

# Geo-enabled Plans

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***Purpose:** This Tutorial is designed to help GIS Staff produce Geo-Enabled Operational Plans. We will use a Flood Preparedness example from FEMA Region 8 as our general area of interest but you will be able to localize this tutorial for your area. This Story Map will provide the audience with a high-level understanding of where hazards, vulnerabilities, and infrastructure exist.*

# Table of Contents

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<b><i>Geo-enabled Plans</i></b> .....	<b><i>1</i></b>
1. Open Web Map and Save As Your Own .....	3
1.1 Save The Web Map .....	4
2. Localize the Web Map .....	4
3. Share as a Story Map Series .....	5
3.1 Choose a Story Map .....	6
4. Add Your First Tab .....	7
4.1 Add Tab .....	8
4.2 Side-Panel .....	11
5. Add a New Tab .....	12
5.1 Main Stage .....	12
5.2 Side Panel .....	13
5.3 Story Actions - Vulnerability .....	14
5.4 Story Actions - Lifelines .....	16
5.5 Current Conditions .....	16
5.6 Short-Term Forecast .....	17
5.7 Long-term Forecast .....	18
6. Settings .....	19
6.1 Layout Options .....	20
6.2 Map Options .....	21
6.3 Theme .....	22
6.4 Header .....	22
7. Edit Item Properties .....	23
7.1 My Content .....	25
7.2 Edit Thumbnail .....	26
7.3 Description .....	27
7.4 Terms of Use .....	27
7.5 Tags and Attribution .....	28
8. My Stories .....	28
9. Refinement .....	29

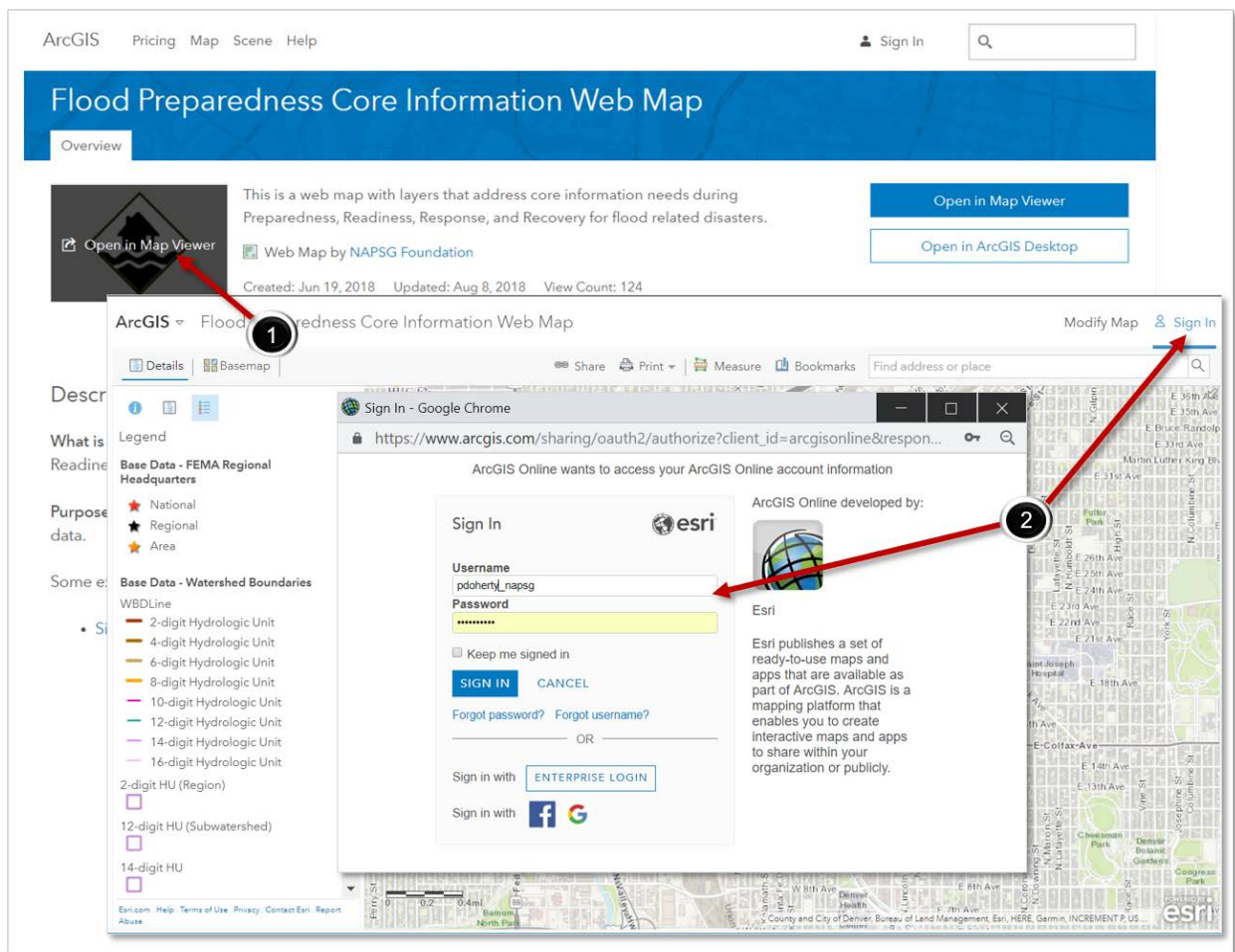
# 1. Open Web Map and Save As Your Own

Please access the web map template found here:

<https://www.arcgis.com/home/item.html?id=3790b1270f9e4f8ea6ffea92afe7bbfc>

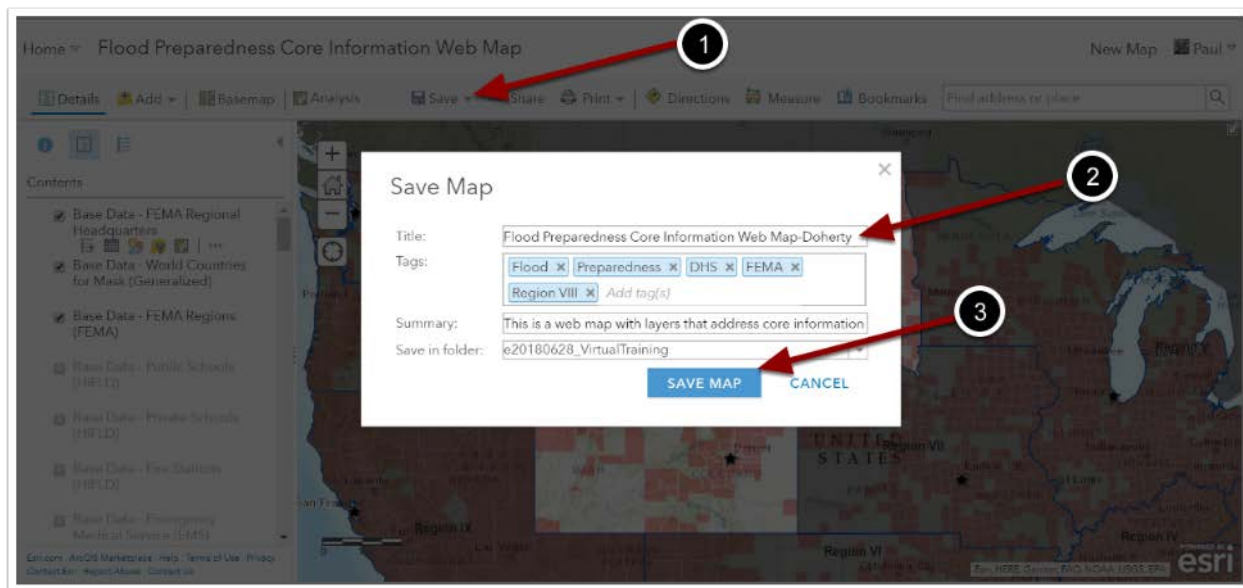
1. Open the web map by clicking on the Thumbnail or "Open in Map Viewer".
2. Sign-in using your organization's ArcGIS online account or a training login shared with you from NAPSG Foundation.

**Best Practice:** You may want to create a Folder in My Content for this project since we will be producing more than one item. For example: e20180628\_VirtualTraining. See this documentation for more detailed instructions: [Create a folder.](#)



## 1.1 Save The Web Map

1. You should now be able to Save the Web Map as your own using "Save As".
2. Please change the Title to include your name or Region, Tags, and Summary to describe your item.
3. Click Save Map.



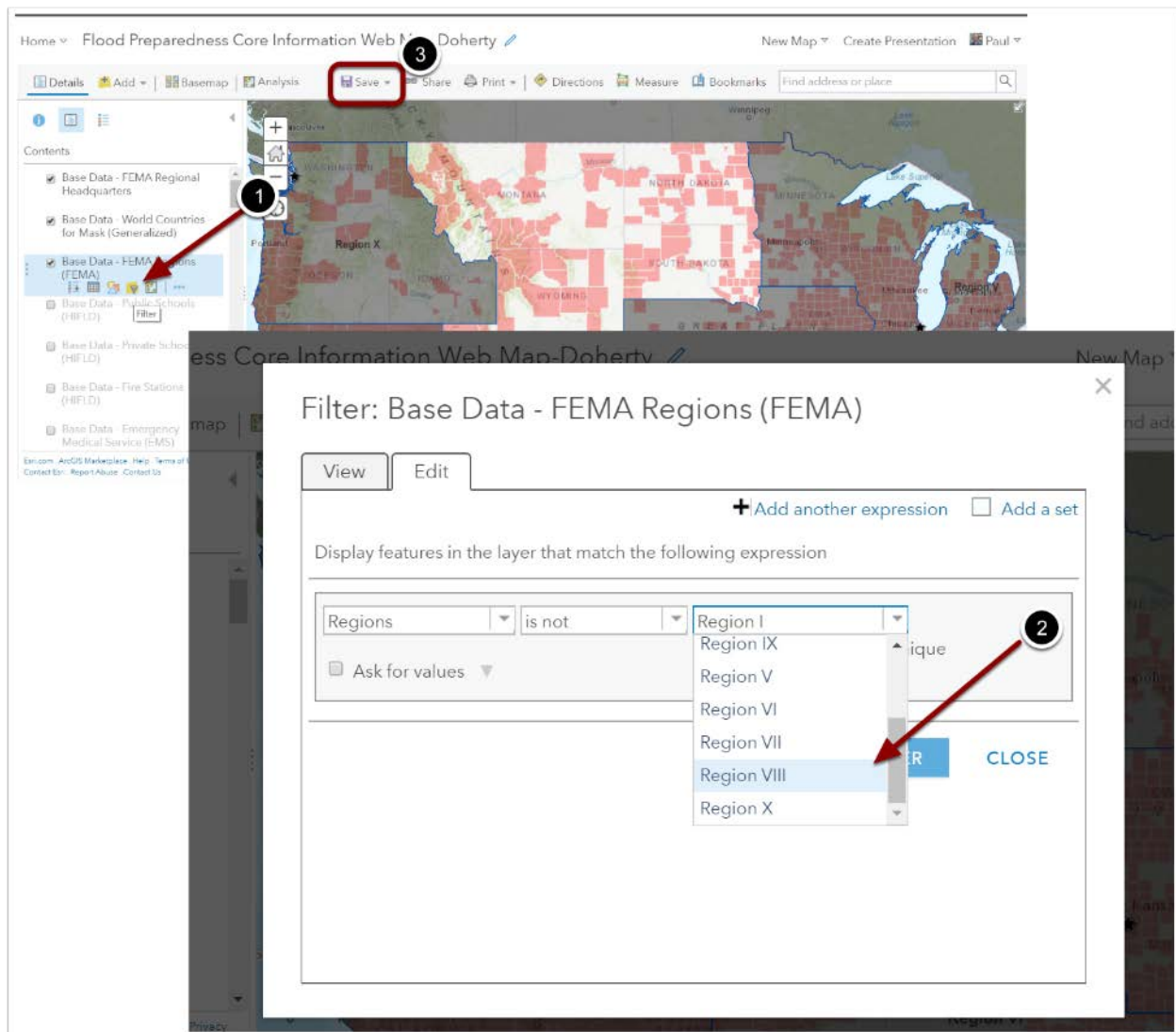
## 2. Localize the Web Map

In this step you will make this web map more specific to your Region or area of interest by creating a mask. You can use a State or County layer to complete this task if more appropriate.

1. Ensure the Content panel is selected in the map Table of Contents. Hover over the Base Data - FEMA Regions (FEMA) layer and Select Filter.
2. Ensure you are viewing the 'Edit' tab of the filter expression dialog.
3. Replace the Unique Value with your Region and Apply Filter. **IMPORTANT:** For your Story Map to work well, you may want to zoom into an urban area that your audience is familiar with and so that the map is not too cluttered when we turn on Lifeline / Critical Infrastructure points. You also may want to consider changing the basemap to thematic dark or light gray to help operations layers stand out.

#### 4. Save your Web Map.

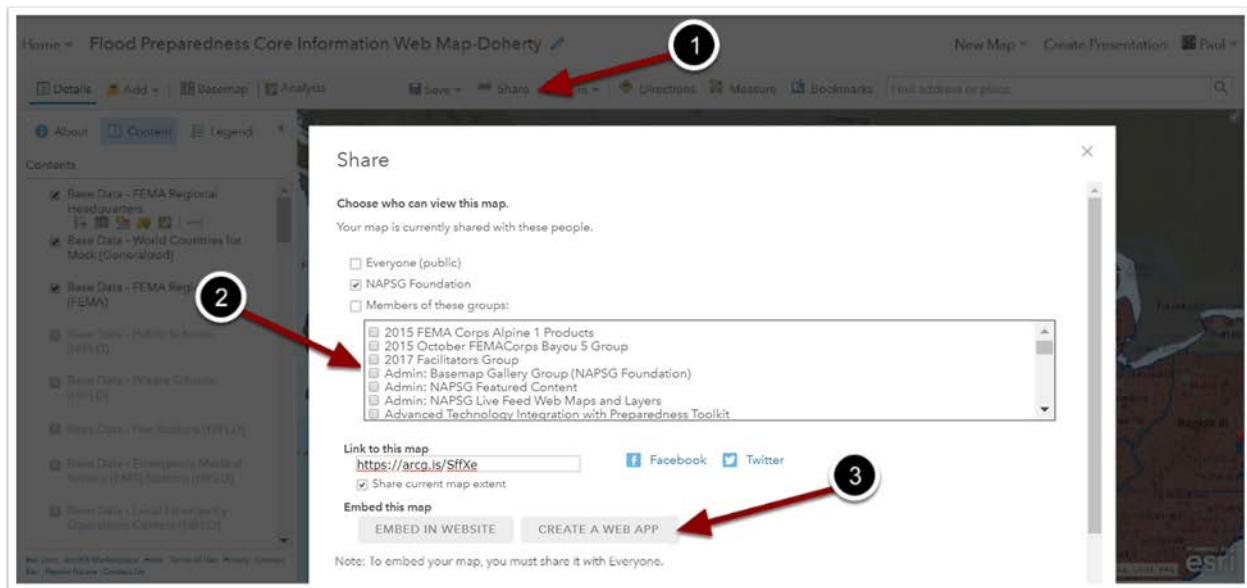
**Best Practice:** Now is a good time to decide which layers you want to have turned on by default as changing this later will override some of the settings in our Story Map. Also, you may want to supplement this map with data specific to your Region and swap out HIFLD Open Data with local datasets that may be more appropriate.



### 3. Share as a Story Map Series

1. Click Share.

2. Decide on Sharing Permission (Just to your organization until you are ready to distribute more widely). If you are participating in a Training Event, you can search for the event folder and share with that Group.
3. Click the CREATE A WEB APP button.

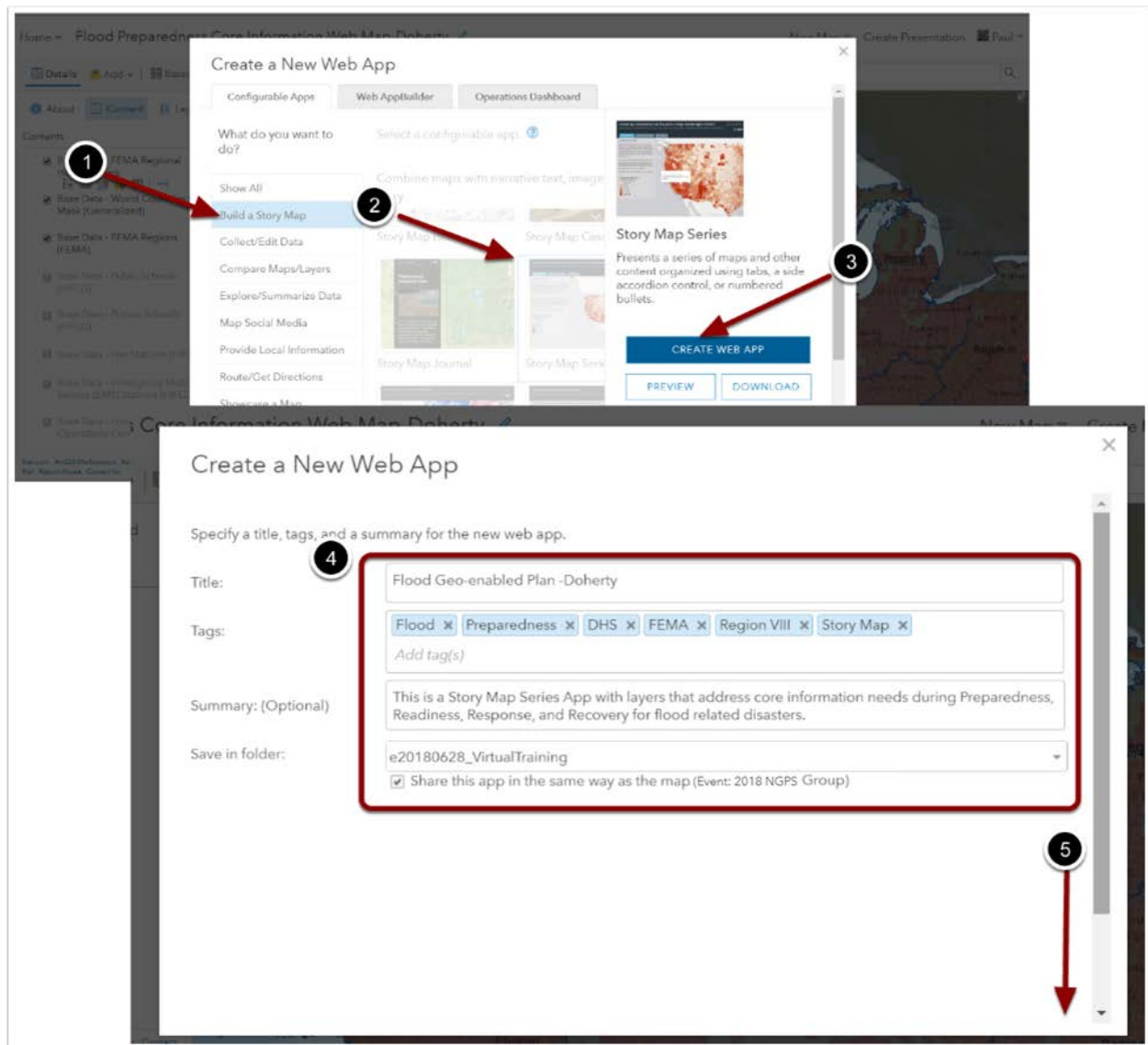


### 3.1 Choose a Story Map

Choosing a Story Map is not always easy! For this example today we will use the Story Map Series which is an app template that lets you present a series of maps via tabs, numbered bullets, or our expandable 'side accordion' control. In addition to maps, you can also include images, video and web content in your Story Map Series to tell your story and engage your audience.

1. Under the Configurable Apps tab, select Build a Story Map.
2. Then select Story Map Series.
3. CREATE WEB APP - this will launch the Create a New Web App window.
4. Please rename this with your last name or Region in the Title. You may want to add an additional tag and adjust the Summary to indicate it is a Story Map.
5. Scroll down and click DONE.

**Best Practice:** For future guidance on choosing a Story Map, please see this resource: [Using Create Story to Choose A Story Map](#)



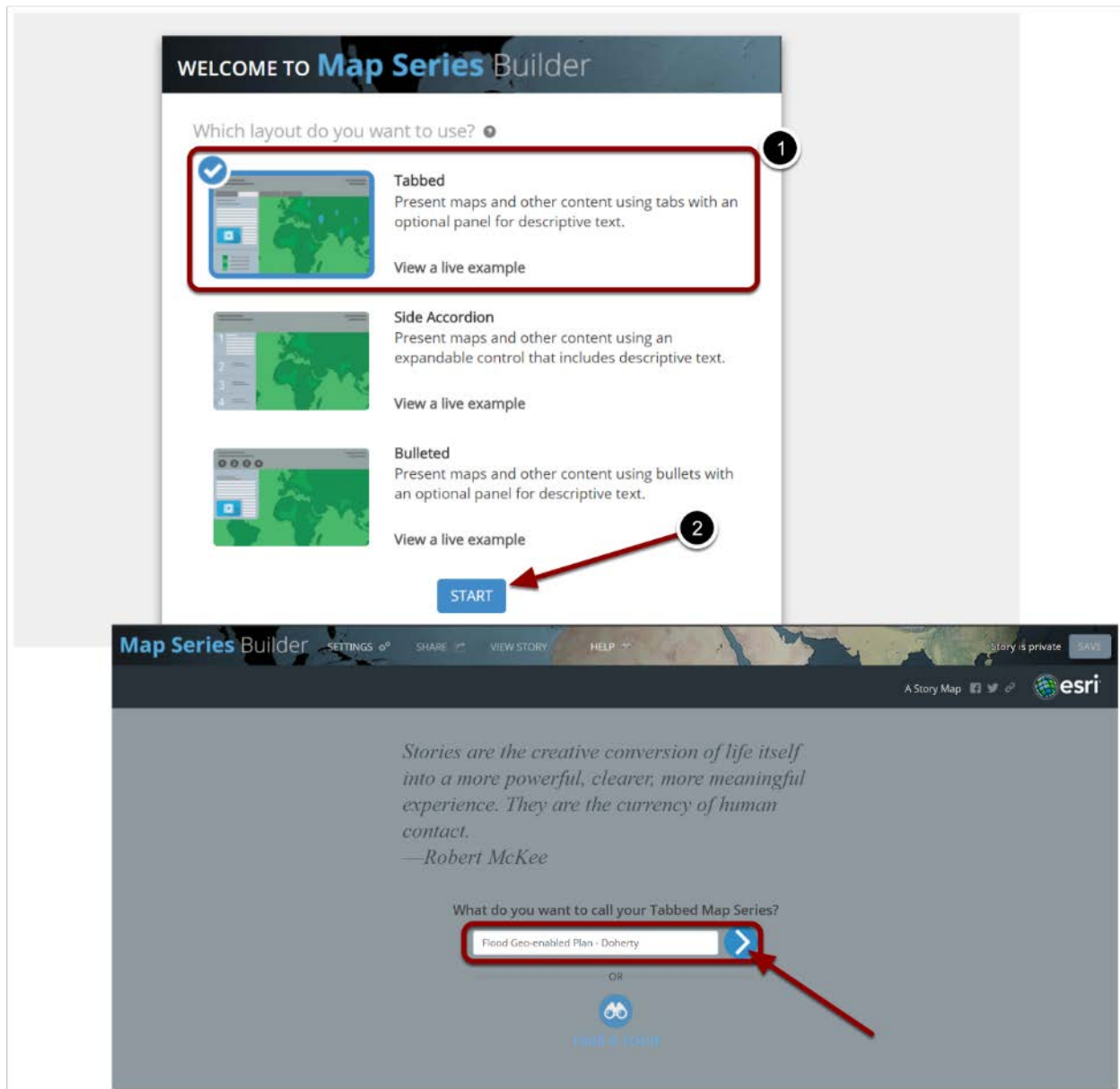
## 4. Add Your First Tab

The last step should have launched a new web page and Map Series Builder window.

1. Choose the Tabbed layout.
2. Press START.



3. On the next page - confirm or change your title, then click the arrow to continue.

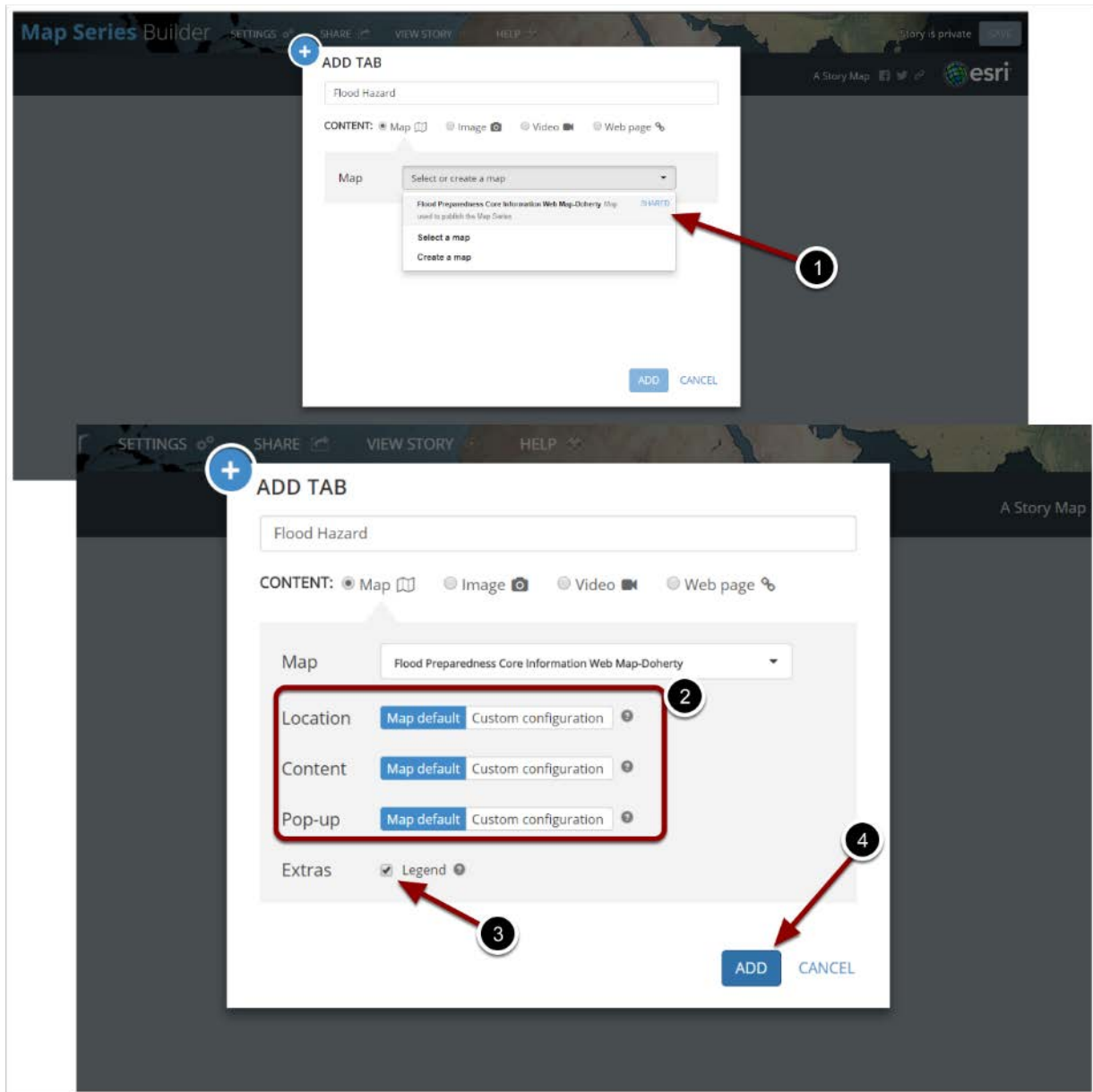


## 4.1 Add Tab

A dialog appears that lets you add the first tab into your Map Series. In this dialog, you are first prompted for the content you want this tab to show. Choose between a **Map**, **Image**, **Video** or **Web Page**. For example, the **Web Page** option lets you embed web content like another app into tab.



1. Enter a simple title for the tab (i.e. "Flood Hazard Map")
2. Next to Map - choose the web map you just created. This map will show up in the Main Stage.
3. For now, accept the default Location, Content, and Pop-up. This means this tab will inherit the default settings on your web map.
4. Click the checkbox to turn on the Legend.
5. Click ADD.



## 4.2 Format Side Panel

The new tab appears in your Map Series, along with a panel into which you enter descriptive text about the map it contains. You can type or paste text directly into the built-in rich text editor. You can also embed graphics, images and videos in with the text.

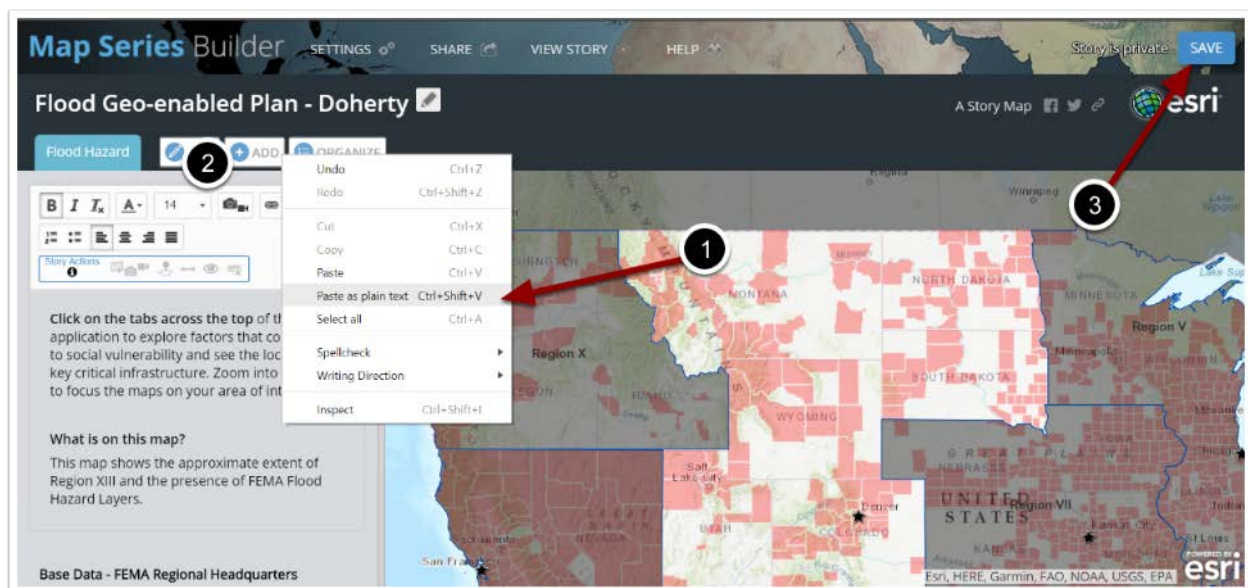
1. Copy the text below, then paste into the rich text editor (use paste as plain-text to remove formatting).

**Click on the tabs across the top** of this application to explore factors that contribute to social vulnerability and see the locations of key critical infrastructure. Zoom into an area to focus the maps on your area of interest.

**What is on this map?** This map shows the approximate extent of Region XIII and the presence of FEMA Flood Hazard Layers.

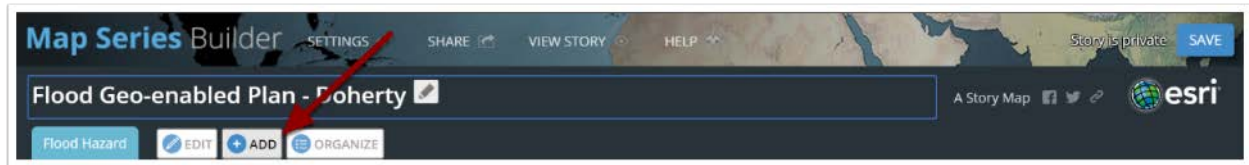
2. Format text as desired; size 14 font is generally large enough for reading.

3. At the top right of the screen, click SAVE.



## 5. Add a New Tab

To begin this next step, click on the ADD button.

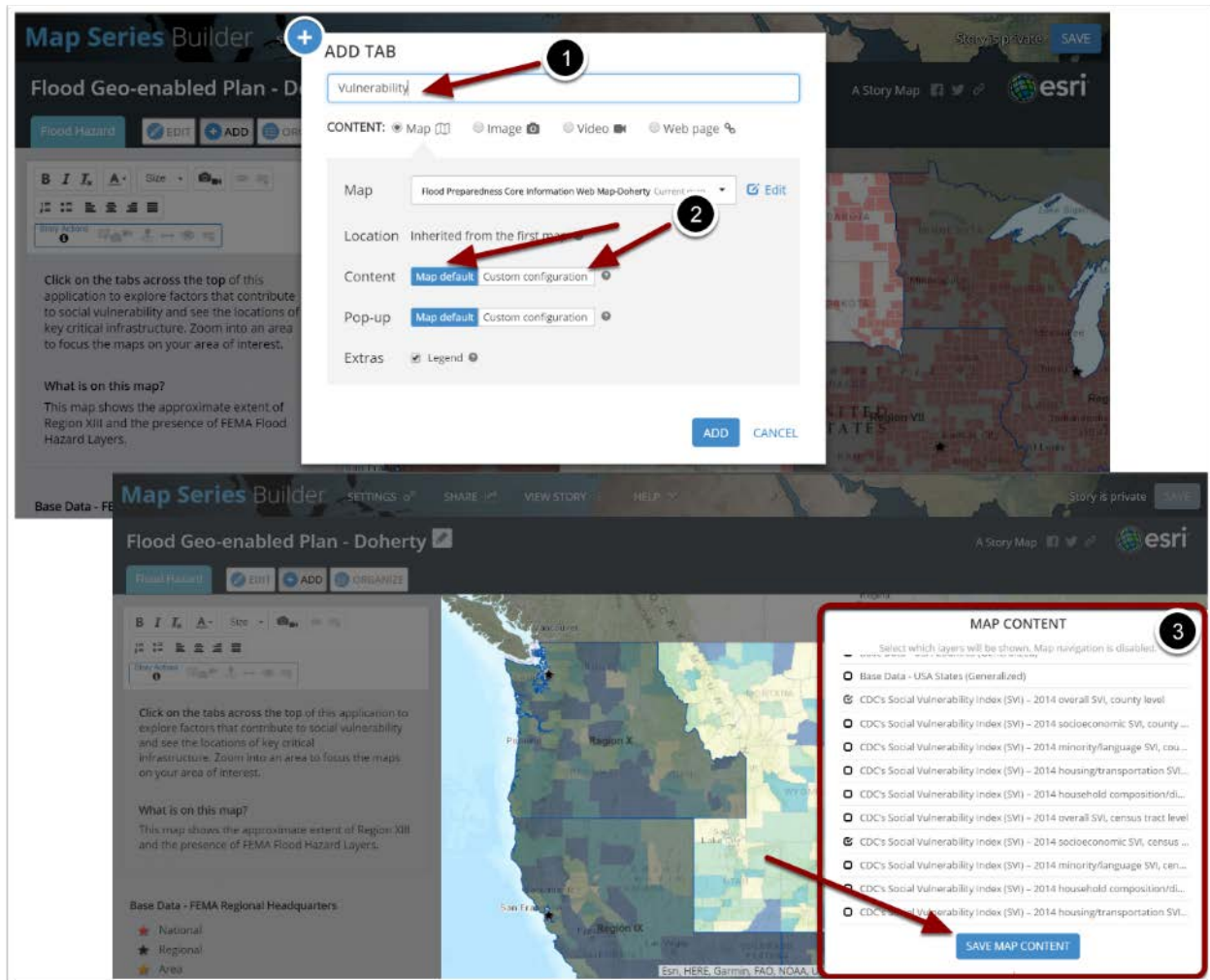


### 5.1 Main Stage

We have so far accepted the default setting for the location of this new map - it will be inherited from the first map in the series. So, we cannot change the location of this map from here. We can choose to turn layers on and off and display a particular feature's pop-up

1. Change the Title to 'Vulnerability'.
2. Next to Content, click Custom Configuration.
3. Turn off the NFHL Flood Hazard Layer and turn on Overall SVI for County and Census Tract.
4. SAVE MAP CONTENT.
5. Then click ADD on the next window (not shown).

Best Practice: Notice that in the web map we have already set layer transparency to around 50% and scale visibility so that we see Counties when we are zoomed out and Census Tracts as we zoom in. See [Set Visible Range](#) and [Change Transparency](#) for more information.



## 5.2 Side Panel

1. Copy and paste the following text into the side panel, select all and set the font size to 14.

The Social Vulnerability Index (SVI) uses U.S. Census data to determine the social vulnerability of every census tract. The SVI ranks each census tract on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes.

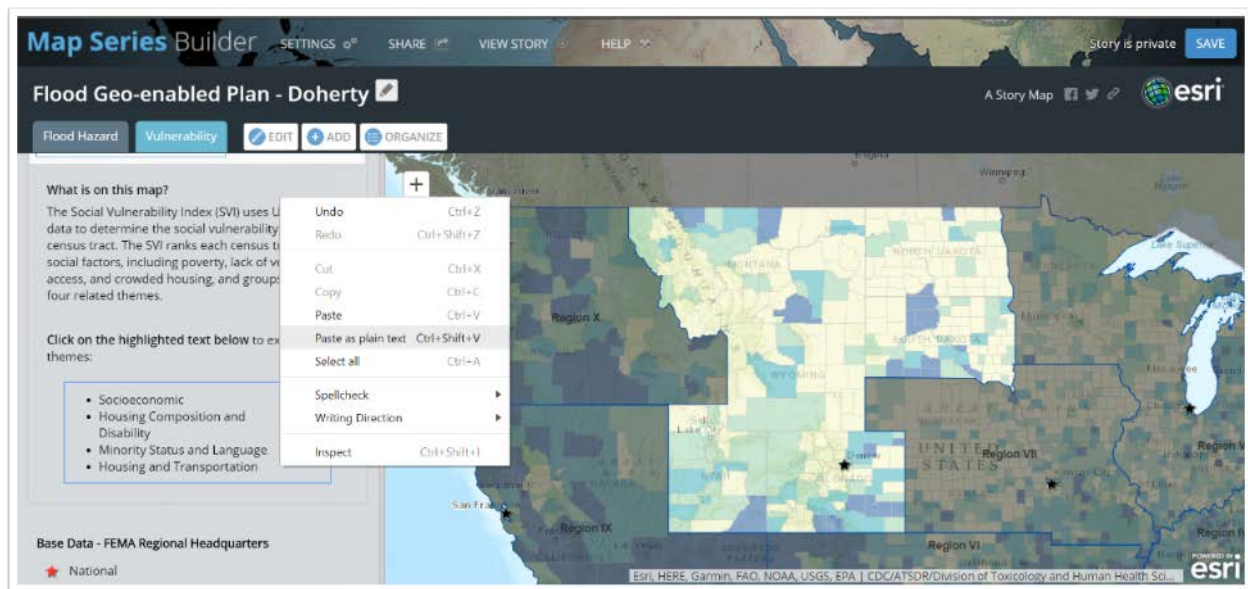
Click on the highlighted text below to explore these themes:

Socioeconomic

Household Composition and Disability

Minority Status and Language

Housing and Transportation



### 5.3 Story Actions - Vulnerability

*Story actions* can be configured via the side panel to interact with the main stage. Story actions can interact with a map on the main stage to zoom, toggle a layer, display a pop-up, or any combination of these. Actions can also display a new map, image, video, web page, or even open another application (or Story Map).

1. Highlight the text 'Socioeconomic'.
2. Then click on Change Main Stage Content (as pictured in screenshot below). This opens a CHANGE THE MAIN STAGE CONTENT window that is similar to before, except this will set the interaction for when someone clicks on the word you highlighted.
3. Keep Location set to Map default. Then Click on Content - Custom Configuration.
4. This time select only 2014 Socioeconomic SVI for County and Census. In general, we can keep the reference layer mask for our Region and Headquarters checked on for all tabs.
5. When you are click APPLY (not shown).



Repeat this procedure for the remaining themes (Household Composition, Minority Status and Language, Housing and Transportation).

The screenshot shows the 'Map Series Builder' interface for a 'Flood Geo-enabled Plan - Doherty'. The interface includes a sidebar on the left with a 'What is on this map?' section. A red arrow labeled '1' points to the 'Socioeconomic' theme under the 'Click on the highlighted text below to explore themes:' section. Another red arrow labeled '2' points to the 'EDIT' button in the top navigation bar. A third red arrow labeled '3' points to the 'Custom configuration' button in the 'Location' dropdown of the 'CHANGE THE MAIN STAGE CONTENT' dialog box. The dialog box also shows 'Custom configuration' for the 'Content' dropdown. Below the dialog box is the 'MAP CONTENT' section, which lists various layers. Red arrows point to the 'CDC's Social Vulnerability Index (SVI) - 2014 socioeconomic SVI, county level' and 'CDC's Social Vulnerability Index (SVI) - 2014 socioeconomic SVI, census tract level' items. The 'SAVE MAP CONTENT' button is at the bottom of the 'MAP CONTENT' section.

**Map Series Builder** - SETTINGS - SHARE - VIEW STORY - HELP - Story is private - SAVE

**Flood Geo-enabled Plan - Doherty** - A Story Map - esri

**What is on this map?** (Change the Main Stage content)

The Social Vulnerability Index (SVI) uses U.S. Census data to determine the social vulnerability of every census tract. The SVI ranks each census tract on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes.

Click on the highlighted text below to explore themes:

- Socioeconomic**
- Housing Composition and Disability
- Minority Status and Language
- Housing and Transportation

**CHANGE THE MAIN STAGE CONTENT**

MEDIA: Map Image Video Web page

Map: Flood Preparedness Core Information Web Map-Doherty Current map [Edit]

Location: Map default Custom configuration

Content: Map default Custom configuration

Pop-up: Map default Custom configuration

**MAP CONTENT**

Select which layers will be shown. Map navigation is disabled.

- ☐ Base Data - USA States (Generalized)
- ☐ CDC's Social Vulnerability Index (SVI) - 2014 overall SVI, county level
- ☒ CDC's Social Vulnerability Index (SVI) - 2014 socioeconomic SVI, county level
- ☐ CDC's Social Vulnerability Index (SVI) - 2014 minority/language SVI, county level
- ☐ CDC's Social Vulnerability Index (SVI) - 2014 housing/transportation SVI, county level
- ☐ CDC's Social Vulnerability Index (SVI) - 2014 household composition/disability SVI, county level
- ☐ CDC's Social Vulnerability Index (SVI) - 2014 overall SVI, census tract level
- ☒ CDC's Social Vulnerability Index (SVI) - 2014 socioeconomic SVI, census tract level
- ☐ CDC's Social Vulnerability Index (SVI) - 2014 minority/language SVI, census tract level
- ☐ CDC's Social Vulnerability Index (SVI) - 2014 household composition/disability SVI, census tract level
- ☐ CDC's Social Vulnerability Index (SVI) - 2014 housing/transportation SVI, census tract level

APPLY CANCEL

SAVE MAP CONTENT



## 5.4 Story Actions - Lifelines

Repeat the Story Actions Procedure for Additional Tabs.

Suggested text to copy and layers to enable:

### **What is on this map?**

When zoomed out this map will show overall critical infrastructure density. When you zoom in, you can see more detailed information by clicking on the highlighted text below to explore these Lifeline themes:

1. Communications [EOC, 911 Boundaries, and Cell Towers]
2. Power & Fuel [Power Plants, Electric Transmission, Electric Holding Company Areas]
3. Safety & Security [Fire Stations, EMS, Law Enforcement]
4. Health & Medical [Hospitals, Public Health Departments, VA Health Medical Centers, Nursing Homes, Urgent Care Facilities]
5. Transportation [National Bridge Inventory, Public Transit Stations, Public Transit Routes, USA Freeway System]
6. Food, Water, and Sheltering [National Shelter System Facilities]
7. Hazardous Waste [EPA Facilities, Solid Waste and Landfill Facilities, Wastewater Facilities]

These are static datasets that show where critical infrastructure is located, not indicative of current status.

## 5.5 Current Conditions

Suggested text to copy and layers to enable:

### **What is on this map?**

This map shows current conditions related to flood readiness and response including USGS Stream Gauge Status, NOAA Live Weather Observations, and NOAA Current Radar.

Layers to enabled by default:

- ☒ Live Feed - Near-Real-Time Surface In-Situ Observations (NOAA)
- ☒ Live Feed - All Stream Gauges (USGS)
- ☐ Live Feed - Short-Duration Hazards - Warnings (NWS)
- ☐ Live Feed - Short-Duration Watches (NWS)
- ☐ Live Feed - Long-Duration Hazards (NWS)
- ☒ Live Feed - Recent Radar (NWS)
- ☐ Live Feed - National Water Model (Hourly Anomaly Forecast)
- ☐ Live Feed - National Water Model (10 Day Anomaly Forecast)
- ☐ Live Feed - 72 Hour Precipitation Forecast (NOAA NDFD)
- ☐ Base Data - U.S. National Grid (USNG)

SAVE MAP CONTENT

## 5.6 Short-Term Forecast

Suggested text to copy and layers to enable:

### What is on this map?

This map shows long-term forecasts related to flood readiness and response including NWS Long-Duration Weather Watches & Warnings and National Water Model Anomaly Forecast (Long-Term), and the NOAA 72-Hour Precipitation forecast.

Layers to enabled by default:

- ☒ Live Feed - Short-Duration Hazards - Warnings (NWS)
- ☒ Live Feed - Short-Duration Watches (NWS)
- ☐ Live Feed - Long-Duration Hazards (NWS)
- ☐ Live Feed - Recent Radar (NWS)
- ☒ Live Feed - National Water Model (Hourly Anomaly Forecast)
- ☐ Live Feed - National Water Model (10 Day Anomaly Forecast)
- ☐ Live Feed - 72 Hour Precipitation Forecast (NOAA NDFD)
- ☐ Base Data - U.S. National Grid (USNG)

SAVE MAP CONTENT

## 5.7 Long-term Forecast

Suggested text to copy and layers to enable:

### What is on this map?

This map shows long-term forecasts related to flood readiness and response including NWS Long-Duration Weather Watches & Warnings and National Water Model Anomaly Forecast (Long-Term), and the NOAA 72-Hour Precipitation forecast.

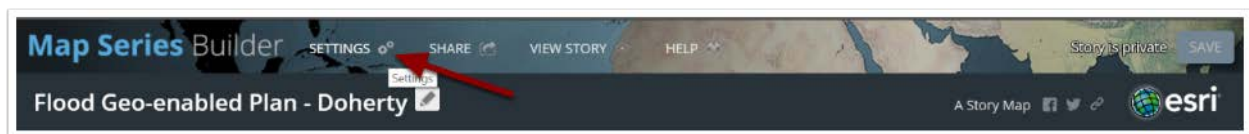
Layers to enabled by default:

- ☐ Live Feed - All Stream Gauges (USGS)
- ☐ Live Feed - Short-Duration Hazards - Warnings (NWS)
- ☐ Live Feed - Short-Duration Watches (NWS)
- ☒ Live Feed - Long-Duration Hazards (NWS)
- ☐ Live Feed - Recent Radar (NWS)
- ☐ Live Feed - National Water Model (Hourly Anomaly Forecast)
- ☒ Live Feed - National Water Model (10 Day Anomaly Forecast)
- ☒ Live Feed - 72 Hour Precipitation Forecast (NOAA NDFD)
- ☐ Base Data - U.S. National Grid (USNG)

SAVE MAP CONTENT

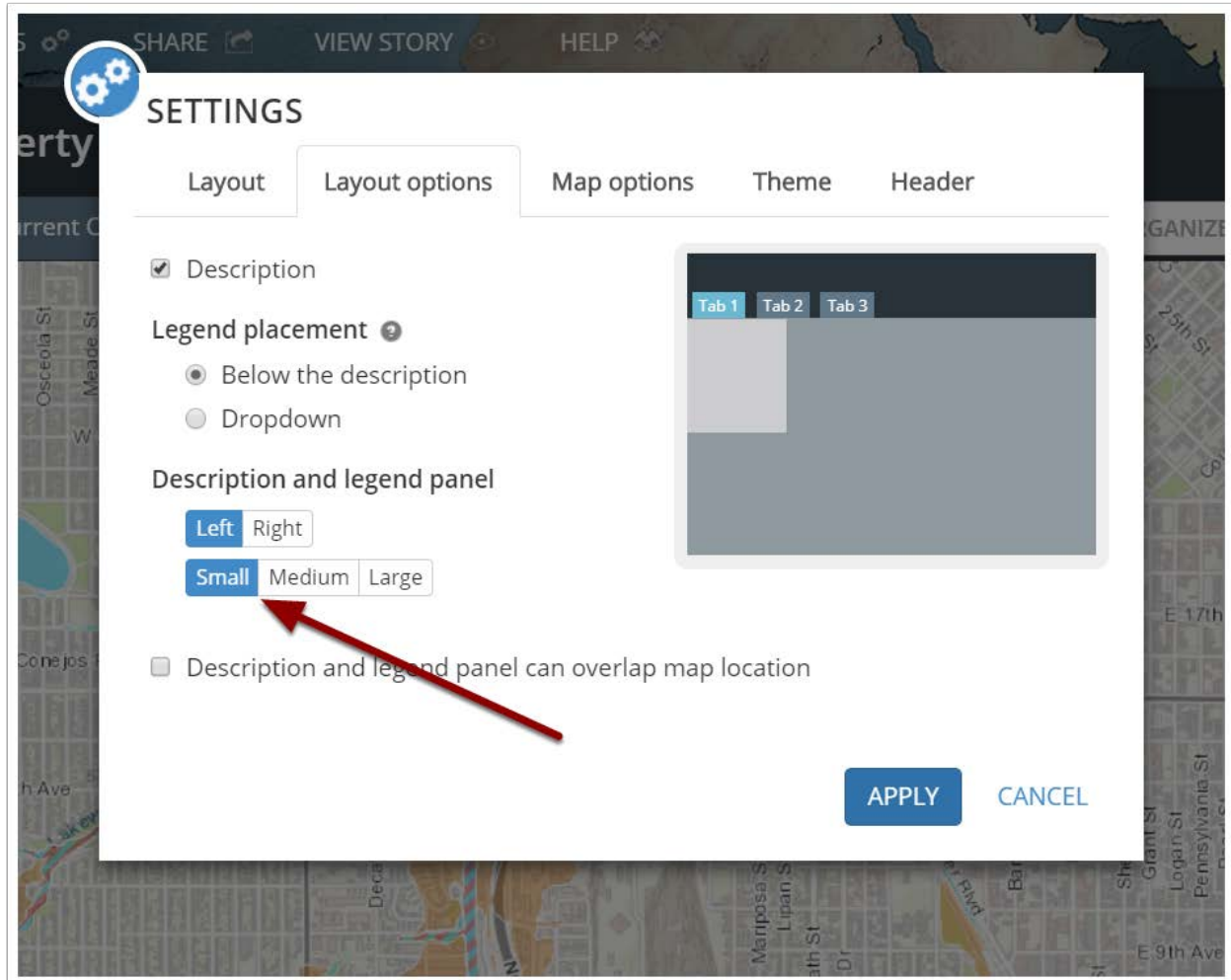
## 6. Settings

We are going to adjust some default settings. Click on the SETTINGS button at the top of the page.



## 6.1 Layout Options

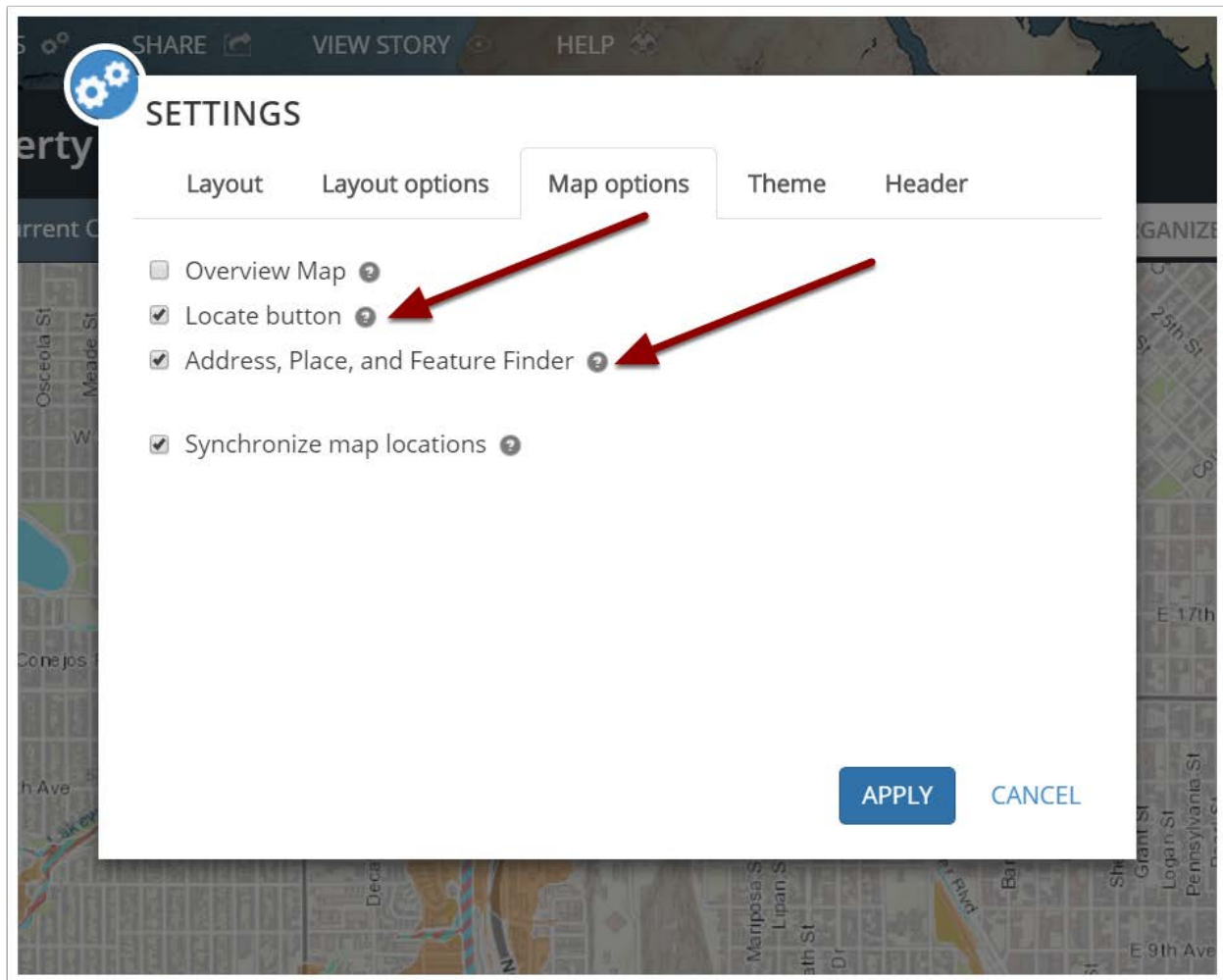
On the Layout Options tab, consider setting the Description to Small if you think your audience will be using this Story Map on smaller laptops and tablets.



## 6.2 Map Options

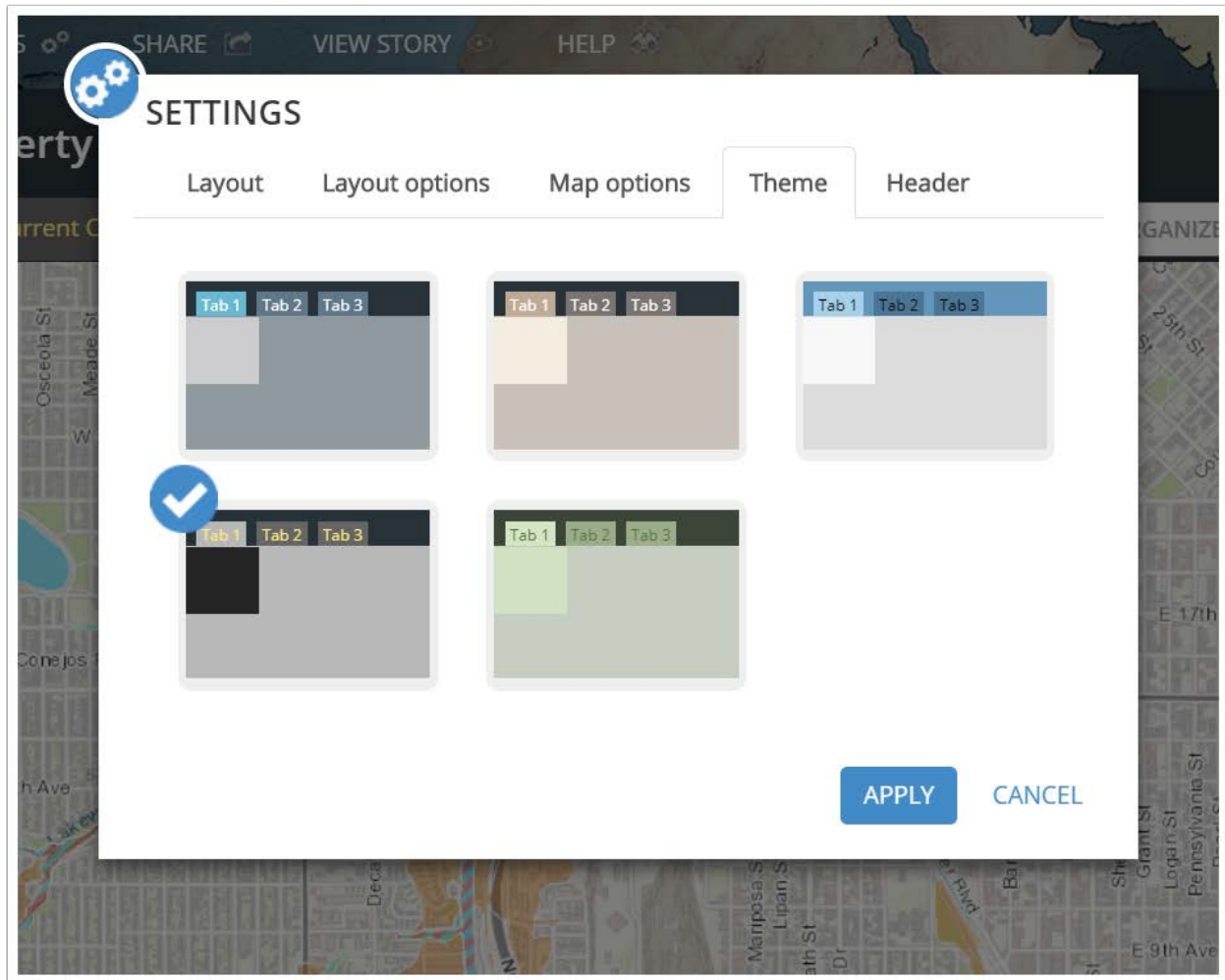
On the Map Options tab, consider enabling the Locate and Address Search capabilities.

Synchronize map locations is optional but can be a helpful interaction for showing the same geographic extent across tabs in the map.



## 6.3 Theme

You can select one of the optional Themes as shown. Some organizations also have a custom theme that matches their branding guidelines. See [Shared Theme](#) for more information (Only ArcGIS Online Administrators can set this up).



## 6.4 Header

Customize the logo that appears in your header in the **Header** tab. Using your own logo is important because it adds authority to your story and shows people who created it. Your organization's logo and color scheme may already be reflected in your story if they have been set as defaults by your ArcGIS account administrator (this option is only available if you are using an ArcGIS subscription account). Be sure to specify a URL that your readers



will be taken to when they click your logo, so they can find out more about your organization.

You can also customize the Tagline and have it link to another website or web mapping application.

The screenshot shows the 'SETTINGS' dialog box with the 'Header' tab selected. The dialog is overlaid on a map background. At the top, there are links for 'SHARE', 'VIEW STORY', and 'HELP'. The 'Header' tab contains the following options:

- Layout options:** Radio buttons for 'Esri logo', 'My logo' (selected), and 'No logo'.
- Image:** A preview of the header image on the left. To the right are buttons for 'Image:' (upload and link icons), 'Upload a logo', and an information icon.
- Link:** A text field containing the URL 'https://napsg.maps.arcgis.com/home/index.html'.
- Tagline:** A text field containing 'A Story Map'.
- Link:** A text field containing 'https://storymaps.arcgis.com'.
- Checkboxes:** 'Facebook', 'Twitter', and 'Share' are all checked.
- Use compact header (no subtitle):** This checkbox is checked.

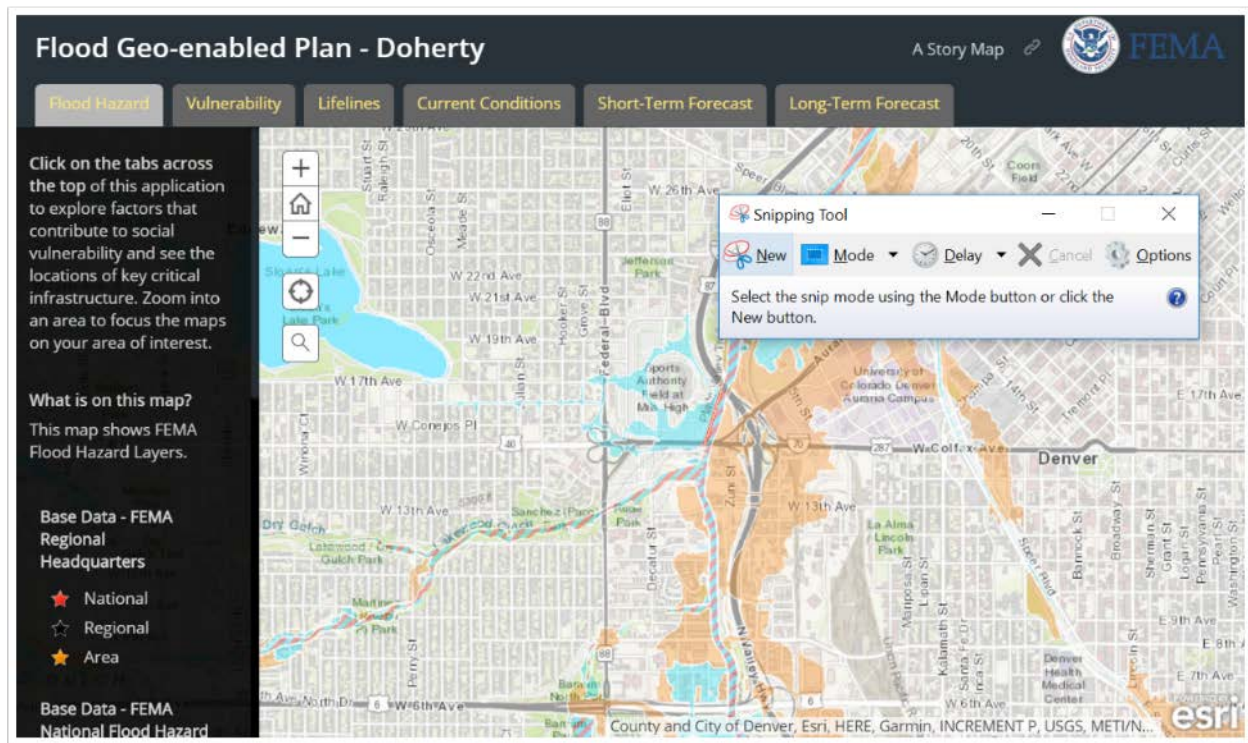
At the bottom right of the dialog are 'APPLY' and 'CANCEL' buttons.

## 7. Edit Item Properties

Take a screenshot with of your application (you may want to x out the No issues detected, Story not shared, and Edit buttons) with the Windows Snipping Tool or similar app.

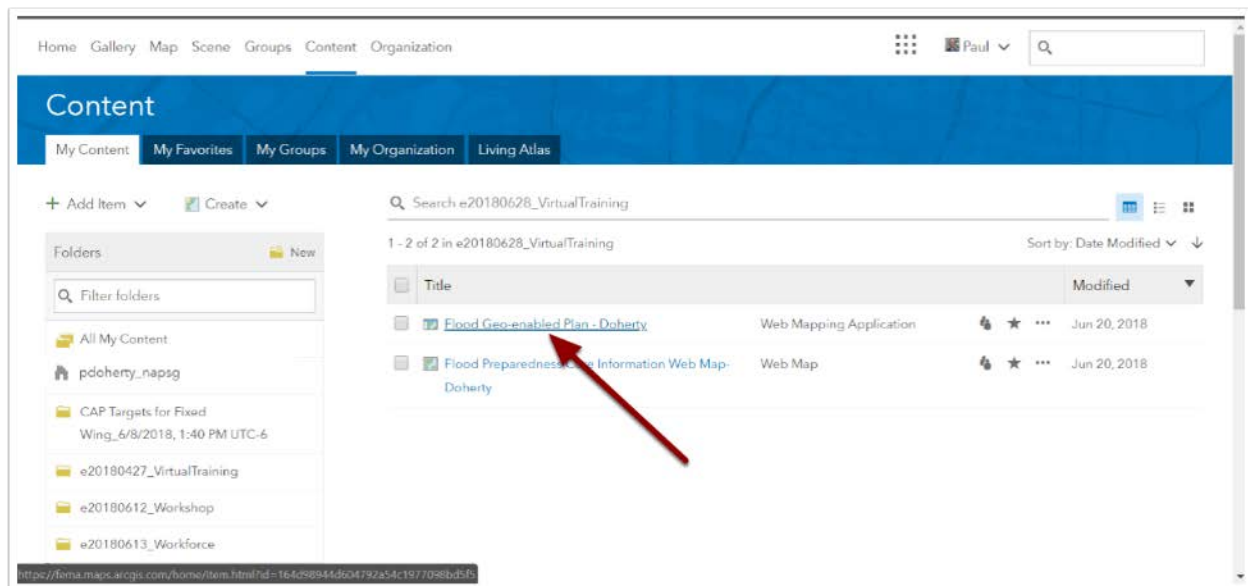
It is important that the thumbnail is not too small and the dimensions are proportional to an ArcGIS Online thumbnail. PNG generally provides the best results. I create templates using the exact 4:3 ratio of 600 x 399 px, or use the largest size currently used in the ArcGIS

online ecosystem which is 286 x 190 px—the standard size used in the Story Maps and Living Atlas galleries.



## 7.1 My Content

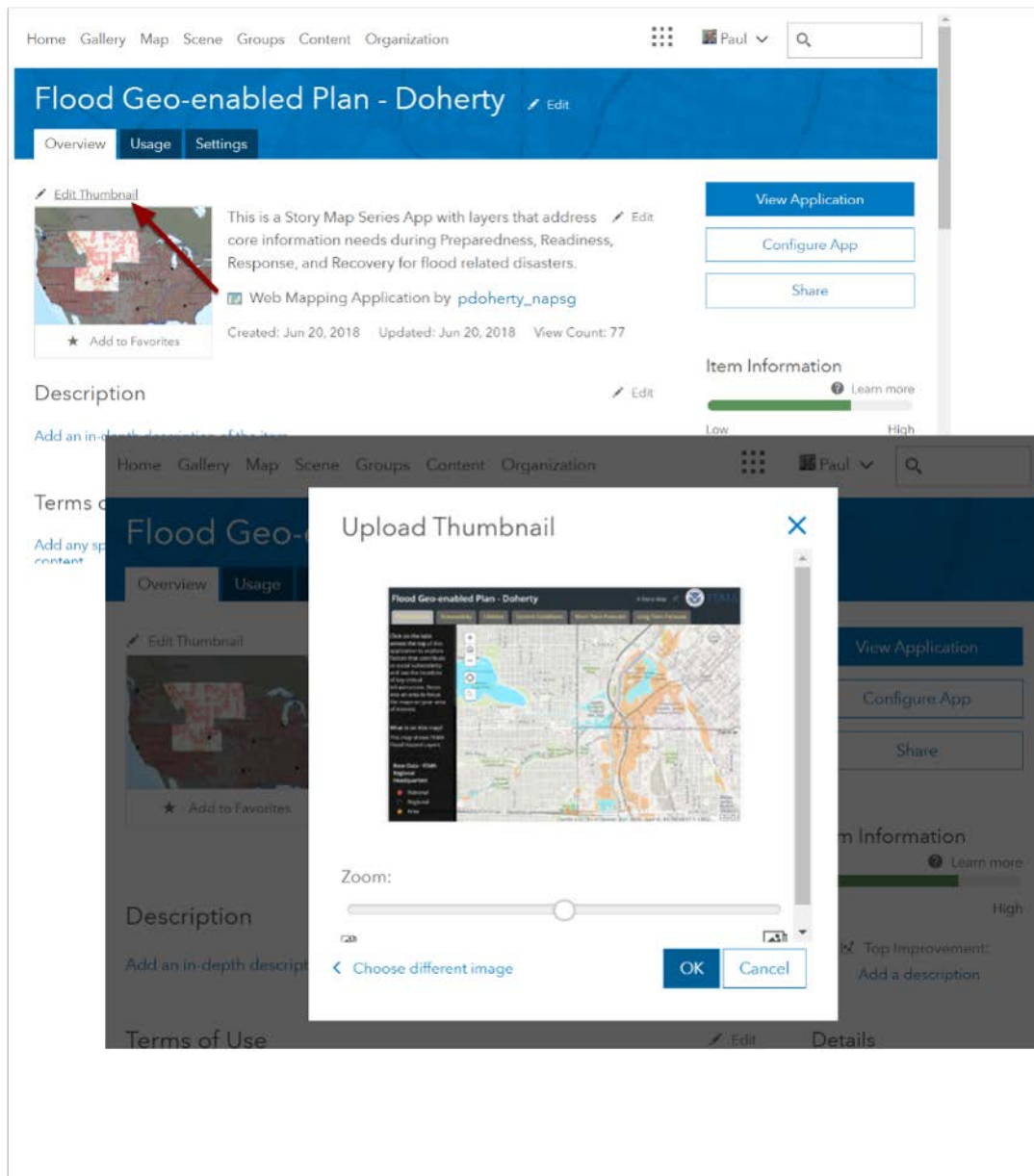
Navigate to My Content and access the Item Details Page for this new application.



## 7.2 Edit Thumbnail

First impressions are important! In this case we will use a thumbnail that provides an indication of the functionality or tools within the application. This take a few seconds but helps the end user better identify with the item.

Best Practice: Always create a thumbnail for information products you plan to share in Groups or Galleries. For more ideas see Put Your Best Thumbnail Forward



The Description is a good opportunity to provide useful metadata. At a minimum it should include the Purpose, Audience, Data Sources, and a Point of Contact.

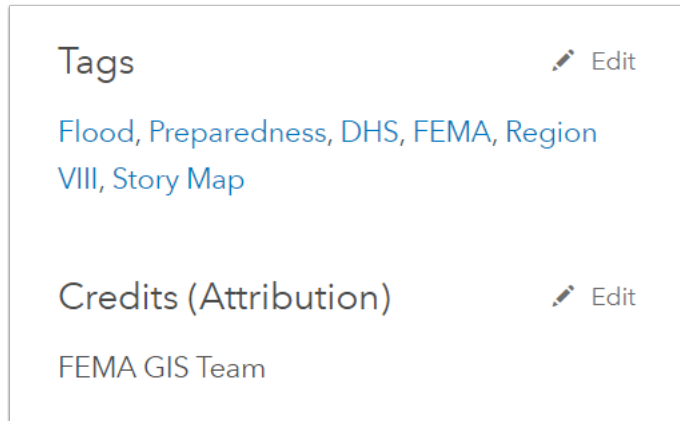


State any specific terms of use related to this application (Public, FOUO, Creative Commons, EXERCISE ONLY, etc.)



## 7.5 Tags and Attribution

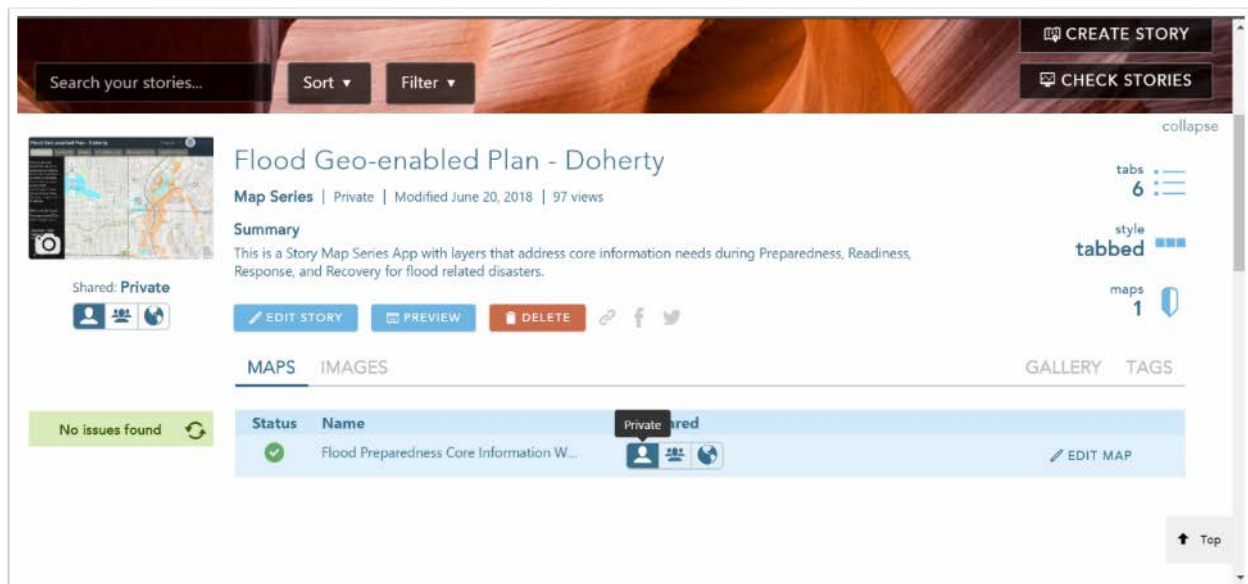
This is often overlooked, but important! Tags can be setup as incident specific (e.g. Hurricane Maria) or for specific purposes (e.g. Preparedness).



## 8. My Stories

*My Stories* lets you administer and manage the story maps you have created using the story map applications. The My Stories website can be accessed <https://storymaps.arcgis.com/en/my-stories/>.

It is a good resource for checking to see if your Story Map has any permissions issues, services missing, and to check the sharing permissions.





## 9. Refinement

When you present this Story Map to your emergency managers, they will likely have a positive reaction if they have not seen this type of application before.

It is also very likely they will have a series of questions.

- Do we have any scenario specific or modeled flood impact data?
- Do we have any sources for actual status of Lifelines?
- Can we create a Story Map for each hazard type in our Region?

The answer to these questions can only be reached through collaboration with stakeholders in the GIS Community and beyond. Use this Story Map to find out what other information your emergency managers need and expect in each phase of a disaster, then refine your web map and app!