Widget - Search for an address, coordinate, or placename on the map - can be configured to search layers.

6 Preview

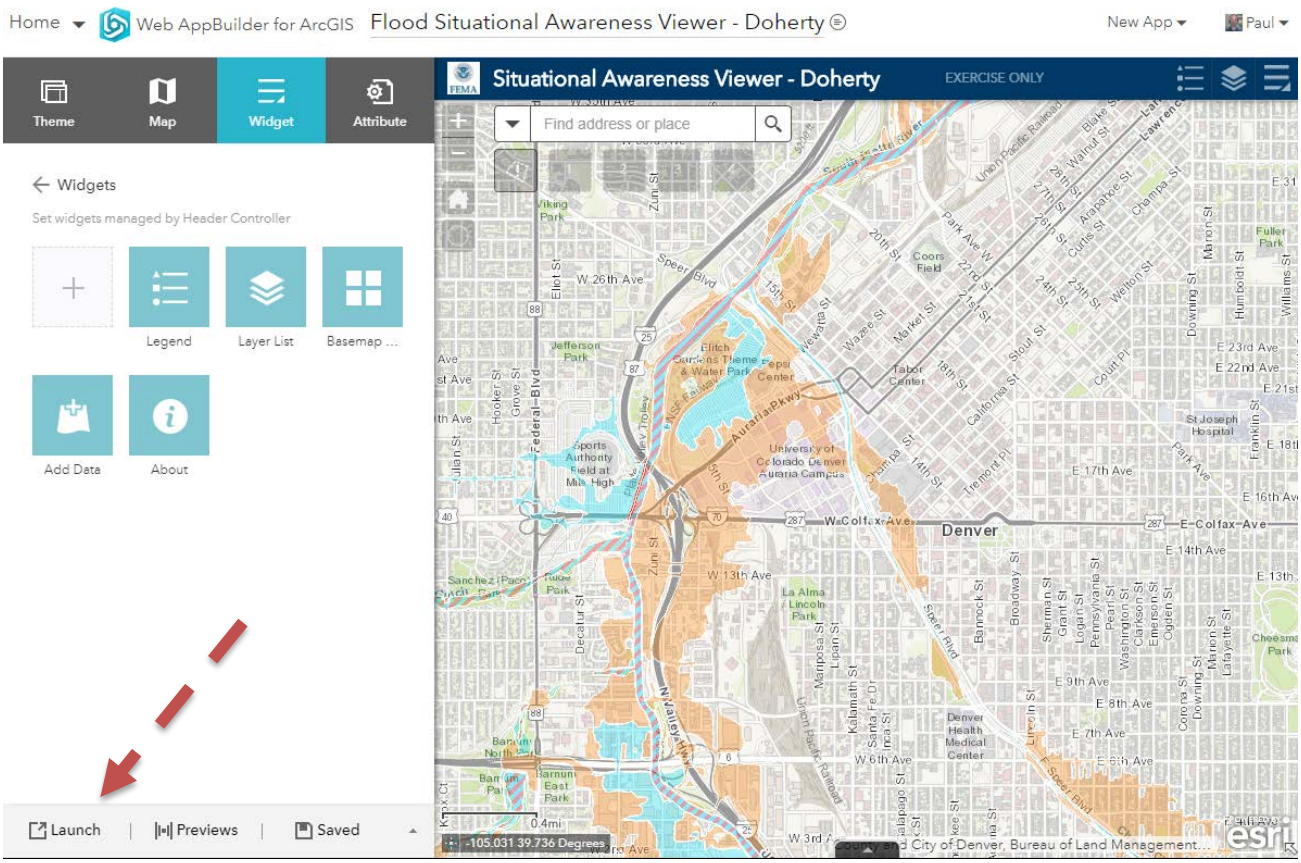
The Previews button allows you to interactively preview the app in a simulated device browser. You can interact with the application as if it was a live app on various simulated platforms.

Further, you can scan a QR code to view the app on your mobile device. Note: The QR shown below will not work for you! Use the one show under the Preview for your app.



7 Launch!

If you are happy with your application, click Launch.



Bonus Tips and Tricks

Switching between viewer and builder modes

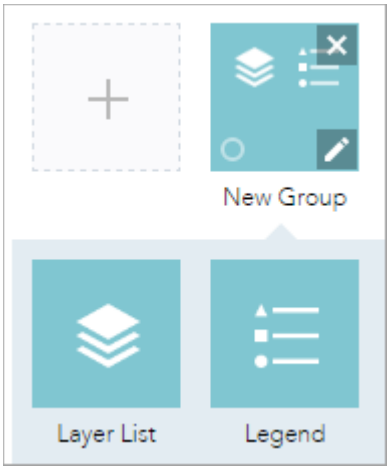
To open the configuration from any Web App Viewer, change the URL as shown below. This is a shortcut that will save you valuable time when a quick fix is needed.

http://napsg.maps.arcgis.com/apps/webapp**viewer**/index.html?id=....

http://napsg.maps.arcgis.com/apps/webapp**builder**/index.html?id=

Grouping Widgets

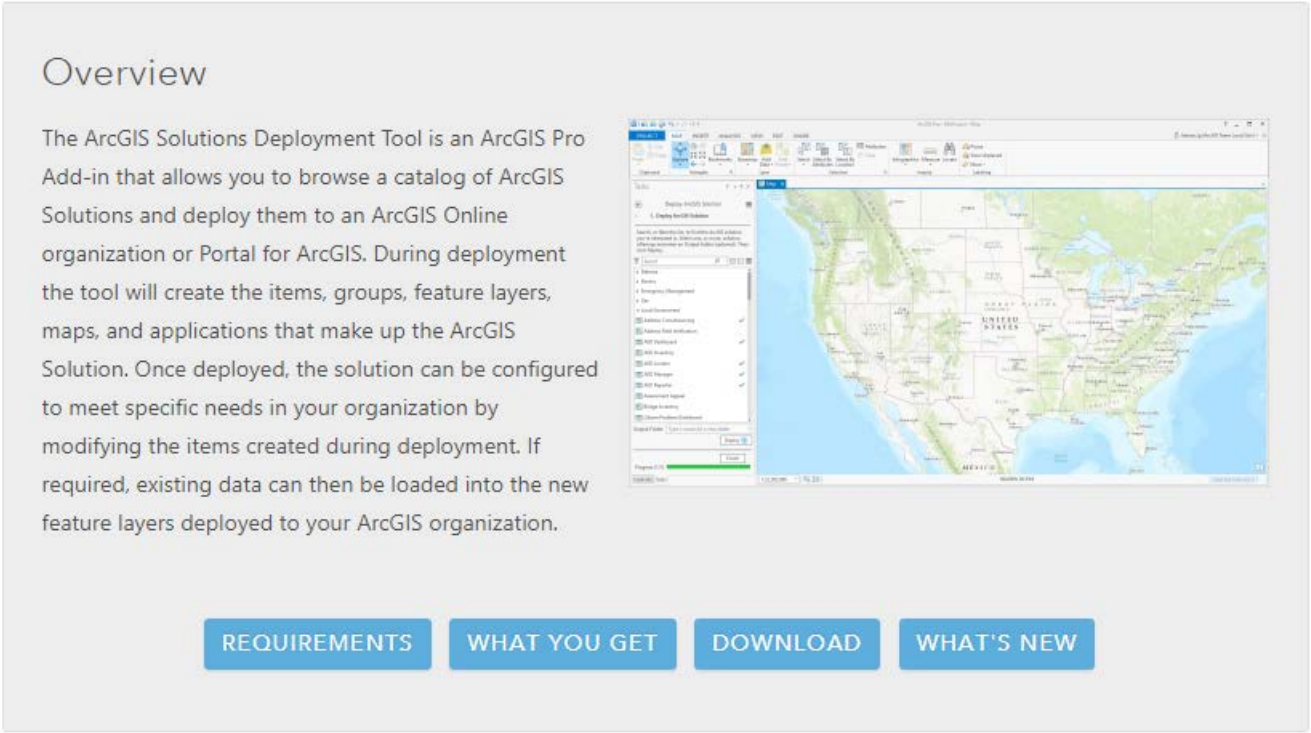
You can also group in-panel widgets by dragging one or more widgets into another widget. The grouped widget shows as a folder icon on the controller widget. To ungroup the widget, drag each widget out of the group. I like to split up my incident data and base data into two layers lists, then grouping them.



USNG

The Grid Overlay widget allows you to quickly render a United States Military Grid Reference System (MGRS / USNG) grid using client-side resources in a web app. Find out more: http://doc.arcgis.com/en/web-appbuilder/create-apps/widget-grid-overlay.htm

ArcGIS Solutions Deployment Tools

The ArcGIS Solutions Deployment Tool is an ArcGIS Pro Add-in that allows you to browse a catalog of ArcGIS Solutions and deploy them to an ArcGIS Online organization or Portal for ArcGIS. During deployment the tool will create the items, groups, feature layers, maps, and applications that make up the ArcGIS Solution. Once deployed, the solution can be configured to meet specific needs in your organization by modifying the items created during deployment. If required, existing data can then be loaded into the new feature layers deployed to your ArcGIS organization.

https://solutions.arcgis.com/shared/help/deployment-tool/