

# Introduction to ArcGIS Online & Story Maps



Brought to you by:

The University of Connecticut's  
Center for Land use Education and Research (CLEAR)



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# ArcGIS Online & Story Maps Workshop

## Workshop Details

### Introduction to ArcGIS Online & Story Maps

This course was developed as part of the Geospatial Training Program of the University of Connecticut's Center for Land use Education and Research (CLEAR). The course, and all of its materials, were designed and written by Cary Chadwick and Emily Wilson, Geospatial Extension Educators with the Department of Cooperative Extension in the College of Agriculture, Health and Natural Resources at the University of Connecticut. The current course content was written in January 2019.

CLEAR, established by the University's Board of Trustees in April, 2002, was created to

*provide information, education and assistance to land use decision makers, in support of balancing growth and natural resource protection.*

As part of its mission, CLEAR has developed a number of workshops and courses to help put technical information and technologies into the hands land use decision makers. This course is designed to introduce local land use officials, staff and volunteers - and to a lesser degree other municipal employees and volunteers - to creating and sharing interactive maps and applications on the internet. The workshop is constructed using Environmental Systems Research Institute's (Esri) ArcGIS Online platform which includes story maps. The course focuses on general web GIS concepts, map construction using online data sources, and construction of engaging, interactive story maps that can be utilized to share information with the public.

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### Workshop Prep

In order to successfully complete the exercises in this workshop, you must have all of the following:

1. An ArcGIS Online account. This workshop is written to be used with Esri's free ArcGIS Online "public" accounts. If you have an ArcGIS Online Organization (subscription-based) account, you may use it, although some menu options may be different than what you see in this manual.

To register for a free ArcGIS Online public account, visit:

<https://www.arcgis.com/home/createaccount.html>

2. An up-to-date internet browser or two (Mozilla Firefox, Google Chrome, Safari) - It is a good idea to have more than one installed on your computer if possible. We highly recommend using Firefox or Google Chrome. Stay away from Internet Explorer when possible.

3. A folder on your local drive to save download files. On CLEAR's GTP training laptops, this folder is <C://AGOLTraining>

**All exercises are  
Mac and PC friendly!**

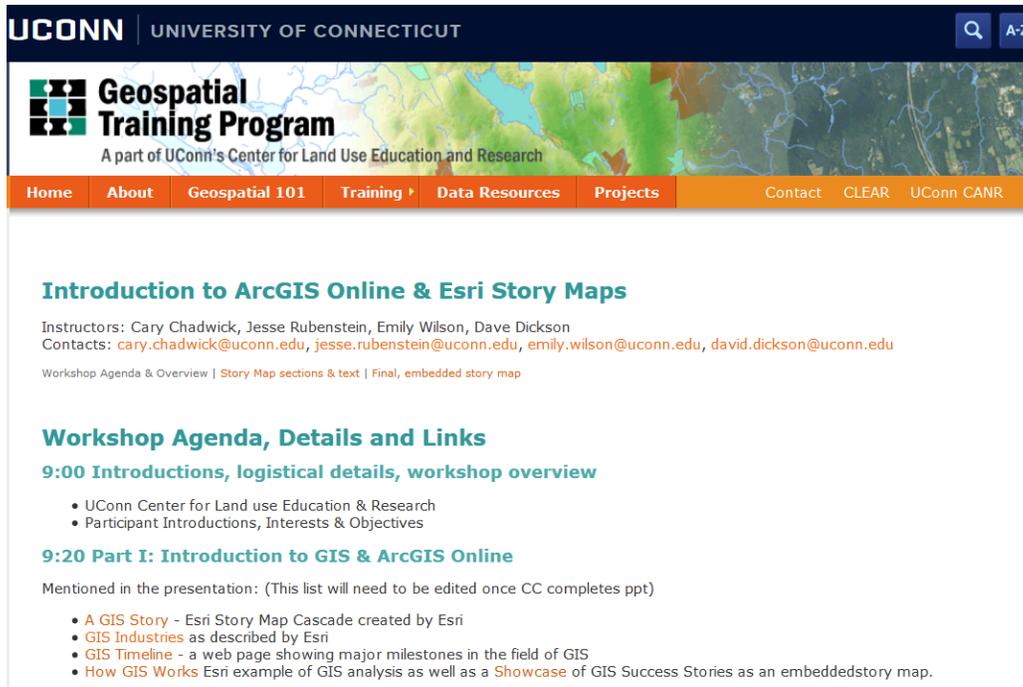
# ArcGIS Online & Story Maps Workshop

## Workshop Details

## Workshop Reference Webpage

Web pages have been developed to support this workshop. They provide relevant information, links to resources, help documents and story maps, as well as content that will be needed to complete the second half of the workshop. We recommend keeping the website(s) open in a separate tab of your internet browser throughout the workshop.

Visit the site: <http://s.uconn.edu/storymaps>



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**Geospatial Training Program**  
A part of UConn's Center for Land Use Education and Research

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### Introduction to ArcGIS Online & Esri Story Maps

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[Workshop Agenda & Overview](#) | [Story Map sections & text](#) | [Final, embedded story map](#)

### Workshop Agenda, Details and Links

**9:00 Introductions, logistical details, workshop overview**

- UConn Center for Land use Education & Research
- Participant Introductions, Interests & Objectives

**9:20 Part I: Introduction to GIS & ArcGIS Online**

Mentioned in the presentation: (This list will need to be edited once CC completes ppt)

- [A GIS Story](#) - Esri Story Map Cascade created by Esri
- [GIS Industries](#) as described by Esri
- [GIS Timeline](#) - a web page showing major milestones in the field of GIS
- [How GIS Works](#) Esri example of GIS analysis as well as a [Showcase](#) of GIS Success Stories as an embedded story map.

## Instructor Contacts

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## ArcGIS Online & Story Maps Workshop

### Workshop Agenda

|                 |   |
|-----------------|---|
|                 | <b>Part I: Introduction to ArcGIS Online</b>  |
| <b>9:00 AM</b>  | <b>Introductions, logistics, workshop overview</b><br>instructor & participant intros, overview of what will be covered in the workshop     |
| <b>9:20 AM</b>  | <b>Introduction to GIS and ArcGIS Online</b><br>Big picture background on GIS, ArcGIS and Story Maps  |
|                 | <b>Exercise 1: Follow the Leader: ArcGIS Online Overview</b><br>Brief introduction to ArcGIS Online   |
| <b>9:45 AM</b>  | <b>Presentation: The ArcGIS Online Web Map</b><br>The ArcGIS Online Web Map   |
|                 | <b>Demo &amp; Exercise 2a: ArcGIS Online Web Map Basics</b><br>Live demo: navigation, data and sources, working with layers                 |
| <b>10:40 AM</b> | <b>Break</b>  |
| <b>10:50 AM</b> | <b>Demo &amp; Exercise 2b: Working with Data in a Web Map</b><br>Live demo: attributes; table functions; filters; symbology                 |
|                 | <b>Demo &amp; Exercise 2c: Adding Your Own Data to the Web Map</b><br>Live demo: importing data (.csv); configuring pop-up; create map note |
|                 | <b>Demo &amp; Exercise 2d: Sharing and Printing a Web Map</b><br>Live demo: sharing a web map; embed HTML; web app templates; groups        |
| <b>12:30 PM</b> | <b>Lunch Break</b>  |
|                 | <b>Part II: Introduction to Story Maps</b>  |
| <b>1:15 PM</b>  | <b>Presentation: What is A Story Map</b><br>Big picture overview of story maps  |
|                 | <b>Follow the Leader: Explore Story Maps</b>  |
| <b>1:40 PM</b>  | <b>Presentation: How Story Maps Work</b><br>Story map prep, what you need to know to get started  |
|                 | <b>Exercise 3: Build a Map Journal Story Map</b><br>Getting started with the Map Journal Builder  |
|                 | <b>Demo: Map Journal Details</b><br>Demo of story map customizations  |
|                 | <b>Exercise 3: Continued</b>  |
| <b>3:00 PM</b>  | <b>Presentation: Building a Map Tour Story Map</b><br>Overview of the Map Tour template and builder   |
|                 | <b>Exercise 4: Build a Map Tour Story Map</b>   |

**ArcGIS Online & Story Maps Workshop**  
**Workshop Agenda**

|                |   |
|----------------|---|
| <b>3:45 PM</b> | <b>Wrap-up &amp; Hands-on Options:</b> <ul style="list-style-type: none"><li>• Explore story maps</li><li>• Read Esri Story Map blogs</li><li>• Work on Map Journal or Map Tour</li><li>• Brainstorm and start your own story map</li><li>• Use CSS to style Map Journal</li><li>• Preview the NEW ArcGIS StoryMaps builder</li></ul> |
| <b>4:30 PM</b> | <b>Class Adjourned!</b>   |

# Part I: Introduction to ArcGIS Online

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## Introduction to ArcGIS Online (AGOL)

ArcGIS Online (AGOL) is a web application developed by Esri for creating and sharing interactive maps on the web. Users can store data, maps and applications as well as create and join groups where interactive maps can be shared publicly or privately among members. In these exercises, you will become familiar with the AGOL interface and create a map.

### Exercise 1: ArcGIS Online Overview

The first hands-on exercise is designed to introduce you to the basic layout of the ArcGIS Online (AGOL) website. You will navigate to the AGOL homepage and explore the other pages and features of ArcGIS Online.

#### ArcGIS Online Account Basics

##### Create an AGOL Public Account

To get started, you will need create an account. The ArcGIS Online Public accounts are free. **If you already have an ArcGIS Online account, skip this step and log in.**



If you have an **ArcGIS Online Organizational Account**, feel free to use it BUT some options are different than what is written here. If you are uncomfortable with that, create a public account for use in this workshop.

- Open Mozilla Firefox. 
- Go to the website <https://www.arcgis.com>
- Click **Sign In**.
- Click on **CREATE A PUBLIC ACCOUNT** and then choose to use your personal **Google or Facebook account or Enter Your Information to create a new, ArcGIS Online Public Account**.
- Fill out all the fields and click **CREATE MY ACCOUNT**.
- Write down your account information.



All web browsers work slightly differently. In this exercise, we will use Mozilla Firefox. Google Chrome and Safari are also good choices.

Username \_\_\_\_\_  
Password \_\_\_\_\_

You will be redirected to your public profile. If you would like to edit your profile, click on **EDIT MY PROFILE**. You now have an AGOL account. Congratulations!

## The AGOL Website

The main sections of the ArcGIS Online website are shown along the top of the webpage. We will briefly review some of these in this exercise.

[ArcGIS](#) [Overview](#) [Pricing](#) [Map](#) [Scene](#) [Groups](#) [Content](#)

**ArcGIS Home.** The home page includes links along the top that provide access to the main sections of AGOL. Esri's featured content, which includes web maps, apps and story maps, is presented below the header. These links are updated regularly.

**Map.** The Map page launches the ArcGIS Online Map Viewer.

- Click on **Map**.

While in the Map tab, notice that the AGOL menu can be accessed in the upper left corner.

**Scene.** Scene Viewer is a web app for viewing geospatial data in 3D, similar to Google Earth.

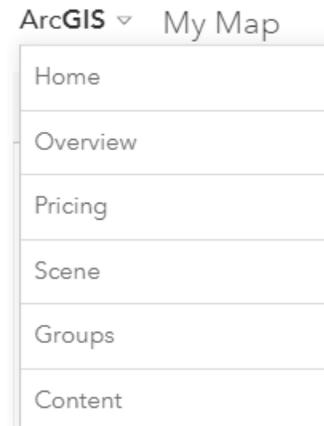
**Groups.** A Group is a collection of items (i.e. maps, layers, apps), which are related to a subject, project, or region. Use groups to organize and share items and collaborate with others.

- Click on **ArcGIS** (upper left) and select **Groups**.
- Take a minute to look over the options on the Groups page.
- There are more advanced group functions available within a subscription-based ArcGIS Online Organization account that are not available with a free account.

**Content.** The Content page contains your items including maps, layers, scenes, apps, tools and files. Use this page to organize, access, browse, search, and work with the content you have saved in your AGOL account.

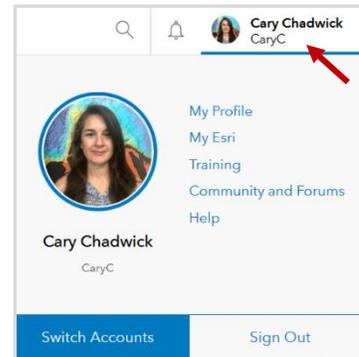
- Click on the **Content** tab at the top of the page.
- Review the Content page. Content provides access to any maps or apps that you have previously created, saved and want to re-open.

There are more than 100 data types that can be added as "Items" to the Content section. Some of these file types cannot be added to a web map directly and must first be uploaded to the Content section before they can be used in a web map. Some of the more common file types that can be uploaded to the Content section include KML, PDF, CSV, GDB, JPG, PNG, and ArcMap MXDs.



**Profile.** Your profile describes you and your account. Menu items also include links to help and community forums.

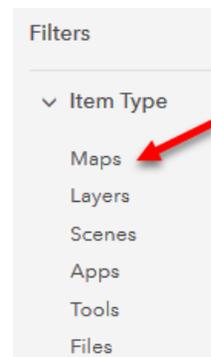
- Click on your **user name** in the top right corner of the page to access the dropdown menu.
- Click on **My Profile**. This is your current information.
- **OPTIONAL:** Click **Edit my profile** and make any changes you'd like. Options are described below. **Save.**
- Click on your **user name** in the top right again. Notice the other links here:



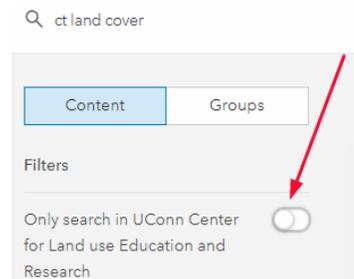
- o **My Esri** - a one stop site for doing business with Esri, with multiple self service capabilities, including purchasing site licenses.
- o **Community and Forums** - a site where customers, GIS professionals, and Esri staff trouble shoot issues, and share experiences.
- o **Help** - the ArcGIS Online Resource Guide, which has a multitude of help topics.
- o **Switch Accounts** – option to link multiple AGOL accounts. This is useful if you have a paid organizational account and a free personal account.

**Search Box.** The Search function searches all of the public content on AGOL, including maps, layers, tools, and apps created by users using tags or keywords.

- Click on **the magnifying glass icon** on the top right of the page.
- Type in **ct land cover** and press return.
- Under **Filters** expand **Item Type** and click on **Maps**.



**NOTE:** If you have an organizational account, you will first need to turn off the search only within your organization option.



One of the first results is the 2010 Land Cover map which was created by UConn CLEAR. Do not open this map now - we will be covering how to explore maps in the viewer in the next exercise.

- Click **ArcGIS** to return to the AGOL homepage. Review the concepts on the following page and explore the ArcGIS Online website while your classmates finish this exercise.

## Let's Review!

Congratulations on completing Exercise 1! This exercise was designed to familiarize you to the ArcGIS Online homepage interface. A number of features and topics were discussed including:

- ✓ **Create an AGOL Public Account:** In order to use the free functionality of ArcGIS Online and save and share maps, you will need to create a free public account.
- ✓ **The AGOL Home Page:** Links to AGOL main attractions, featured maps and apps, groups and your account's Content.
- ✓ **Overview:** The Overview page provides a "big picture" perspective of the capabilities of AGOL.
- ✓ **Pricing:** Paid subscription accounts offer more functionality and geoprocessing than the free accounts do. This page reviews the different levels of paid subscriptions.
- ✓ **Map:** Launches the AGOL Map Viewer. Web maps are foundational to AGOL and are discussed in depth throughout the workshop.
- ✓ **Scene:** Scene Viewer is a web app that allows you to view maps in 3D, similar to Google Earth.
- ✓ **Groups:** A group is a collection of items (i.e. maps, layers, apps), which are related to a subject, project, or region. You can create a group as a way to organize content and people (accounts) to share items and collaborate with others.
- ✓ **Content:** The Content page contains items you have created, items you have marked as your favorite, and content shared with you via groups. From this page you can organize, access, browse, search, and work with content on AGOL.
- ✓ **Profile:** Your profile describes you and your account. Menu items in this section also include links to help and community forums.
- ✓ **Search Box:** The search box allows you to search all of the public content on AGOL, which includes maps, layers, tools, and apps created by users using tags or keywords.

**This concludes Exercise 1.**

## Exercise 2: Creating an AGOL Web Map

This exercise is an introduction to creating custom, interactive web maps using the ArcGIS Online Map Viewer. The Map Viewer is where you build maps by adding data layers from different sources across the web. By the end of this four-part activity, you will have created an interactive web map using content from various sources (including you!) and be ready to share it.

There are four sections of this exercise:

- Exercise 2a: ArcGIS Online Web Basics
- Exercise 2b: Working with Data in a Web Map
- Exercise 2c: Adding Your own Data to the Web Map
- Exercise 2d: Sharing and Printing an ArcGIS Online Web Map

## Exercise 2a: ArcGIS Online Web Map Basics

- If necessary, return to the ArcGIS Online home page in Firefox.  
<https://www.arcgis.com/home>
- Click on **Map** (top of the page) to open the AGOL Map Viewer.

### Web Map Basics

#### Navigation Tools

There are several ways to zoom in and pan around the map display area in the ArcGIS Online Map Viewer.

- o **Method 1: The Zoom Tool.** The zoom tool is located in the upper left side of the map display area. Click on the + and - to zoom in or out. To return to the original extent, click the home icon .
  - o **Method 2: The Scroll Wheel Zoom.** Zoom by using the scroll wheel on your mouse. Scroll up (away from you) to zoom in and scroll down (towards you) to zoom out.
  - o **Method 3: The Mouse Pan.** Pan your map by clicking and holding the left mouse button and dragging the map to a new extent.
  - o **Method 4: The Double Click Zoom.** Double click anywhere on the map using the left mouse button to zoom in 25% on that area.
- Click on the **Default Extent** button ( from Method 1) to zoom to the original extent.
  - For practice, use the methods described above to explore and navigate to your happy place on the map.



#### Map Viewer Tools

The Map Viewer tools include: add data, change the basemap, save, share, print, measure features, create and access bookmarks, and search for locations or features on your map. Let's take a closer look.



## Map Details and Side Panel

- Find the **Details** heading on the left side of the toolbar.
- Click on it to change the visibility of the side panel.
- With the side panel **visible**, explore the three subheadings: **About**, **Content**, and **Legend**.



**About:** details about a saved map and tips on how to create new content

**Content:** lists map layers contained in the web map

**Legend:** shows symbology for active layers in the web map

**NOTE:** Your map is still blank (contains no content) so you won't see much under these headings yet. Standby!

## Change Basemap

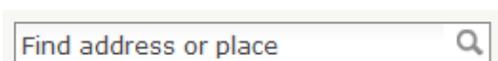
A basemap is a reference map layer that provides a backdrop for the additional content in a map. Examples of basemaps include street networks, aerial imagery, topographic maps, and simple, single color reference maps.



- Click on the **Basemap** button.
- Explore the different basemaps. Zoom in on a location to see how map scale impacts what is visible.
- When you are finished, select the **Imagery Hybrid** basemap.

## Search

The Search tool allows you to search and locate an address or place name or geographic coordinates.



- In the upper right corner, find the search tool (**Find address or place**).
- Type **Haddam, CT** into the window and hit **enter**. The map display zooms to the town of Haddam and a search result pop-up window opens.
- Close the search result on your map by clicking on the **X** button in the upper right corner of the pop-up window.

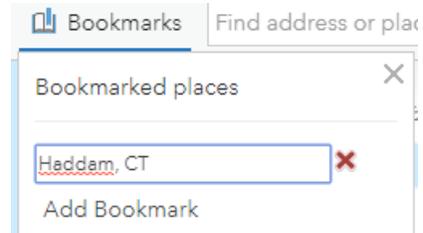
**Tip:** If multiple results are returned, click on **Show more results** in the pop-up window to see a list of locations that satisfied your search criteria. Note the option to **Add to Map Notes**. We haven't gotten to Map Notes yet, so don't click on this now, but know that you have the ability to add a search result directly to a Map Notes layer in your map.

**Optional Extra Credit:** Can you find the Cooperative Extension Center in Haddam where you are sitting?

## Bookmarks

A bookmark is a shortcut to a place of interest on the map. The spatial extent and map scale are saved in a bookmark. When you or one of your map readers clicks on the bookmark, the map will zoom to that location.

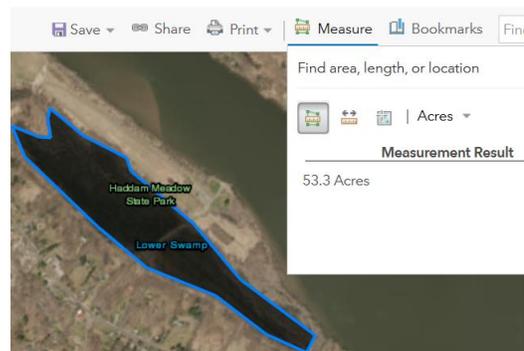
- Make sure you are still zoomed to Haddam. Click **Bookmarks**.
- Select **Add Bookmark** and type in **Haddam, CT**, then press **Enter**.
- Click the **X** to close the Bookmarked places menu.
- Zoom and pan to a new location on your map. You could even click on the **Default Extent** icon  to zoom back to the initial extent.
- Click on **Bookmarks** again, and select the **Haddam, CT bookmark**. You will automatically zoom back to Haddam. Magic! The bookmark will be saved in the web map and is available any time.



## Measure

The measure tool provides an easy way to find area, length or location of a feature on the map. Various units of measure are available.

- Click on the **Measure tool** on the main toolbar. Area is selected by default.
- Change the units to **Acres**.
- To measure the area of the Lower Swamp in Haddam Meadows State Park,
  - o **Locate** the swamp on your map and **zoom in**.
  - o **Left click** (multiple times) to “trace” the perimeter of the swamp.
  - o **Double click** to close the shape.



This is an estimate and doesn't have to be perfect.

*What is the rough area of the swamp in acres?*



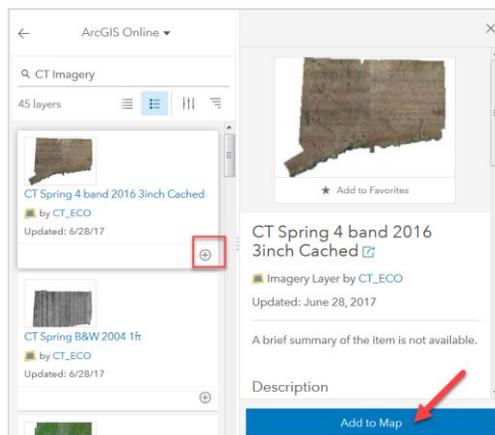
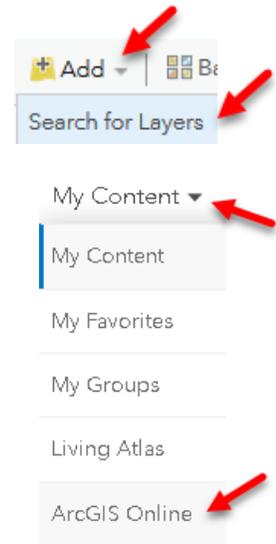
- Explore the **Distance** and **Location** functions (next to Area) if you wish and then **close** the measurement tool by clicking the **X**.

## Adding Online Data to a Map

Data layers are the contents of a map and help convey information. One or more layers can be part of a map. In ArcGIS Online layers can be added from existing content registered on ArcGIS Online, added from a GIS server, from a data file stored on your computer or even created from scratch! The following exercise explores adding different types of data layers to an ArcGIS Online Web Map.

## Add Data from ArcGIS Online

- Change the **Basemap** to **Streets**.
- Click on **Add** (upper left side) and choose **Search for Layers**.
- Click on the small **arrow** next to **My Content** and choose **ArcGIS Online**. Now it will search all public datasets registered on ArcGIS Online. At the writing of this manual there were 1,156,953 public layers!
- In the **Search for Layers** box, type **CT Imagery** and press enter.
- Click on **CT Spring 4 band 2016 3inch Cached** layer. Additional information about the service will open.

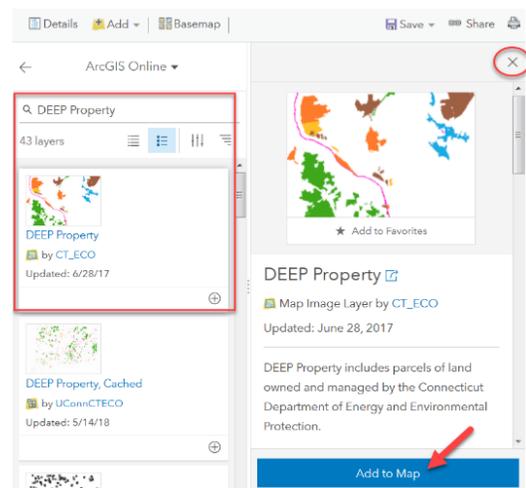


The detailed zoom levels of the imagery basemap on ArcGIS Online is the same imagery as the CT Spring 4band 2016 layer because Esri integrated this high-quality dataset into their basemap program

- Click either the **plus sign** ⊕ OR the **Add to Map** button to add the image service to the map.
- Close the informational panel with the **X** at the top.

The CT Spring 4band imagery will be added to the Content window. Before we take a look, let's add one more layer to your map.

- Remove the **CT imagery** search criteria and replace it with **DEEP Property**. Press **enter**.
- Click on the result, **DEEP Property (by CT\_ECO)**, to learn more about the layer.
- Click **Add to Map**.
- Close the information window by clicking the **X** in the upper right corner.



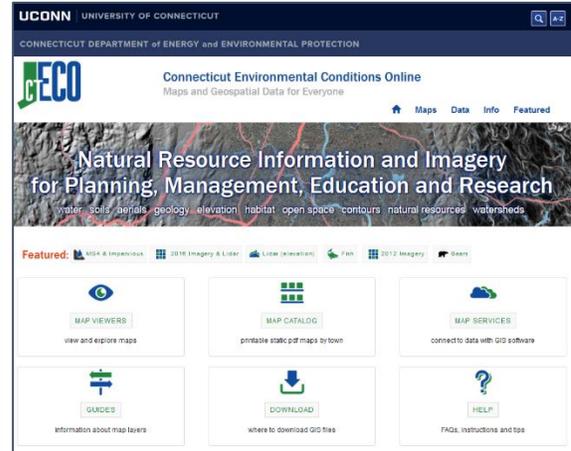


Did you know that Connecticut Environmental Conditions Online (CT ECO) is the place to go for statewide natural resource data, imagery and elevation? Geographic data can be accessed as PDF maps, interactive viewers and map and image services (like the one used in this exercise!).

<http://cteco.uconn.edu>



CT ECO is a partnership between the CT Dept. of Energy and Environmental Protection (DEEP) and UConn CLEAR.



## Working with Layers in the Content Window

You will use the layers you just added, along with a few more to build a map of the historic Connecticut Valley Railroad which runs along the lower Connecticut River. The next few steps of the exercise will focus on working with the layers you just added.

- Click on the **Details** tab (upper left) and then be sure you are looking at the **Content** window. The layers in your map should include:
  - o **DEEP Property** - state owned parks, forests, natural areas, historic reserves
  - o **CT Spring 4 band 2016 3inch Cached** - high resolution leaf off imagery
  - o The Esri **Streets** basemap

### Layer Order Matters

- **Hover** over the layer named **DEEP Property** so that the ellipsis  is visible to the left of the layer name.
- Click on the  and (hold down the left mouse button) drag the layer down the list, below the **CT Spring 4band imagery**.

*What happened to the DEEP Property layer on your map?*



- **Uncheck the box** next to the **CT Spring 4 band 2016 3 inch Cached** data layer. The DEEP Property layer features are visible again. They were always there, but were hidden by the imagery layer. Order matters!
- How should you arrange the layers so that both DEEP Property and the imagery are visible? See if you can fix the problem. Hint: drag the DEEP Property layer back up to the top of the Content window.

### User Friendly Layer Names

Map or image services sometimes come with complicated names. In this step, you will rename a layer to give it a simpler, "user-friendly" name.

- Hover your mouse over the **CT Spring 4 band 2016 3inch Cached** layer.
- Click on the ellipsis **...** that appears below the layer name and select **Rename**.
- Change the layer name to **Spring 2016 Aerial**. Click **OK**. The new layer name is now listed in the Content window. Leave the layer turned off (unchecked) for now. You will use it later.

## Adding a Service from a REST Endpoint

The CT ECO website (<http://cteco.uconn.edu>) is a great place to find Connecticut map and image services that can be added to ArcGIS Online maps. The CT ECO services have been registered with ArcGIS Online so they will appear in the ArcGIS Online search. Services that are not registered with ArcGIS Online can be added using a REST (Representational State Transfer) endpoint URL. This is a common format that organizations use to publish spatial data for public use.

- Open a new tab in your browser (leave ArcGIS Online open) and visit the **CT ECO website**: <http://cteco.uconn.edu>.
- From the **CT ECO home page**, click on **Data** in the upper right.
- The **Data page** is a road map leading to different methods for accessing or downloading data on the site. Click on **Map and Image Services**.
- The **Map and Image Services** page provides access to the REST endpoint URLs for over 100 data layers for the state of Connecticut. **Click on a data category** on the left side of the window. Each theme has a number of services, many of which contain multiple layers.



### Layer vs Service

A **layer** is a specific dataset. Multiple layers come together to form a map. A **service** is a map, usually containing multiple layers, which is published through server GIS software and made available over the web.

- Click on the **Open Space** category and select **DEEP Property**.

Data Guides, Resource Guides and metadata provide more information about what the data layer is and how it should be used appropriately.

- Click on the link to the **Server URL** (aka REST URL). This is the REST endpoint for the DEEP Property service. Additional information about the data is provided here. It's always a good idea to read and understand the data you use in your maps. Not everything you read on the internet is true, after all.

The screenshot shows the CT ECO website interface. On the left is a vertical navigation menu with categories like 'Base Maps', 'Bioscience', 'Built Environment', 'Coastal', 'Elevation', 'Geology', 'Hydrography', and 'Open Space'. The 'Open Space' category is expanded, showing a list of services including '1997 Municipal and Private Open Space', 'DEEP Property', 'DOT Scenic Land Strips', 'Federal Open Space 1997', 'Protected Open Space Mapping', and 'Parcels for Protected Open Space Mapping'. In the center, the 'DEEP Property' service is selected, displaying its 'Server URL' and links to 'Data Guide', 'Resource Guide', and 'Metadata'. On the right is a map of Connecticut with various colored regions, and a red arrow points to it.

## Add a Single Layer of a Service

In addition to detailed information about the service, the REST URL also provides access to each layer in the service. In ArcGIS Online, either the whole service (all the layers) can be added to a map or a single layer. In this case there is only one layer in the service (DEEP Property) and that is what you are going to add to your map.

- From the **Server URL (REST URL)**, under **Layers**, click on the **DEEP Property (0)** link.
- **Select and Copy** (right-click, copy) the **full web URL** from the top of the browser window.

### Open\_Space/DEEP\_Property (MapServer)

**View In:** [ArcGIS JavaScript](#) [ArcGIS Online map viewer](#) [G](#)

**View Footprint In:** [ArcGIS Online map viewer](#)

**Service Description:** DEP Property includes parcels of land Environmental Protection (DEEP) for the purpose of preserving, floods, and providing the general public with outdoor recreation and hunting. It primarily includes the following types: park trail, natural area preserve, historic preserve, wildlife, and fish hatchery. DEP Property is based on information from

**Map Name:** DEEP Property

[Legend](#)

[All Layers and Tables](#)

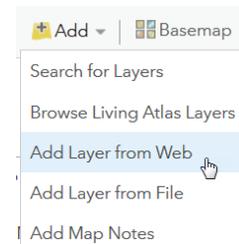
**Layers:**

- [DEEP Property \(0\)](#)

[https://cteco.uconn.edu/ctmaps/rest/services/Open\\_Space/DEEP\\_Property/MapServer/0](https://cteco.uconn.edu/ctmaps/rest/services/Open_Space/DEEP_Property/MapServer/0)



- Return to the browser tab that includes your AGOL web map.
- Click **Add** and select **Add Layer from Web**.
- **Paste the URL** into the **URL** box.
- Click **ADD LAYER**. The DEEP Property feature layer is listed in the Content window. Yes, there are now two! We'll get to that in a minute.



## Add Layer from Web

What type of data are you referencing?

An ArcGIS Server Web Service

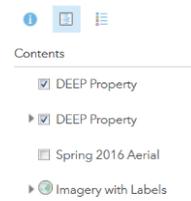
URL:

Use as Basemap

[BROWSE FOR MORE LAYERS](#)

[ADD LAYER](#)

[CANCEL](#)



Before we move on, let's add one more service that you will need later on in this exercise.

## Add a Complete Map Service

- Click **Add** and select **Add Layer from Web** again.
- Because the URL for the **DEEP Property** service is still copied to your clipboard, right click and **Paste** it into the **URL** box again.
- Click **BROWSE FOR MORE LAYERS** to open a list of services on the server (in this case, the CT ECO maps server).
- Under **Choose a layer**, scroll up and select the **Base\_Map/Transportation** service from the list (there are a lot of them!). The URL changes to the **Transportation** service.

### Add Layer from Web

What type of data are you referencing?

An ArcGIS Server Web Service

URL: [https://cteco.uconn.edu/ctmaps/rest/services/Open\\_Space/DEEP\\_Property/MapServer/0](https://cteco.uconn.edu/ctmaps/rest/services/Open_Space/DEEP_Property/MapServer/0)

Use as Basemap

**BROWSE FOR MORE LAYERS**

### Add Layer from Web

What type of data are you referencing?

An ArcGIS Server Web Service

URL: [https://cteco.uconn.edu/ctmaps/rest/services/Base\\_Map/Transportation/MapServer](https://cteco.uconn.edu/ctmaps/rest/services/Base_Map/Transportation/MapServer)

Use as Basemap

Choose a layer

Base\_Map/Transportation

**ADD LAYER** CANCEL

- Click **Add Layer** to add the Transportation map service to your map.
- Click on the **Transportation** layer name and uncheck **Airports** and **Routes and Streets** so that only **Railroad** is turned on.
- Click the gray arrow or the service name to condense the layer.
- We'll use the Transportation service later in the exercise, but for now, turn it off on your map by **unchecking the box** in the Content window.



**Tip: Browse for More Layers** is a recent addition to ArcGIS Online and a super helpful one. It lists ALL of the services available on the server, here the CT ECO ctmmaps server.

Transportation

#### Layers:

- [Airports](#) (0)
- [Routes and Streets](#) (1)
  - [Routes 1](#) (2)
  - [Routes 2](#) (3)
  - [Routes 3](#) (4)
  - [Routes 4](#) (5)
  - [Routes 5](#) (6)
  - [Streets](#) (7)
- [Railroad](#) (8)
  - [Railroad 1](#) (9)
  - [Railroad 2](#) (10)

The Transportation Map Service contains 11 layers numbered 0 to 10. Any of these layers *could* be added individually to an ArcGIS Online map just as the single layer of DEEP Property was added.



### Map Service vs Image Service

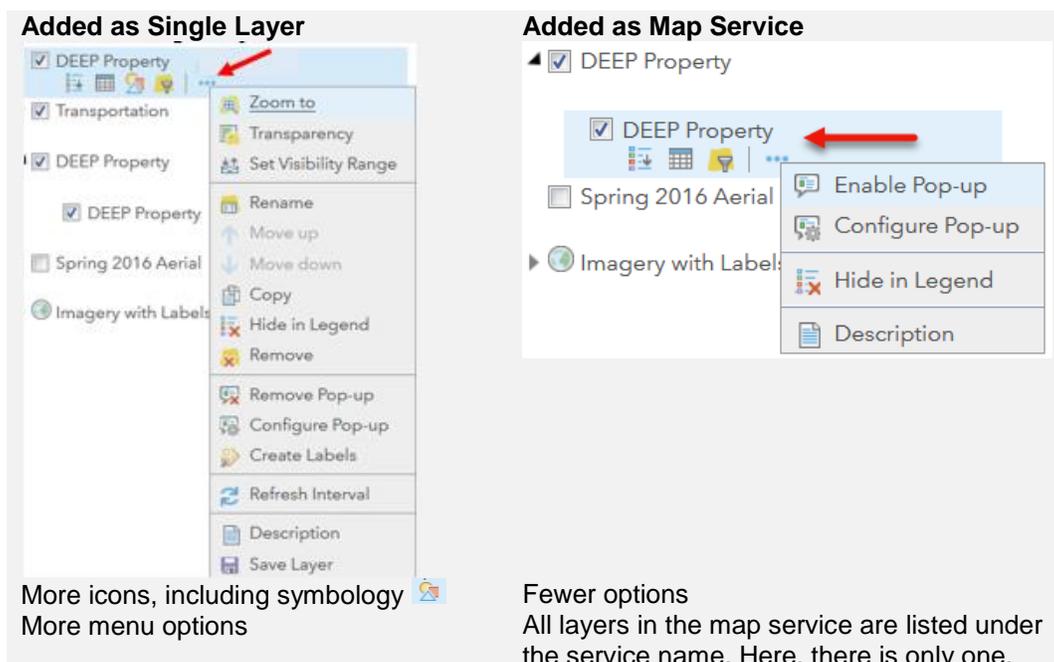
A **Map Service** usually consists of multiple GIS vector layers (points, lines and/or polygons). A map services makes maps, features and attributes available through a service. On CT ECO, most map services are available on the ctmmaps server <https://cteco.uconn.edu/ctmaps/rest/services/>

An **Image Service** serves imagery (also called rasters, made up of pixels). More options are available for imagery when it is served as an image service. On CT ECO, most image services are available on the ctraster server <https://cteco.uconn.edu/ctraster/rest/services/>

## Update Additional Layer Properties

- **Hover your mouse** over both **DEEP Property** layer names (one at a time) in the Content window.

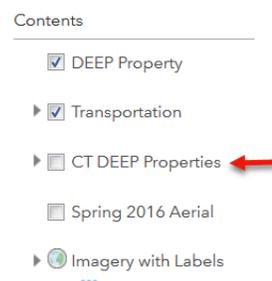
When you hover over the **DEEP Property layer** (the one on top) which was added as a single layer, more functions are available than when you hover over the **DEEP Property map service**.



## Update the Layer Name

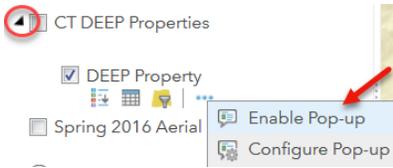
To avoid confusion of having two items with the same name in the Content window, rename one of them.

- Hover the mouse over the **DEEP Property map service** (the one with fewer options) and click on the ellipsis **...**
- Select **Rename**.
- Change the layer name to **CT DEEP Properties**.



While we are here, let's update a few settings that we will use later in our story map exercise.

- To set Transparency
  - o Hover the mouse over **CT DEEP Properties** and click on the ellipsis **...**
  - o Click on **Transparency** and set it somewhere between 40 and 50%.
- To enable the pop-up
  - o Expand the **CT DEEP Properties** Layer.
  - o Click on the ellipsis under **DEEP Property** and click **Enable Pop-up**.

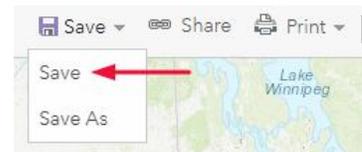


- Turn off **CT DEEP Properties** (uncheck) in your map. We'll use it later.

## Save Map

ArcGIS Online does not save automatically. It's a good idea to save your work early and often.

- Click **Save** on the toolbar at the top of the page and select **Save** in the dropdown menu.
- In the **Save Map** window, add the following:
  - o **Title.** Add as shown below but with **your own initials.**
  - o **Tags.** Tags are used when you or others search on ArcGIS Online.
  - o **Summary.** Enter a short summary about the map.
  - o **Save in folder.** The folder will automatically be the default with your account. As you create more content, you may want to create folders.
- Click **Save Map.** The map will be saved to your **My Content** folder in your personal ArcGIS Online account.



### Save Map

Title:

Tags:   
Add tags

Summary:

Save in folder:

**Optional Extra Credit.** There are many places to find map and image services besides CT ECO. A few are listed below. The key is to find that REST endpoint page. Visit the workshop webpage <http://s.uconn.edu/storymaps> to link directly.



Congratulations, you have completed Exercise 2a. Let an instructor know you are done. We will pause here for questions and demonstrate what will be coming next in Exercise 2b.

## Exercise 2b - Working with Data in a Web Map

The DEEP Property feature layer includes parcels of land owned and managed by the state of Connecticut for the purpose of preserving open space, protecting natural habitats, managing wildlife and providing public access to outdoor recreational activities.

### Explore a Layer

- Click on the **DEEP Property** layer name to expand the contents. The layer is currently being symbolized (colored) to represent the type of property as designated by DEEP. This information is stored in the layer's attribute table.
- Click the **Haddam, CT** bookmark.
- Locate the line from the **DEEP Property** layer that follows the Connecticut River.
- Click on the feature on the map.

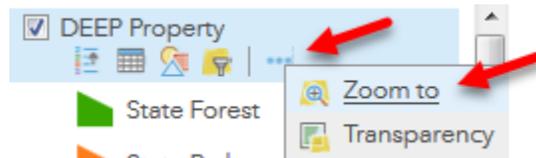
What does pink represent in DEEP Property layer?



What is the name of the Property (look under fields in the pop-up)?



- Close the pop-up.
- Mouse over the **DEEP Property** layer name, click on the ellipsis **...** and then **Zoom to** in order to zoom out to all DEEP properties in Connecticut.



Which color appears the most throughout CT? What type of property does this represent?



## Symbolizing Data

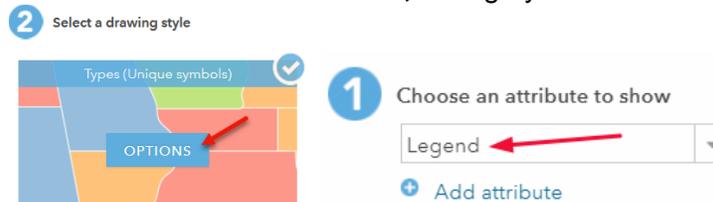
Symbology refers to the colors and symbols used to display features on a map. Symbology is important for conveying information to map readers. In this step, you will change the symbology for the DEEP Property layer.

Map features can be symbolized based on a field in the layer's attribute table. Let's give it a try!

- Mouse over **DEEP Property** and click the **Change Style** icon .
- Under **1. Choose an attribute to show**, select **Simple Legend**. The symbology of the features in the layer will update, along with the legend on the map. Notice that the number of categories classifying the DEEP Property features is pared down significantly. This is because there are only 4 unique values in the Simple Legend.



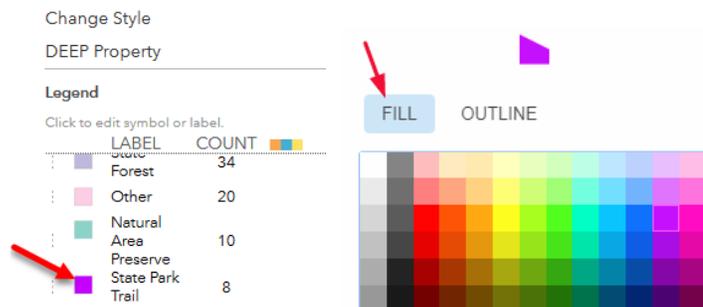
- Under **1. Choose an attribute to show**, change your selection back to **Legend**.



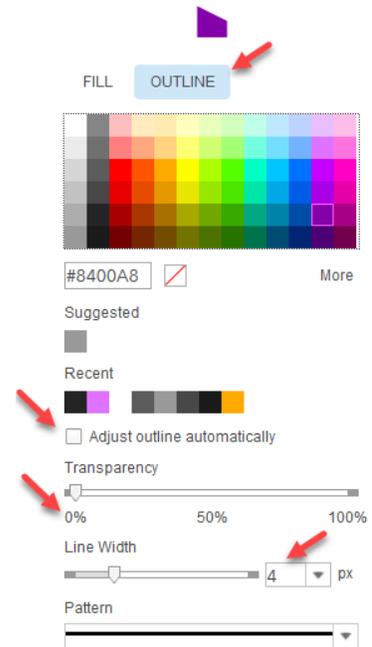
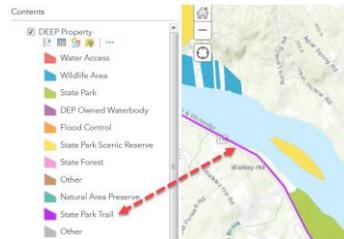
- Under **2. Select a drawing style**, click on **Options** in the **Types (Unique symbols)** box.

The **Change Style** window has options to control the Transparency (opacity), Visible Range (turn the layer on/off at a particular map scale) and change the symbol.

- In the **Change Style** panel find the **State Park Trail** category in the list.
- Click on the **color swatch** for **FILL**.
- Choose a bold color to represent the **State Park Trails**.



- Click on **OUTLINE** and select the same color you picked for **FILL**.
- Uncheck the **Adjust outline automatically** box and then change the **Line Width** to at least 4 px. Set the **Transparency** to 0%.
- Don't worry about the other categories for now.
- Click **OK** to return to the **Change Style** window. Click **OK** again to apply the style.
- Click **DONE** to return to Content window. Notice the symbology of the State Park Trail features on your map.



## Filtering

Filters in ArcGIS Online are a way to simplify a layer in a map. By hiding unimportant features in a layer, only what's relevant is visible to map readers. In this step you will apply a filter to the DEEP Property layer so that it only shows the Connecticut Valley Railroad State Park Trail.

- Click on **Bookmarks** and return to **Haddam, CT**.
- Be sure the **DEEP Property** feature layer is **visible** (checked on) in your map. It should be the top layer in your layer list.

Recall from the previous step that we are interested in the State Park Trail called **Connecticut Valley Railroad State Park**. The following steps create a filter so that the Property = Connecticut Valley Railroad State Park Trail.

- Hover your mouse over the **DEEP Property** layer and click on the **Filter icon** .
- In the Filter window, click on the **down arrow** next to **GIS Acres** and change it to **Property**.
- Leave the operator set to **is**.
- Click on the radio button next to **Unique**.
- Click on the **down arrow** above it to show a list of unique values stored in the **Property** field.
- Scroll until you find **Connecticut Valley Railroad State Park Trail**. Hint: you can type in the box to find the value faster.
- Click **Apply Filter**.

## Filter: DEEP Property

Create + Add another expression  Add a set

Display features in the layer that match the following expression

Property is equal to Railroad State Park Trail

Ask for values

Value  Field  Unique

APPLY FILTER APPLY FILTER AND ZOOM TO CLOSE

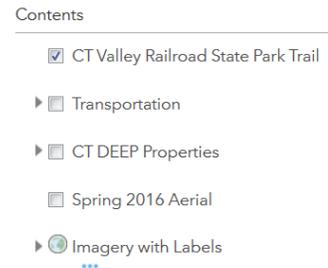
How did the DEEP Property layer change on the map? Is that what you expected after applying the filter?



## Update the Layer Name

Now that you have significantly altered what is visible on the DEEP Property layer, the names needs to be changed to reflect which is actually shown – the Connecticut Valley Railroad State Park.

- Hover your mouse over the **DEEP Property** layer in the **Content** window and click on the ellipsis **...**.
- Select **Rename**.
- Change the layer name to **CT Valley Railroad State Park Trail**.
- **Save** your map.

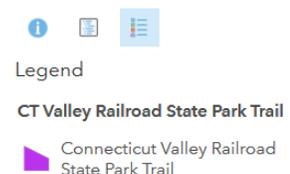


Check out the ArcGIS Online help docs for more info on creating advanced filters: <https://doc.arcgis.com/en/arcgis-online/create-maps/apply-filters.htm>

## Optional Extra Credit: Update the Legend

Unfortunately, the legend in the Contents window does not automatically adjust after a filter. To remove the other values from the legend,

- Open **Change Style** for the **CT Valley Railroad State Park Trail** layer.
- Under **1. Choose an attribute to show**, choose **Property**.
- Change the color by selecting **2. Select a drawing style**, in the **Types (Unique symbols)** box. Select **OK**.
- Select **OK** again and **Done**.
- **Save**.



## Optional Extra Credit: Working with Tables

Tabular information is the foundation of a geographic information system (GIS). A table is connected to map features and makes it possible to visualize, query, and analyze the data. Tables are critically important in making geospatial data useful.

### Selecting Records (Features)

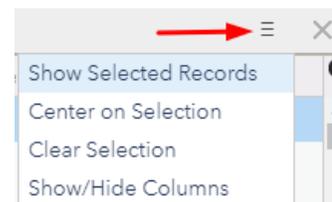
- Turn off (uncheck) **CT Valley Railroad State Park Trail** layer and turn on (check) the **CT DEEP Properties** map service.
- Click on the layer name to expand the map service.
- Hover your mouse over the **DEEP Property** subheading and select **Show Table**.
- Notice the different fields (columns) in the table such as *Legend, Property* and *Acres*.
- Click on the first record (row) so that it is highlighted blue. This record is now selected in the table and also on the map.

☑ CT DEEP Properties



| DEEP Property - DEEP Property (Features: 487, Selected: 1) |                        |   |           |                       |
|--|------------------------|---|-----------|-----------------------|
| Legend   | Simple Legend          | Property                                    | GIS Acres | Show Selected Records |
| State Park Scenic Reserve                                  | State Park or Preserve | Above All State Park Scenic Reserve         | 24.00     | Center on Selection   |
| State Park Trail   | State Park or Preserve | Airline State Park Trail (North Trail)      | 65.04     | Clear Selection       |
| State Park Trail   | State Park or Preserve | Airline State Park Trail (Northern Section) | 201.35    | Show/Hide Columns     |
| State Park Trail   | State Park or Preserve | Airline State Park Trail (Southern Section) | 206.49    | Filter                |

- Hold down the **Control key (command key)** on a Mac) on your keyboard and click a few more records lower in the table. Alternatively, use the Shift key to select contiguous records.
- Click on the **burger icon** in the upper right corner of the table.
- Click **Show Selected Records**. The table shows only the selected records.



When a record is selected in the table, it is also selected on the map.

- Click on any **CT DEEP Properties** polygon on the map. That property is now selected on both the map and the table.
- From the burger menu, click on **Center on Selection**. This zooms the map to the selected property.
- Return to the burger and click on **Clear Selection**.
- In the burger's dropdown menu, click **Show/Hide Columns**.

The list contains the table's attributes. Some are checked (visible) and can be unchecked. Leave the four main fields visible. Click anywhere off the dropdown menu to make it disappear.

### Sorting and Summary Statistics

Records in the attribute table can be sorted based on a field (text or numeric) and summary statistics can be calculated on numeric fields.

- Locate the **GIS Acres** field in the table.

- **Left click** on it and choose **Sort Descending**. The largest property is listed at the top of the table.
- **Left click** on the **GIS Acres** field again. This time choose **Statistics**. The GIS will calculate summary statistics for the values stored in the GIS Acres field.



*How many properties are in the DEEP Property layer?*

*What is the acreage of the largest DEEP Property in the layer?*

*On average, how large are DEEP Properties across the state?*

- **Close** the **Statistics** window.



Congratulations, you have completed Exercise 2b. We will pause here for questions and demonstrate what will be coming next in Exercise 2c.

## Exercise 2c: Adding Your Own Data to the Web Map

### Add Data from a File

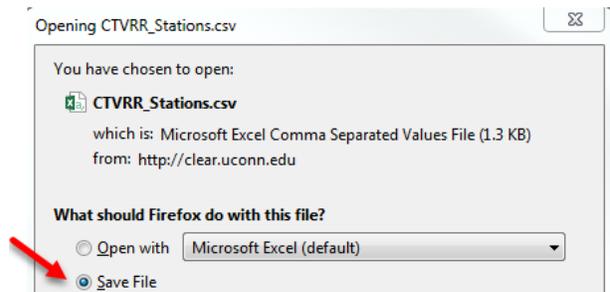
Spatial data stored in a variety of formats can be uploaded into ArcGIS Online, either directly into a web map or into your AGOL Content window. This exercise will focus on working with tabular data which often originates from a Microsoft Excel file. In order for Excel data to be mapped successfully, the table must include fields that store geographic information – either an address or latitude/longitude coordinates (stored in decimal degrees). The Excel file (.XSLX) file must also be converted to a Comma Separated Values (CSV) or text file format (.TXT). The image below shows a table in Excel that has been formatted for use in ArcGIS Online.

| Station            | Latitude  | Longitude  | Town       | Current_Use             | Photo_Link  |
|--------------------|-----------|------------|------------|-------------------------|---|
| Goodspeed Station  | 41.456149 | -72.467718 | Haddam     | Newest stop along the n | http://clear.uconn.edu/geospatial/workshops/AGOL_SM18/photos/haddam.jpg |
| Chester Station    | 41.416917 | -72.436375 | Chester    | Currently used for CTVR | http://clear.uconn.edu/geos   |
| Deep River Station | 41.394172 | -72.426528 | Deep River | CTVRR offices at Hadlyn | http://clear.uconn.edu/geos   |
| Essex Station      | 41.350147 | -72.404817 | Essex      | Major Departure/Arrival | http://clear.uconn.edu/geos   |

### Preparing for Data Upload

In this step, you will download a file from the CLEAR website and save it to your computer. You will then add it to your ArcGIS Online map. The data file contains locations of train stations along the Connecticut Valley Railroad.

- Open a **new tab** in your browser and type in the following URL:  
***http://s.uconn.edu/stations***
- You will be directed to a CSV file called ***CTVRR\_Stations.csv***.
- Click the **radio button** next to **Save File** and save the CSV file to your **C:\AGOLTraining** folder on your computer.

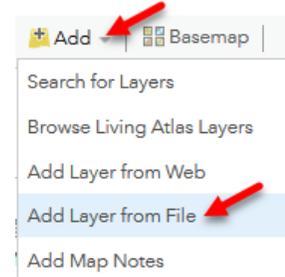


**Tip:** Different browsers treat downloads differently. For example, Google Chrome automatically downloads to a default location.

### Upload Data to ArcGIS Online

- Return to your ArcGIS Online web map.
- If your attribute table is open, close it.
- Change the **Basemap** to **Streets** and be sure that the **Spring Imagery** is turned **off**.

- Click on **Add** and select **Add Layer from File**.
- Click **Browse**.
- Locate the **CTVRR\_Stations.csv** file that you just downloaded.
- **Click on it** and click **Open**.
- Click **Import Layer** to add the CSV to your map.



### Add Layer from File

Locate the file you want to import.

- Shapefile (ZIP archive containing all shapefile files)
- CSV or TXT files with optional address, place or coordinate locations (comma, semi-colon or tab delimited)
- GPX (GPS Exchange Format)
- GeoJSON (open standard format for simple geographical features)

File:  CTVRR\_Stations.csv

Tip: You can also drag and drop a CSV or GPX file from your desktop onto your map.



ArcGIS Online supports many different file types. The Map Viewer can import data directly as long as it is one of the following formats:

- **shapefile** (ZIP archive containing all shapefile files);
- **CSV** or **TXT** with address or coordinate locations (comma, semi-colon or tab delimited);
- **GPX** (GPS exchange format);
- **GeoJSON**.



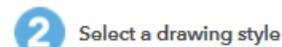
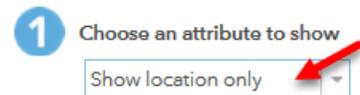
Other types of spatial (and non-spatial) data can be added to My Contents in ArcGIS Online and then added to an AGOL web map.

ArcGIS Online uses the location information from the latitude and longitude fields in the CSV file to correctly place the points on the map.

- Under **1. Choose an attribute to show**, select **Show location only**.
- Under **2. Select a drawing style**, choose the **Location (single symbol)** and then **OPTIONS**.
- Click on the word **Symbols**. Select a symbol to represent the four train stations.
- Change the **symbol size** to 30.
- Click **OK**, and then **OK** again, and **DONE** to return to the **Content** window.
- **Turn off** (uncheck) all layers except for **CTVRR Stations** and **Transportation**.
- Zoom and pan your map until you can see all four **CTVRR Stations** on your map.
- Create a **new bookmark** called **CT Valley Railroad**. If you forgot how, return to page 7 for instruction.
- **Save** your map.

Change Style

CTVRR Stations

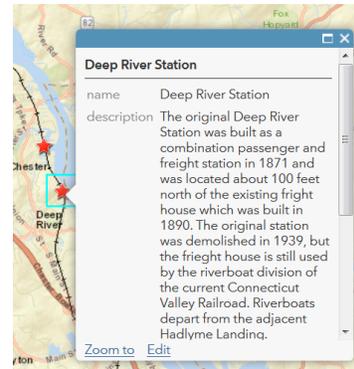


## Configure a Pop-up

A pop-up provides descriptive information about a feature on a map. The pop-up can be configured to display text, attributes and other media including images, charts and links to external web pages.

First, let's rename the **CTVRR Stations** layer.

- Hover over the **CTVRR Stations** layer name and click on the **ellipsis** .
- Select **Rename**.
- Change the name to **CT Valley Railroad Stations**. Click **Ok**.
- Click on a station point on your map. A pop-up window will appear with the default configuration.
- Click on the **ellipsis** again and choose **Configure Pop-up**.



The **Configure Pop-up** window contains many options for customizing a pop-up. We'll take a closer look at several options in the steps below.

### Pop-up Title

Text that is typed into the pop-up title will be used in the pop-up title for every feature in the layer. Using a value from an attribute table means that each pop-up can be different.

- Initially the **Pop-up Title** includes **{name}**. The value in the name field (which is the station name) will automatically be the title.
- Under **Pop-up Title**, click on . The list shows all fields stored in the **CT Valley Railroad Stations** layer. One or more can be selected to be displayed in the title field. For now, leave it as the default, **{name}**.

### Pop-up Contents

This is the bread and butter of the pop-up. Most pop-ups include information from the layer's attribute table.

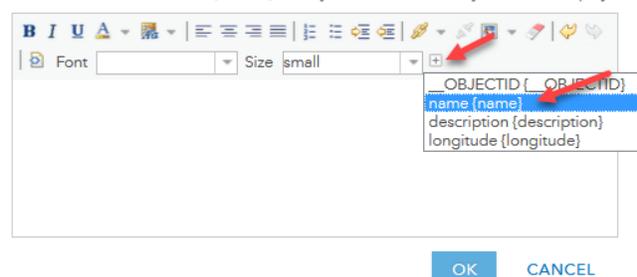
**A list of field attributes.** The default display is set to simply show a list of the visible values in the layer's table.

**A custom attribute display.** The most flexibility exists with the custom attribute display. There are options for adding and formatting text, adding links and editing HTML. Let's change the pop-up to display a custom configuration.

- Under **Pop-up Contents**, choose **A custom attribute display** from the **Display** options.
- Click **Configure**.
- First, locate the  and select **name {name}**.

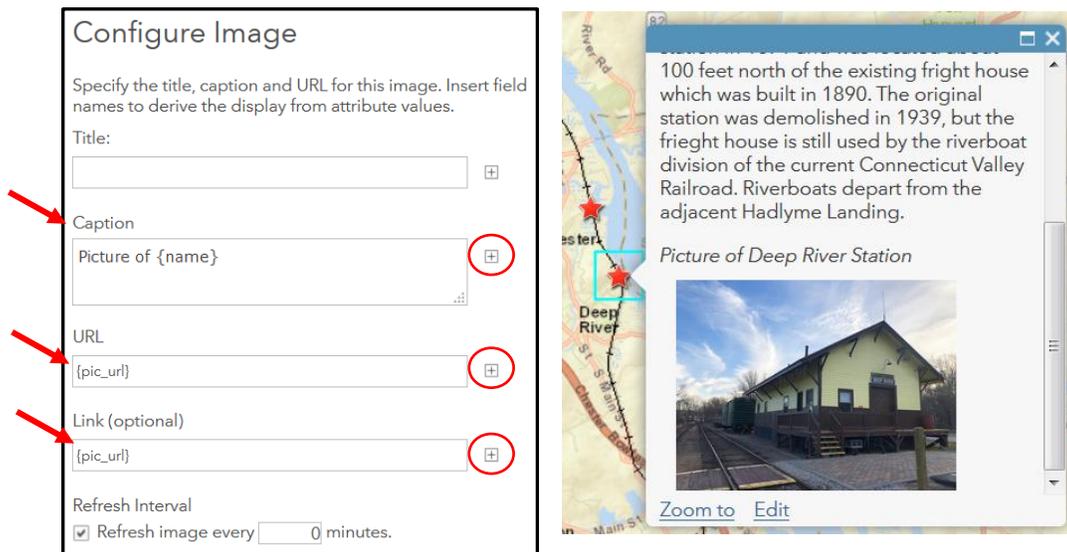
#### Custom Attribute Display

Use the area below to define, format, and lay out the information you want to display.





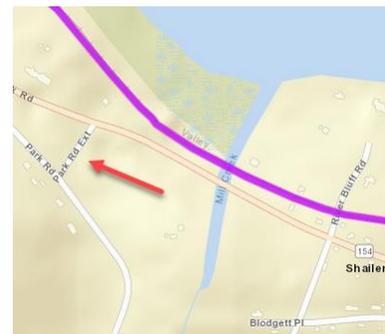
- Open the **Configure Pop-up** window again for the CT Valley Railroad Stations.
- Scroll down the **Configure Pop-up** window and locate **Pop-up Media**.
- Click **ADD** and select **Image**.
- Make the **Title** box blank (delete the "Image 1" text).
- Under **Caption**, type the words **Picture of** and then click **+**.
- Select **name {name}**.
- Next to the **URL** box, click on the **+** select **{pic\_url}**. This is the field in the table that includes the unique URL to each station photo.
- Also add this field to **Link (optional)**. This will link to the full size photograph.
- Click **OK** to close the **Configure Image** window.
- Click **OK** to close the **Configure Pop-up** panel.
- **Save** your map and **test** your pop-up.



## Create a Layer: Add a Map Note

A layer created in ArcGIS Online is called a **Map Note**. A Map Note can include points, lines, map text, and polygons. Map notes are stored in a web map and can also be saved as a layer in AGOL Content and added to other web maps. Multiple geometries can be stored in the same map note. In this step, you will create a new map note layer showing the location of an old station along the CT Valley Railroad.

- Return to your **Haddam, CT** bookmark.
- Zoom in so that you can see **Park RD EXT**, near the southern border of Haddam Meadows State Park where it meets Mill Creek.
- Click **+ Add** and choose **Add Map Notes**.
- Name the layer **Historic Stations** and keep **Map Notes** as the **Template**.



- Click **Create**.
- Click the **Stickpin** icon.
- On the map, find the portion of the **CT Valley Railroad** that runs perpendicular to **Park RD EXT**. To find the exact location, change the basemap to imagery in order to see where the old road and railroad intersect.



- Click once at this location to add a Stickpin point to the map.
- Fill in the pop-up fields as shown below. Be sure to remove the "s" from https://.

Points
✖

Title

**B** *I* U A A | ≡ ≡ ≡ ≡ | ≡ ≡ ≡ ≡

☰ | ✍ ✍ ↶ ↷

Description

Image URL

Image Link URL

DELETE
CHANGE SYMBOL
CLOSE

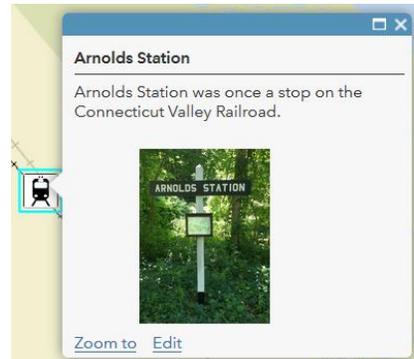
- Click **CHANGE SYMBOL**.
- Change the **Shapes** dropdown to **Transportation**.
- Scroll down and select a **train icon**. Click **OK**.
- Click **CLOSE** to close the pop-up editor.
- Change the **Basemap** back to **Streets**.

Because we are finished adding and editing features for now, we can exit this editing session.

- Click **Details** at the top of the page.

The **Historic Stations** layer is listed in the **Content window**.

- Click on the **train icon** on the map to see the pop-up.
- It includes a picture of the Arnolds Station sign.
- **Click on the photo** to see a larger version in a new tab.



In the future, to make changes or add additional stations to the layer, click the **Edit tool** on the main toolbar, or the **Edit link** in the pop-up.

- Click the **X** button to close the pop-up.
- **Save** your map.

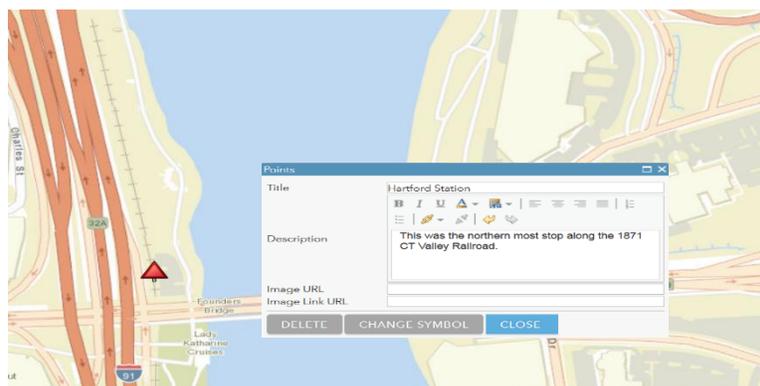
### Optional Extra Credit: Add Additional Train Stations to Map Notes

The story map you will create in the next exercise refers to the start and end of the Connecticut Valley Railroad. It would be helpful to include those points on the map. The line ran from Fenwick in Old Saybrook to Hartford.

- Use the **Search tool** to search for the Bulkley Bridge, Hartford, CT. Once located, pan to the left. Using the **Streets basemap**, locate the tracks just north of the bridge.

The northern terminus of the CT Valley Railroad was a station located in this vicinity. You will add a point to represent the location of the 1871 Hartford Station.

- Click **Edit**.
- Click on the **stickpin** and click once on the map (see image for reference).

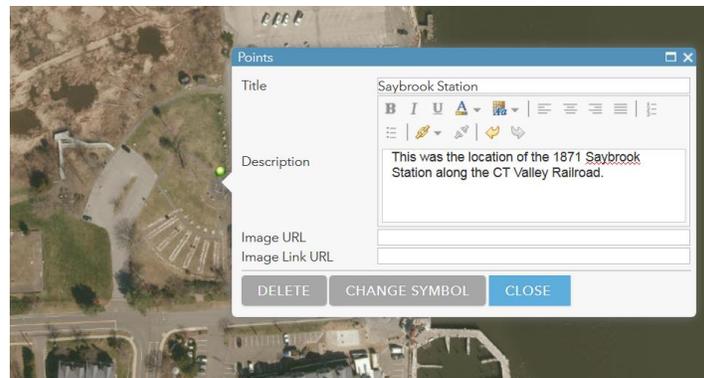


- Add a **Title** and **Description** (use image for reference).
- Click **Change Symbol** and choose a symbol.
- **Close**.
- Use the **Search tool** to search for Saybrook Point, Old Saybrook, CT. Change the **basemap** to **Imagery with Labels**.

The tracks no longer connect to Saybrook Point but the berms still exist. The roundhouse location is now a park. The final stop was actually across South Cove in Fenwick but the tracks have been replaced by a road.



- Using the imagery, locate the remnants of the roundhouse, near the Saybrook Point search result.
- Select the **stickpin** in the edit window and click on the **Saybrook Point Station** location to add a point.
- Add a **Title** and **Description** (see image for reference).



- Click **Change Symbol** and choose a symbol.
- **Close**.
- Return to your **Details** window.
- **Save**.

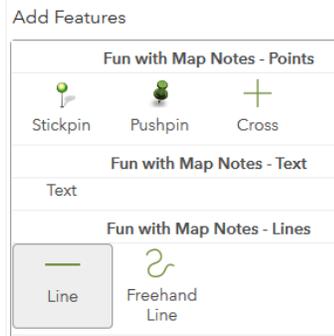
## Optional Extra Credit: Creating Lines and Polygons with Map Notes

You have already created a Map Note that contains points. This section covers creating a line and a polygon in a map note.

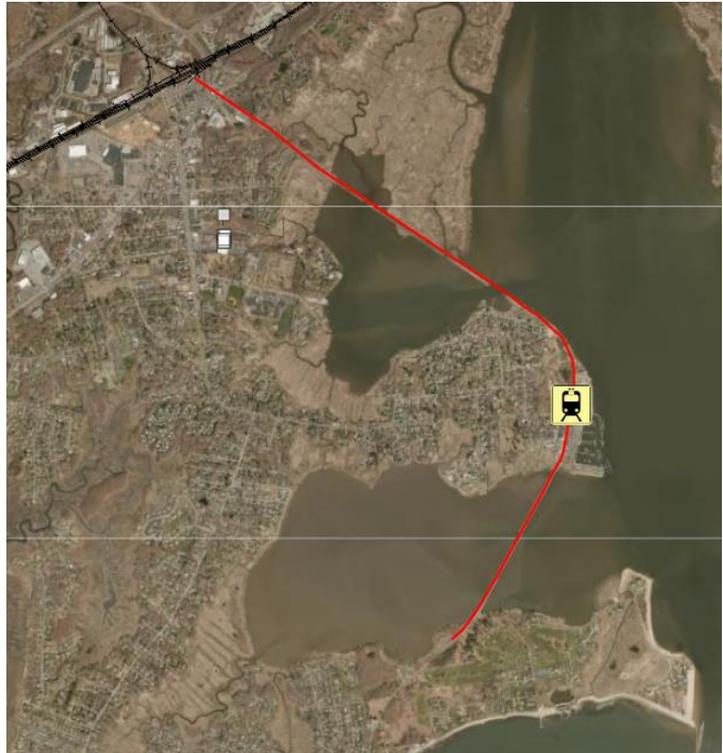
### Create a Line

- Under the **Add** dropdown, select **Add Map Notes**.
- Type "Fun with Map Notes" under **Name**. Click **CREATE**.

- For feature type, choose **Line**.



Using the old berms and roads from the imagery (and the reference image to the right), you will now digitize a line that connects to the current railroad in Old Saybrook and ends in Fenwick via the Saybrook Point Station.



- Start by **left-clicking** approximately where the old railroad lines meets the existing line.



- Continue to **left-click** to place vertices along the line.

**TIP:** Hold the left mouse button and drag to **pan** while digitizing. Use the **scroll wheel** to zoom in and out.

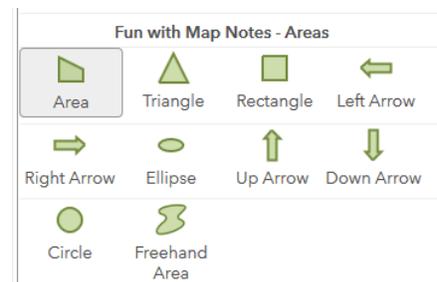
- To finish the line, **double-click**.
- For the **Title** add "Old Saybrook Tracks".
- Under **Description** type "In 1872, the railroad was extended past Old Saybrook point over a bridge into the village of Fenwick."
  
- Click on **CHANGE SYMBOL**.
- Choose a line color and set **Transparency** to 0.
- Make the **Line Width** 2 px.
- Under **Pattern** choose a hashed line.
- Click on **OK** and then **CLOSE**.
  
- Return to your **Details** window.
- **Save**.

### Create a Polygon

- Return to the Haddam bookmark.
- Find the map note you created for **Arnolds Station**.
- Using the imagery, zoom in and locate the large building west of the station and south of the pine trees. This is the UConn Middlesex Extension Office where you are.
- Zoom in to the building.

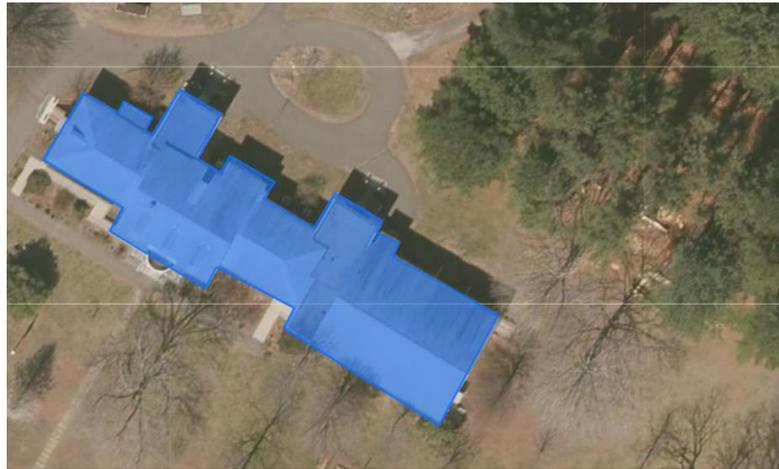


- Click **EDIT**.
- Under feature type choose **Area**.
- **Left-click** on a corner of the building to start the polygon.
- Continue to move the mouse and **left-click** on each corner of the building until the polygon is complete.
- **Double-click** to close the polygon.



- For **Title** add "UConn Middlesex Extension."
- For **Description**, write "This building is the home of the UConn Middlesex Extension and CLEAR."

- If you like, click on **CHANGE SYMBOL** and pick a new **FILL** and **OUTLINE** color, as well as increase the **FILL** transparency.



- Click on **OK** and then **CLOSE**.
- Return to your **Details** window.
- **Save**.

### Optional Extra Credit: Save a Map Note to a Layer

A map note can be saved as a layer and used in multiple ArcGIS Online web maps. The layer will be saved to your AGOL account and accessible through the Content window. You can add any data from your Content catalog to a web map from the Add data button on the main toolbar. In this step, you will save the Historic Stations map note to a layer.

- **Hover** your mouse over **Historic Stations**.
- Click on the **ellipsis** and select **Save Layer**.
- Provide **tags** (keywords) and a short **summary**.
- Click **CREATE ITEM** to save the layer to your **Content**.

Create Item

Title: Historic Stations

Tags: CTVRRR x AGOL workshop x  
Add tag(s)

Summary: A map note showing sites of historic CTVRRR stations.

Save in folder: CaryC

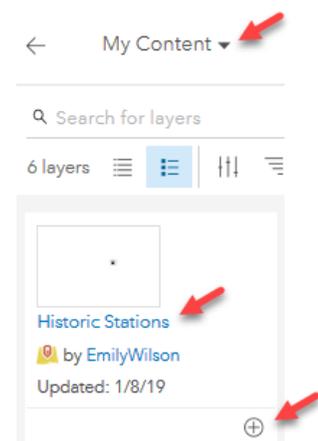
CREATE ITEM CANCEL

Did it work? There are two ways to check.

#### (1) Add as a Layer.

- Click on **+ Add**.
- Select **Search for Layers**.
- Be sure **My Content** is specified at the top.
- Be sure the **Search** box is empty.

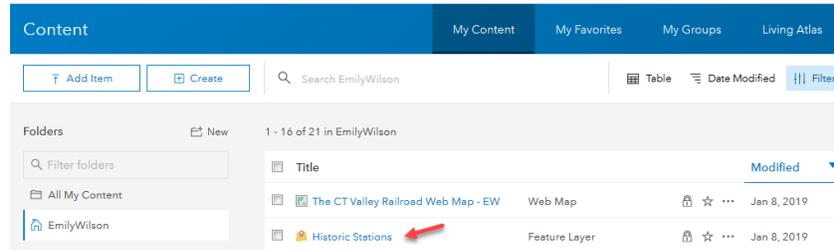
All layers stored in **My Content** are listed below (note: be sure to remove any search terms in order to see all of your layers). **Historic Stations** should be listed at the top.



- If you wanted to add it to your map, you would click **+** BUT it's already there so no need! If you did add it, remove it using the **-**.
- Click **Details** to return to Content.

## (2) Visit My Content.

- **Save** your map. You will be navigating away and you don't want to lose your work!
- Click **ArcGIS** (upper left) and choose **Content**.
- The **Historic Stations** layer is listed along with the Web Map and any other content.



- To return to the web map, click on the title and select **Open in Map Viewer**.



Congratulations, you have completed Exercise 2c. We will pause here for questions and demonstrate what will be coming next in Exercise 2d.

## Exercise 2d: Sharing and Printing an ArcGIS Online Web Map

ArcGIS Online web maps can be shared with members of an ArcGIS Online group or with everyone (the general public). If you have an AGOL Organization account (\$\$), you can also collaborate with other AGOL members by inviting them to have access and edit privileges to your map. The best way to share a finished map with the public is to provide access to the interactive map on the web. There are a few ways to share your finished map:

- Share your web map using a URL
- Embed it on another website using HTML embed code
- ArcGIS Online Web App templates can be applied to simplify your web map's GUI (graphical user interface) or enhance a particular feature of your map.
- Web maps can also be printed or captured using a screenshot.
- Web maps can feed into Story Maps (more on that later!)

### Sharing a Map

AGOL web maps can be shared with the public and/or shared with specific groups. One benefit of an AGOL public web map is that anyone can view it whether or not they have an account.

- Return to your **CT Valley Railroad** web map.
- Click **Share** at the top of the page.
- Click the box next to **Everyone (public)**.
- If an **Update Sharing** window opens, read it. In order for your **Historic Stations** map note layer to appear on the public map, it also needs to be shared.
- Click **UPDATE SHARING** to indicate that you are ok with AGOL sharing that layer with the public.



The different ways to share a PUBLIC map include:

- Copy the **Link** and email it to others.
  - Share through **Facebook**.
  - Share through **Twitter**.
  - **Embed in Website** - copy HTML that can be pasted in a web page source code.
  - **Create a Web App** - a catalog of slick map templates to create an interactive "app" of your map.
- Feel free to email yourself, a classmate, or a colleague a link to your web map. If you're feeling bold, post it to your social media.

### Share

Choose who can view this map.

Your map is currently shared with these people.

Everyone (public)

Members of these groups:

Link to this map

Facebook Twitter

Share current map extent

Embed this map

EMBED IN WEBSITE

CREATE A WEB APP

## Optional: Embed in Website

- If you have closed the **Share** window, click on it again from the main toolbar, then click on **EMBED IN WEBSITE**.

You have some control over what the embedded map will look like and what tools it will include. As you add new or different options, the map preview and the HTML code are updated.

- To embed the map, simply copy and paste the HTML code into the source code of your website.
- Click **BACK**.

Embed in Website

Choose the size of your map. ⓘ

W  X H   Allow responsive sizing

Copy and paste HTML to embed in website.

```
<style>.embed-container {position: relative; padding-bottom: 80%; height: 0; max-width: 100%;}.embed-container iframe,.embed-container
```

Map Options    Add Symbol

Choose options to display on your map.

|   |   |
|---|---|
| <input checked="" type="checkbox"/> Zoom Control        | <input checked="" type="checkbox"/> Scale Bar       |
| <input checked="" type="checkbox"/> Home Button         | <input checked="" type="checkbox"/> Location Search |
| <input checked="" type="checkbox"/> Basemap Selector    | <input checked="" type="checkbox"/> Current Extent  |
| <input checked="" type="radio"/> Basemap Gallery        | <input checked="" type="checkbox"/> Map Details     |
| <input type="radio"/> Basemap Toggle                    | <input type="checkbox"/> Legend                     |
| <input type="checkbox"/> View larger map                |   |
| <input checked="" type="checkbox"/> Disable scroll zoom |   |

Map Preview



## Optional: Web Apps

- In the **Share** window click on **CREATE A WEB APP**. The catalog of Web App templates opens. Scroll through and explore the options.
- Pick a template to explore.
- Hover over it click **SELECT**.
- Select **PREVIEW**.

The map opens in a new tab with the template applied. If you were to actually develop the Web App, there would be more options (allow varying amount depending on the app itself) to customize the “look and feel. The App would have a different link then the web map as they are separate items even though the web app relies on the web map to function.

- **Close** the Web App map preview tab.
- Return to your ArcGIS Online web map.

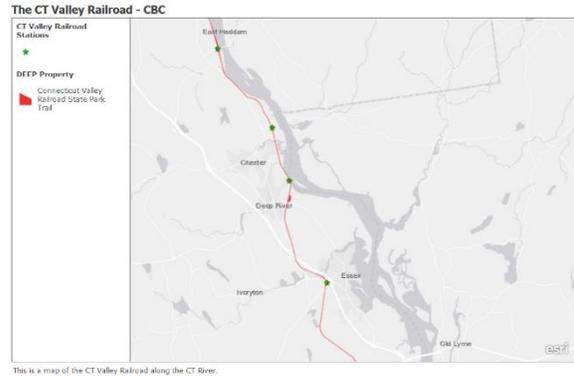
**Tip:** There are many Web Apps that do all sorts of things. Visit the AGOL online docs to learn more: <http://doc.arcgis.com/en/arcgis-online/create-maps/choose-configurable-app.htm>

**Tip:** You may hear about the **Web App Builder on ArcGIS Online**. It is like a template but with many more options for customizing with the ability to create a highly functional map viewer. It requires an AGOL Organization Account.

## Print a Map

Basic printing functionality is built into AGOL.

- Return to your **CT Valley Railroad bookmark**.
- Select **Print** at the top of the map and choose **Map with Legend**.
- A print ready map opens in a new tab in the browser. Use the browser print functions from here.



### Tips: Print Map Format

- The **print** will be the same zoom level as your web map. To change the print, change the web map.
- The print view includes **descriptive text** which comes from the Description field on the **item details** page. The Description field also appears the first time the web map is saved.
- The **source** text is automatically populated from the source layer(s) metadata.
- The **title** is the same as the web map title.
- The **legend** will display any layers turned on in the web map.
- The **scale bar** automatically adjusts units (miles, feet) depending on the zoom level.

**Tip:** Another way to create a map for printing (in AGOL or any web map) is to use a screenshot tool to screengrab the map and legend! Here is a CLEAR blog about screenshots <https://blog.clear.uconn.edu/2017/03/23/just-take-a-screenshot/>

- **Close** the tab with the map for printing.
- Return to your ArcGIS Online web map. **Save** any changes, if necessary.

**CONGRATULATIONS!** You made it to the end of this exercise. We covered a lot! This web map will be used in the next part of the workshop, creating a custom story map.

## Let's Review!

Congratulations on completing Exercise 2! This exercise was designed to show you how to create a web map, customize a web map, familiarize you with the map interface, and show you how to share your map. A number of features and topics were discussed including:

- ✓ **Navigation Tools:** There are several ways to zoom in and pan around the map display area in your web map. These include using your mouse, the zoom tool, the find my location button, and the default extent button.
- ✓ **Map Viewer Tools:** The main toolbar allows you to add data, change a basemap, save, share, print, measure, access bookmarks, and search for locations or map features.
- ✓ **Map Details and Side Panel:** The details heading allows you to access the side panel. Within the side panel is the map layer content, legend, and info about saved maps.

- ✓ **Change Basemap:** You can change your web basemap to street networks, aerial imagery, topographic maps, or simple single color reference maps.
- ✓ **Search:** The Search tool allows you to search and locate an address or place name on the map. You can also type geographic coordinates into it.
- ✓ **Bookmarks:** A bookmark provides a shortcut to a place of interest on your map. The spatial extent and map scale is saved in a bookmark.
- ✓ **Measure:** The measure tool provides an easy way for you to find area, length or location of a feature on your map. Various units of measure are available.
- ✓ **Add Data from ArcGIS Online:** AGOL allows you to search for and add layers from your content, favorites, groups, your organization, or ArcGIS Online content.
- ✓ **Working with Layers in the Content Window:** Once you add data to your map, you can organize the order in which the layers appear, expand sub-layers, turn off layer visibility, and set the zoom scale.
- ✓ **Adding a Service from a REST Endpoint:** When adding spatial data that isn't registered with AGOL, you can use a REST endpoint URL.
- ✓ **Save Your Map:** ArcGIS Online does not save your work automatically, so you must do so periodically.
- ✓ **Explore the DEEP Property Map Service:** CT DEEP Property feature layer includes parcels of land owned and managed by the state of Connecticut for the purpose of preserving open space, protecting natural habitats, and managing wildlife.
- ✓ **Symbolizing Data:** Symbology refers to the colors and symbols used to display features on your map. Within AGOL, the symbology of each layer is fully customizable.
- ✓ **Working with Tables:** Tabular information is the foundation of a GIS. AGOL allows you to select multiple records, show selected records in a separate table, center on selections, show/hide specific columns, custom sort records, and get field statistics.
- ✓ **Filter Your Data:** AGOL allow you to create filters to present a focused view of a feature layer in a map. This is done by creating unique expressions that identify records that meet your expression criteria.
- ✓ **Upload Data to ArcGIS Online:** Data including .CSV, .gpx, and zipped .shp files can be imported directly into your web map. You can customize which attributes and select a drawing style.
- ✓ **Configure a Pop-up:** A pop-up displays descriptive information about a feature on a map. They can be configured to display text, attributes and other media including images, charts and links to external web pages.
- ✓ **Add a Map Note:** A map note is a way to create a new layer within a web map. Map notes are fully customizable, you can set the title, description, URL, and custom symbol.
- ✓ **Save a Map Note to a Layer:** Map notes can be saved as a layer and used in multiple AGOL maps. Map notes are accessible through the AGOL Content window. Saved map notes can be added to a web map using the Add data button.
- ✓ **Sharing Your Map:** AGOL has different sharing options for web maps, including sharing with the public and/or sharing with specific groups. Public web maps can viewed by readers whether they have an AGOL account or not.
- ✓ **Printing Your Map:** AGOL allows you to print a basic map with or without a legend. The zoom level at which the map is drawn on your screen is the extent at which the printout will show.

## This concludes Exercise 2.

## Extra Credit Exercise: ArcGIS Online Groups

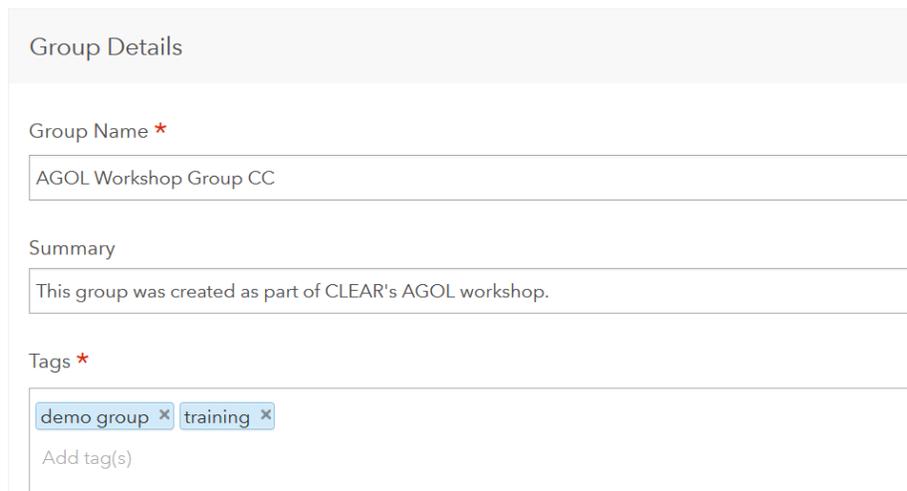
An ArcGIS Online group is a collection of maps, apps, and layers usually related to a specific topic or area of interest. Groups are a way to organize content or to share items with other AGOL users. By default, all groups created using an AGOL public account are public (users can search for and find the group, view content). But as the owner of a group you can require approval (from you) for others to join a group. In this step you will create a new group.

### Create a Group

- If necessary, return to **ArcGIS.com** and sign in.
- From the homepage, click on **Groups**.
- Click on **Create Group**.
- Fill out the **Group Details**.
  - o Name the group **AGOL Workshop Group {your initials}**.
  - o Add a short **summary**.
  - o Add **tags**. This is how people will find your group in a search.

The options at the bottom of the details window control who can join and contribute to the group.

- Leave the default settings for now.



Group Details

Group Name \*

AGOL Workshop Group CC

Summary

This group was created as part of CLEAR's AGOL workshop.

Tags \*

demo group x training x

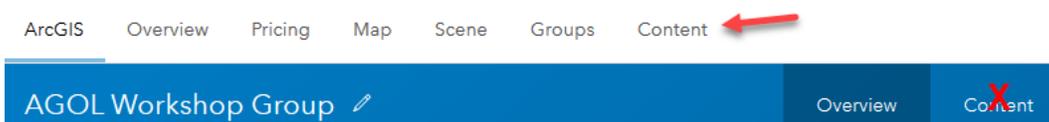
Add tag(s)

- Click **Create Group**.

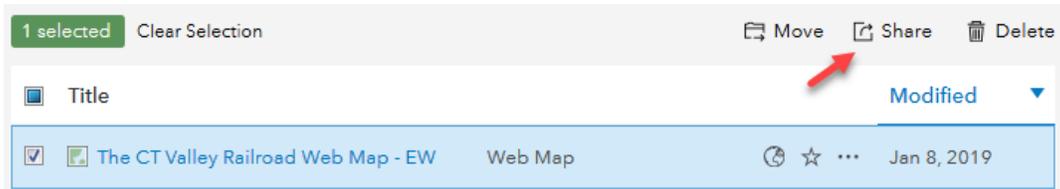
Once the group is created, you are directed to the description page where you will be able to add additional descriptive information, view group content and invite members. This page can also be accessed from the **Groups** heading in ArcGIS Online.

### Adding Content to Your Group

- Click the **Content** button at the top of the ArcGIS Online page.



- Check the box next to your **CT Valley Railroad** web map.
- Click on the **Share** icon.



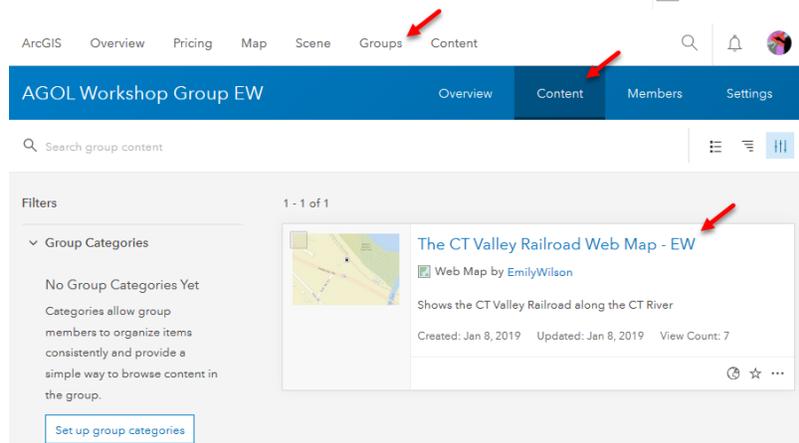
- Check the box next to your **group name**, and click **OK**.
- Return to the **Groups** heading click on the new workshop group.
- Your AGOL web map is now listed in the **Content**.

## Share

Share the item(s) with:

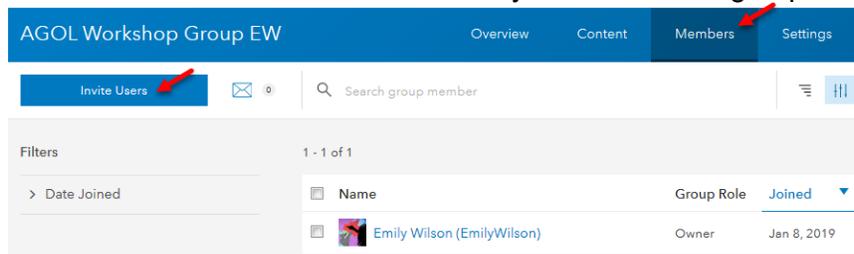
- Everyone (public)
- These groups:

AGOL Workshop Group CC



## Inviting Users to a Group

- Click on the **Members** tab. You are the only member of the group. Let's change that!



- Click **Invite Users**.
- Invite the person sitting next you to join your group, and have them do the same.
- **Type in their user name** then **click the search** magnifying glass.

Enter a name or keyword to find users based on their profile.

| Click a name to invite.     | Click a name to remove.     |
|-----------------------------|-----------------------------|
| <b>Users</b>                | <b>Invitation List</b>      |
| Jesse Rubenstein (rubes234) | Jesse Rubenstein (rubes234) |

- Once found, their name appears in the **Users** column and they can be invited.
- Click on the name to add them to the **Invitation List**.
- Click **Send Invitation** to send the group invitation.

## Joining a Group

- Click on **Groups** again at the very top of the ArcGIS Online page.
- Below the **Groups** heading, find **Invitations** with a red notification icon next to it. Click on it to see your invitation request.
- Click **Join this group** under the group name.
- Now that you have added members to your group and joined another group, take a little time to explore them. Note the main features listed below.
  - o Click the **Overview** tab (upper right). Provides a description of the group.
  - o Click on the **Content** tab. Lists any items saved to the group.
  - o Click on the **Members** tab. Lists all members of the group and their role.

## Let's Review!

Congratulations on completing Exercise 3! This exercise was designed to help you understand what AGOL groups are and how they work. A number of features and topics were discussed including:

- ✓ **Creating a Group:** An AGOL group is a collection of maps, apps, and layers usually related to a specific topic or area of interest. You can create groups as a way to organize content or to share items with other users.
- ✓ **Adding Content to Your Group:** Content must be manually added or shared with a group. You can add data to multiple groups at once.
- ✓ **Inviting Users to Your Group:** In order for users to have access to edit your data they must be in your group. As long as someone has an AGOL account, you can send them an invitation to join your group.
- ✓ **Joining a Group:** In order to edit and collaborate on web maps with others, you must first accept their group invitation. Turn on Delete Protection, to prevent content from being accidentally deleted by you or other group members.

Congratulations! This concludes the ArcGIS Online part of the workshop.



## Part II: Introduction to Story Maps

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## Esri Story Maps

A story map is an online resource that provides readers with an interactive experience which combines web maps, graphics, text, media, and more. Esri makes it easy to create story maps using their ArcGIS Online story map templates. This part of the workshop will focus on using story maps as a way to showcase geographic information in conjunction with graphics and descriptive narrative in a way that is easily understandable and attractive to a wide range of audiences.

A good story map is visually appealing and catchy, but should also be easy to understand and informative. Story maps can be viewed by anyone on the web, free of charge, regardless if they have an AGOL account or not.

## Exercise 3: Building a Map Journal

This exercise leads you through building a Story Map Journal. The Map Journal is one of the most popular story map templates available. It provides the reader with a visual experience (maps, images, videos) and a clickable, scrolling side panel of accompanying narrative text and media.

In this exercise, you will create a Story Map Journal using the AGOL story map builder that tells the story of the Connecticut Valley Railroad using the map you created in the morning exercises. Remnants of the Connecticut Valley Railroad line are located behind the Haddam Extension Center.

## Getting Started

### Workshop Web page

A resource web page was created to support this exercise. It is called **Building Your Story Map Journal** (<http://s.uconn.edu/mapjournal>). Throughout the exercise, it is referred to as the **workshop webpage**. It contains links and content that you will need to build your story map. You will need to visit this page throughout the workshop so please keep it open in a separate browser tab at all times.

### Copy, Paste and Cut

The webpage contains text and links that you will copy in order to paste into the story map in an effort to save a lot of typing time. It is best to copy and paste using the keyboard commands

Copy    Ctrl C

Paste    Ctrl P

Cut    Ctrl X

### A Completed *Connecticut Valley Railroad: Then to Now* Story Map

- Take a peek at the completed version of the story map that you will be creating <http://s.uconn.edu/storymapdemo>. It may be helpful to leave this open in a browser tab while you build your own version so you can use it as a reference.

## Prepare the Web Map

The story map will reference the web map that you created in the earlier exercise. Complete the following steps before you start your Story Map Journal.

- Log into your ArcGIS Online account.
- Open the **CT Valley Railroad Web Map** you created in Exercise 2 (find it in **Contents**) and be sure that:
  - o ONLY the following layers are turned on (checked):
    - **CT Valley Railroad State Park Trail**
    - **Transportation**
  - o The **Basemap** is set to **Streets**.
  - o The **view extent** shows Middletown on the north and Old Saybrook to the south (the length of the CT Valley Railroad State Park Trail).
- **Save** the map.

These settings are now the default for the map that will be used in the story map. Changing these settings in the web map will impact how the map looks in the story map.

## Creating a Map Journal Story Map

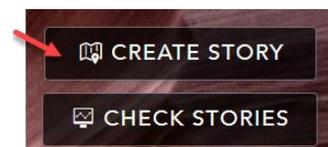
- Navigate to <https://storymaps.arcgis.com>. This will bring you to the “new” ArcGIS StoryMaps website. To navigate to the “classic” Story Maps site, **click on “Looking for classic Story Maps? Click here”** under the green Sign In button. Alternatively, you could type in <https://storymaps-classic.arcgis.com> in the browser window.
- Once you make it to the Story Maps classic site, sign in if necessary.

The navigation contains useful links at the top of the page.

Story Maps ▾    Apps   Gallery   Resources   Blog   My Stories

- Review the overview below. You can click on a heading, but we won't spend much time on these now.
  - o **Apps** – explains each story map template, links to build and learn
  - o **Gallery** – the Esri Story Map gallery is FULL of amazing story maps covering all templates and a wide range of topics
  - o **Resources** – a wide range of resources to aid in every aspect of a story map
  - o **My Stories** – a list of all your stop maps including use statistics and references to maps, images, videos and web pages.
- Click on the **My Stories** heading.
- Select **CREATE STORY**.

**Tip:** There are multiple places in ArcGIS Online to start a story map. One option is from inside the web map. Click **Share > Create a Web App** and then **Build a Story Map**.



- Select **Map Journal**.
- Choose **Side Panel** and then **START**.

- Enter the title “**The Connecticut Valley Railroad: Then to Now**” and click the arrow to continue ➤.

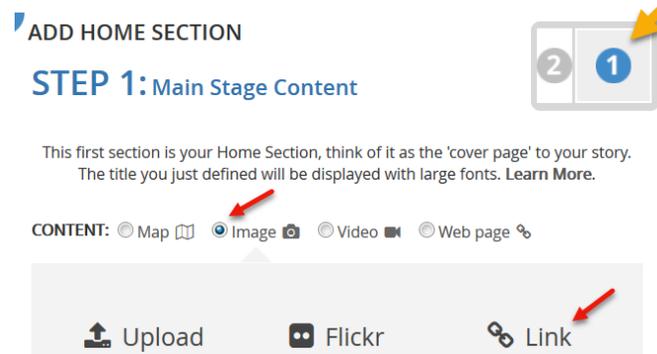
## Map Journal Home Page

The home section is the cover page of the story. It is the first thing a reader sees so it should be appealing, briefly introduce the topic and include authorship.

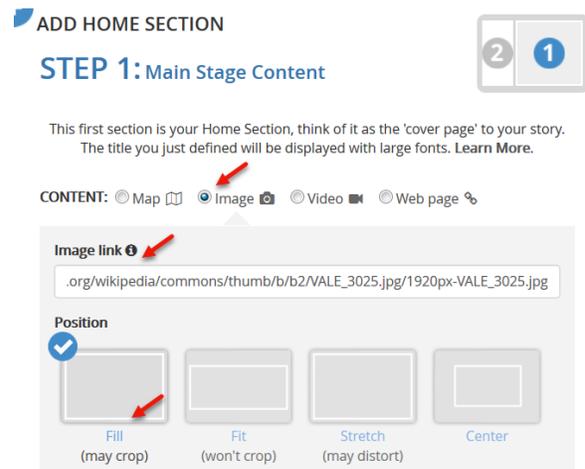
Each Map Journal section consists of the main stage and side panel. The main stage is larger and will contain a map, photo, video, or even a webpage. The side panel contains supporting text and media that tell the story. Story actions are links in the side panel that change the main stage in some way.

### Main Stage Content: Image

- Under **STEP 1: Main Stage Content**, choose the **Image** radio button and then select **Link**.



- Go to the [workshop webpage](#) and find **The Home Section**. Copy the URL for the *train on bridge image*.
- Return to your story map tab and paste the URL under **Image link**.
- Select **Fill** under position. Click **NEXT**.



**Tip: Position** determines how the image will be displayed on the main stage. If you are unsure, experiment with the different options to see what best suits the photo.

The **Alternative Text** box is a description of your media. Best practice is to fill out the Alternative Text.

### Side Panel Content: Text

Pay attention to the helpful graphics and text within the wizards.

## ADD HOME SECTION

### STEP 2: Side Panel Content



This first section is your Home Section, think of it as the 'cover page' to your story. The title you just defined will be displayed with large fonts. [Learn More.](#)

- In the **STEP 2: Side Panel Content** text box, type in authorship information – your **name** and **organization**.

Next, we'll add descriptive text to provide a framework for your story map.

- Return to the **workshop webpage**. It should be open in a different browser tab. Under the Home Section, select and copy the **descriptive text**.
- Return to your story map and paste the text below your name and organization.

#### The Home Section

**Title of your Map Journal:**  
The Connecticut Valley Railroad: Then to Now

**STEP 1: MAIN STAGE CONTENT:**  
train on bridge image URL:  
[https://upload.wikimedia.org/wikipedia/commons/thumb/b/b2/VALE\\_3025.jpg/1920px-VALE\\_3025.jpg](https://upload.wikimedia.org/wikipedia/commons/thumb/b/b2/VALE_3025.jpg/1920px-VALE_3025.jpg)

**STEP 2: SIDE PANEL CONTENT:** (copy & paste text and URLs)

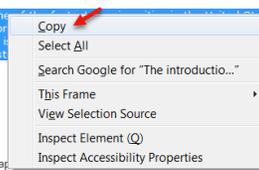
**Add authorship:**  
by {Insert Your Name}, {Organization}

**Descriptive text:**  
The introduction of the Connecticut Valley Railroad in 1871 offered a faster and more efficient way to transport people through the Connecticut River Valley.

During the 19th century, Hartford, Connecticut was one of the fastest growing cities in the United States. Goods traveled daily from the city to seaports on the coast provided a faster alternative for both. Although the line is now used exclusively for tourism and recreation, the Connecticut Valley Railroad remains an important part of Connecticut's history.

**Story Map How To:**  
Keep an eye out for underlined clickable links. Maps are interactive.

**Links: (copy & paste)**  
<https://clear.uconn.edu/geospatial/workshops/storymap>

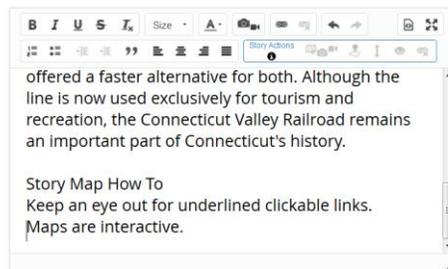


## ADD HOME SECTION

### STEP 2: Side Panel Content



This first section is your Home Section, think of it as the 'cover page' to your story. The title you just defined will be displayed with large fonts. [Learn More.](#)



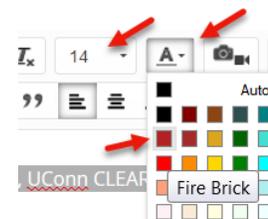
< BACK

ADD CANCEL

## Changing Font Settings

Change the font size and color of the author information to set it apart from the rest of the text.

- **Highlight** your author information.
- Under Size, select **14**.
- With the author text still highlighted, select **A-** and choose **Fire Brick**.
- Highlight the second paragraph (starting with *During the 19<sup>th</sup> century ...*) and change the **font size to 20** if it is not 20 already.
- In the last paragraph, highlight the words **"Story Map How To"** and make them **Fire Brick** and **bold**.



If you make a mistake, you can undo/redo any of your changes by clicking on the left/right arrows in the options.



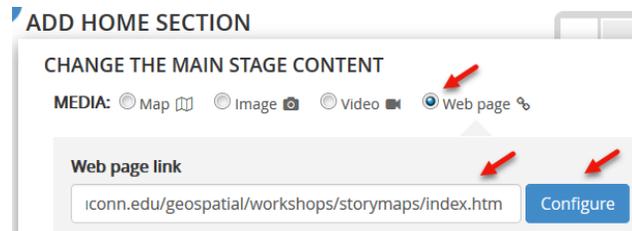
**HTML users!** View and edit the source code of the panel content by clicking on the source icon in the toolbar. This is handy for cleaning things up as well as extending your story map with customizations.



A **story action** is text in the side panel that, when clicked, changes the main stage content in some way. A story action can open an image, video or web page as well as changing map options such as extent, visible layers and opening a pop-up.

### Story Action Main Stage Content: Website

- Find and **highlight** the words “**underlined, clickable link**” (towards the end).
- On the Story Actions toolbar, select the **Change the Main Stage Content** button.
- Select **Web page**.
- Go back to the **workshop webpage** and copy the link for “**underlined, clickable text.**”
- In the story map, paste this URL in the **Web page link** box and select **Configure**.
- Choose **Fit** under **Position** and then **APPLY**.
- Click **ADD** or **SAVE**.



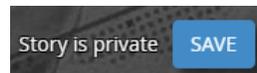
Congratulations, you have a home section!

- Scroll down and click on “**links**” and try out the story action.

### Save

It is a good idea to periodically save your story map as it does not happen automatically.

- Click **SAVE** in the upper right.



Save may be blocked by a green banner saying “Can we ask you something?” Click the **X** to close it.

## Map Journal Page 2: The Need for Efficient Transportation

- Click **ADD SECTION** at the bottom left of the page.



ADD SECTION

### Main Stage Content: Image (again)

- Title this section “**The Need for Efficient Transportation**”.

- Choose **Image** and select **Link**.
- Return to the [workshop webpage](#) and scroll and find the Map Journal Page 2 heading. Copy the URL for the image of **historic map of Hartford**.
- Return to your story map and paste the URL in the **Image link** box.
- Choose **Fit** and then select **NEXT**.

#### Side Panel Content: Text (again)

- On the [workshop webpage](#), copy the **Descriptive text** and paste it into the story map's side panel content box.

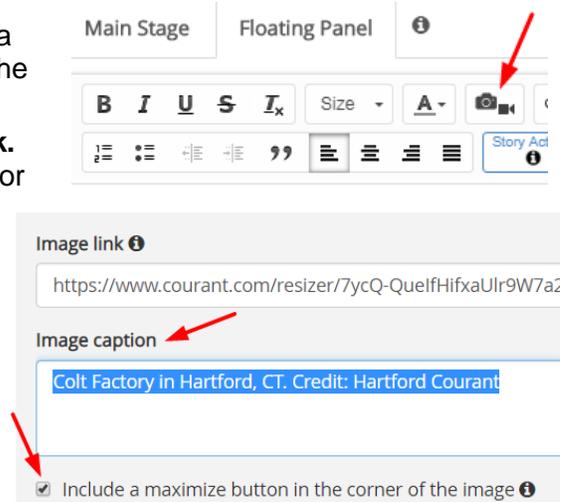
#### Story Action Main Stage Content: Image

- Find and **highlight** the words “**steam engine trains**” (second paragraph).
- Add a **story action** for an **image**. You did this in the previous section, but as a reminder, click the **story actions – main stage content** button  and select **image**.
- On the [workshop webpage](#), copy the link for “**steam engine trains**” and paste it in the **Image link** box in the story map.
- Choose **Fit** and **Apply**.

#### Side Panel Content: Add Media

Photos, videos and webpages can also be embedded in the side panel. Let's try it!

- Move the cursor to the end of text box, to a new line below the descriptive text. Click the **Insert media** button .
- **Image** is selected by default. Choose **Link**.
- On the [workshop webpage](#), copy the link for **Colt Factory** and paste it into the **Image link** box.
- In the **Image caption** box type “**Colt Factory in Hartford, CT. Credit: Hartford Courant.**”
- Select the check box next to **Include a maximize button in the corner of the image**.
- Click **APPLY** and then **ADD**.



Congratulations, you have a second section!

- **Save** the story map. Remember the save button is on the top right of the page.

Take a minute to scroll through your new section. Be sure to test out your new features including:

- The “**steam engine trains**” text, a main stage action that will open a photograph in the main stage of the story map
- The **Colt Factory photo** – a photograph embedded in the side panel. Clicking on it will make it larger.



When adding an image to your story map, make sure to follow copyright laws and give the photographer or source credit in the caption. Some photographers require permission before using their work. When in doubt, contact the owner and obtain written permission to use their content.

## Map Journal Page 3: The Connecticut Valley Railroad

You're getting the hang of it now and should have a good idea of how to add photographs to the main stage, side panel and story map actions. This section will include more photographs and text, but also a main stage action linked to a web map. Let's take a look.

- Select **ADD SECTION** at the bottom left of the page.
- Title this section "**The Connecticut Valley Railroad**".



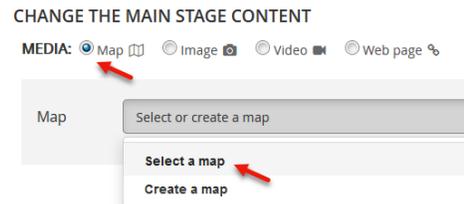
### Main Stage Content: Image (again)

- Add an image to the main stage:
  - o Click **Image** and **Link**.
  - o On the [workshop webpage](#), copy the link for the **image of a Valley Railroad Company train car**.
  - o Paste the link in the **Image Link** box in your story map.
  - o Choose **Fill**.
  - o Click **Next**.
- Return to the [workshop webpage](#) and copy and paste the **Descriptive Text** from the webpage into the side panel content window of your story map.

### Story Action Main Stage Content: Map

So far you have added a webpage and an image by way of a story action to the main stage of your Map Journal. Next we'll add an interactive map to the main stage using a story action.

- In the side panel, find and highlight the words "**Hartford to Old Saybrook**" (first sentence).
- Click the **story actions – main stage content** button  and choose **Map**.
- In the **Map** dropdown, choose **Select a map**.
- Find your web map, likely titled **The CT Valley Railroad Web Map – Initials** that you created this morning.



There are a lot of handy options for customizing your map within the story map:

- o **Location** - sets the extent of the map. The default is the extent of the web map.
- o **Content** – select which layers in the web map or visible (turned on or off). The default mimics the web map.
- o **Pop-up** – choose a pop-up to be open.
- o **Overview Map** – check to display an overview map.
- o **Legend** – check to display a legend.

- **Address, Place, and Feature Finder** – check to display a search for locations and features.
- **Alternative Text** is a description of your media for visually impaired readers.

### Map Location

Choose the extent of the map that is visible.

- Next to **Location**, click **Custom Configuration**.
- Change the **zoom** so that Hartford and Old Saybrook are both visible.
- **Save Map Location**.

### Map Content

Choose which layers in the web map are visible.

- Next to **Content**, click **Custom configuration**.
- Check on **Historic Stations** ONLY IF you added the Hartford and Old Saybrook Stations in the extra credit section earlier.
- Uncheck **CT Valley Railroad State Park Trail**.
- **Save Map Content** and **APPLY**.
- Click **ADD** to add the section to the Map Journal.

**MAP CONTENT**

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

- Historic Stations
- CT Valley Railroad Stations
- CT Valley Railroad State Park Trail
- Transportation
- CT DEEP Properties
- Spring 2016 Aerial

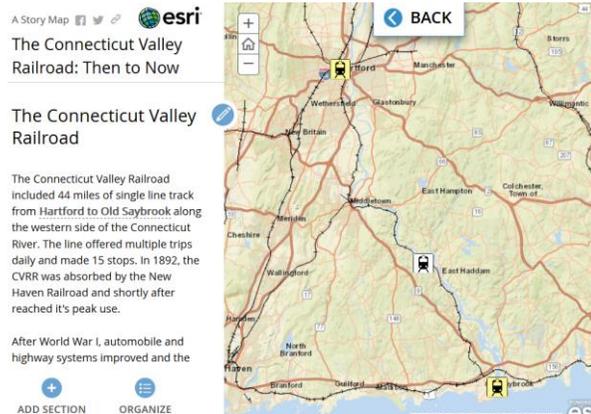
[SAVE MAP CONTENT](#)

**Tip:** For some reason, **sometimes story actions are incorrectly placed at the beginning of the page** (figure A). To remedy this, select the new story action link (figure B) and cut (use the ctrl-x command). Select the text where the link should exist (figure C) and paste (ctrl-v). The story action link should now exist in the proper location over the proper text (figure D)

The figure consists of four panels, A, B, C, and D, each showing a document editor window titled "The Connecticut Valley Railroad".

- Panel A:** Shows the document text starting with "Hartford to Old Saybrook". A red arrow points to a story action link (a blue box with a red underline) that is positioned at the beginning of the text, before the word "Hartford".
- Panel B:** Shows the same document, but the story action link has been moved to the end of the text, after the word "Saybrook".
- Panel C:** Shows the document text starting with "The Connecticut Valley Railroad". A story action link is positioned at the beginning of the text, before the word "The".
- Panel D:** Shows the same document, but the story action link has been moved to the end of the text, after the word "Saybrook".

- Click on the **Hartford to Old Saybrook** link and check out the map.



### Story Action Main Stage Content: Image (again)

- Click the **Edit Section** icon next to the section title
- Find and highlight “**15 stops**” (first paragraph).
- Use the **story actions – main stage content** button  to make the **15 stops** link to an image. Find the link on [workshop webpage](#) called *15 stops*.
- Select **Fit** as the image position and **APPLY** your changes.
- **SAVE** your section edits.
- **SAVE** your story map.
- Click through the section to see the new updates to your story map.



## Map Journal Page 4: Today’s Valley Railroad Company

So far you have added photographs, web pages, and a web map to your mainstage content. Other options include adding photos or images from your computer and adding online videos.

### Main Stage Content: Add a Video

- Click **ADD SECTION**.
- Title this section “**Today’s Valley Railroad Company**”.
- Choose **Video** and then **YouTube**.
- On the [workshop webpage](#), copy the link for the **YouTube video of the Valley Railroad**.
- Paste the link in the box next to YouTube.
- Click **Check**.
- If it looks good, choose **Select this video**.
- Choose **Fill** and then select **NEXT**.



### Side Panel Content: Text (again)

- Copy the **Descriptive Text** from the [workshop webpage](#) for page 4 and paste into the side panel text box.

### Story Action Main Stage Content: Map (again)

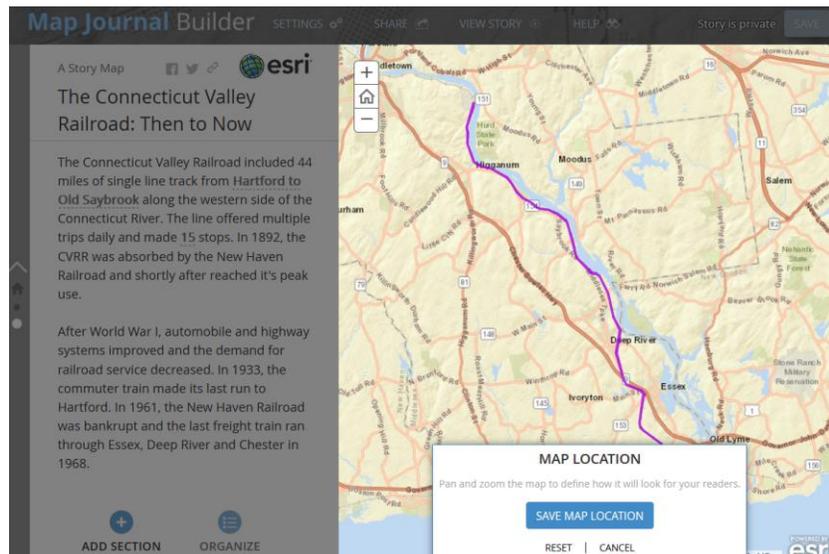
- Find and highlight the words “**State Park Trail**” (second sentence) and create a **story action**  for a map.
- Select your AGOL map from the list.
- Next to **Content**, select **Custom configuration** and turn off ALL layers except for **CT Valley Railroad State Park Trail**.
- **SAVE MAP CONTENT.**



The layers you have just turned off only apply to this story action, and will not impact the layers you have turned on in your previous or future story actions. The same applies for Location settings.

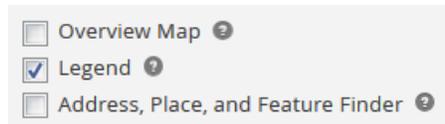
**SAVE MAP CONTENT**

- Next to **Location**, choose **Custom configuration**.
- Zoom in so that the state park trail is visible.
- **SAVE MAP LOCATION.**



### Map Legend

- Check the **Legend** box and then **APPLY**.



### Story Action Main Stage Content: Website (again)

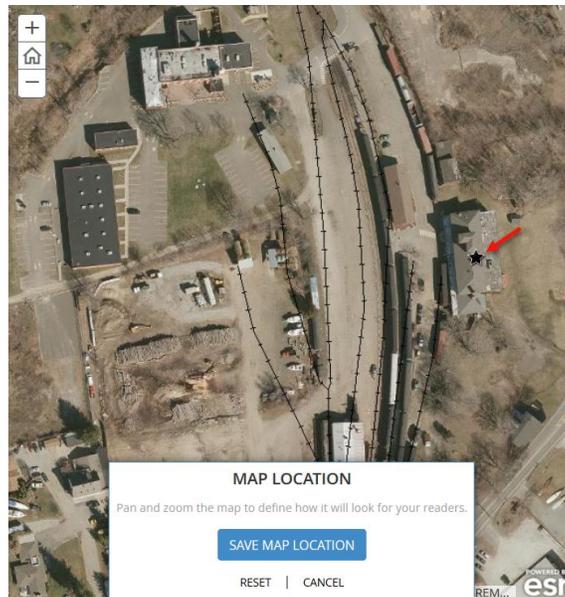
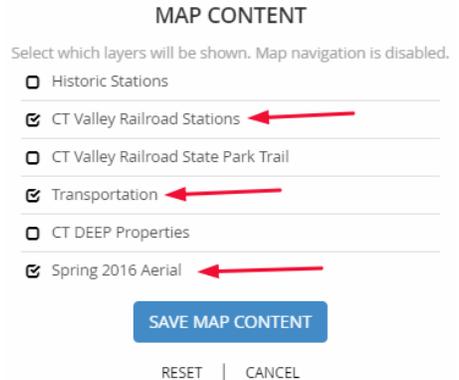
- In the same sentence highlight the words “**CT DEEP**”.
- Insert a story action for a **Webpage**, using the link called “**CT DEEP**” on the [workshop webpage](#).
- Click **Configure** and **Fit**.
- **APPLY.**

**Tip:** At any point, you can **Add** or **Save** the section to view it in your story map. Use the Edit Section icon to open the section for editing.



### Story Action Main Stage Content: Map (again)

- Find and highlight the words “**Essex Station**” in the bulleted list (not in the paragraph text) and create a **story action**   for a **map**.
- Select your web map.
- Under **Content**, click **Custom configuration**.
- Turn on
  - o **CT Valley Railroad Stations**
  - o **Transportation**, and
  - o **Spring 2016 Aerial**.
- Turn off all other layers.
- **SAVE MAP CONTENT**
- Under **Location**, choose **Custom Configuration**.
- Zoom into the **Essex Train Station** (southernmost station) making sure that you can see the station and tracks on the aerial imagery.
- **SAVE MAP LOCATION**.



### Pop-up

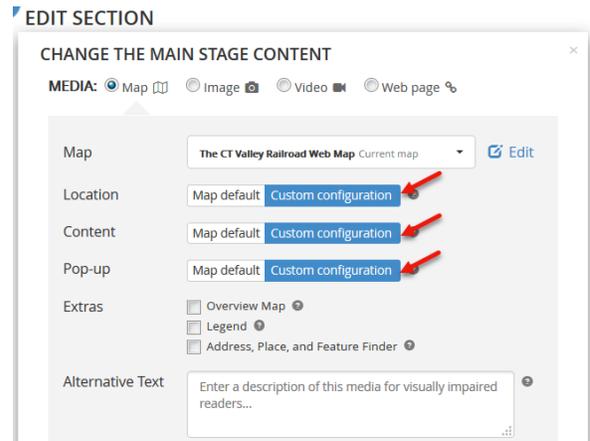
- Under **Pop-up**, click **Custom configuration**.
- Click on the **train station icon** to open the pop-up.
- **SAVE THE POP-UP CONFIGURATION**. Saving it means that the pop-up will be open when the link is clicked.
- **APPLY** changes.

- **Repeat** the steps for each of the other **three stations** (south to north - Deep River Station, Chester Station and Goodspeed Station) in the bulleted list. Each time, be sure to
  - o reset the **Location** so that the station is visible.
  - o check the **Content** and be sure that the three layers are on (CT Valley Railroad Stations, Transportation and Spring 2016 Aerial).
  - o set the **Pop-up** to open.

For each link, all three options need **Custom configuration** as they are different from the map default. Remember the Map default for **Location** is Middletown to Old Saybrook. The Map default for **Content** is the State Park Trail and Transportation layers and the Map default for **Pop-up** is “not open.”

- **SAVE** your changes, and then **SAVE** your story map.

Take a look at the section and all the actions you added. Make any necessary fixes.

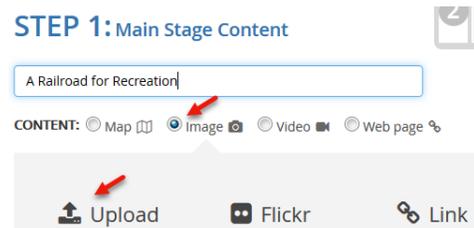


## Map Journal Page 5: A Railroad for Recreation

So far you have added images using URL links which means those photos are already online. What if you have a personal photo that you would like to add to the story map? One option is to upload it to Flickr. Another option is to upload it to your ArcGIS Online Account.

### Adding Images from a Local Drive

- Return to the [workshop webpage](#) and locate page 5. Click on the **family hiking image (download)** link and **save** the photo to your **C://AGOLTraining** folder on your computer.
- In your story map, **ADD SECTION**.
- Title this section “**A Railroad for Recreation**”.
- Choose **Image** and select **Upload**.
- Click on **browse for an image** and choose the downloaded file that is on your computer.
- Choose **Fill** and then click **NEXT**.



### Side Panel Content: Text (again)

- Copy the text from the [workshop webpage](#) for page 5 and paste into the side panel text box.

### Story Action Main Stage: Map (again)

- Find and highlight the “**Arnolds Station**” text.
- Create a **story action**   for a **map**.
- Select your map and change the settings so that

- **Content: Historic Stations, CT Valley Railroad State Park Trail, Transportation and Spring 2016 Aerial.**
- **Location:** Zoomed to the **Arnolds Station.**
- **Popup:** Arnolds Station pop-up is open.
- **APPLY**

#### Story Action Main Stage: Map (again)

- Find and highlight the “**Haddam Meadows State Park**” text (third paragraph).
- Create a **story action**  for a **map**.
- Select your map and change the settings so that
  - **Content: Transportation and CT DEEP Properties.**
  - **Location:** Zoomed to the **Haddam Meadows State Park.**
  - **Popup:** Haddam Meadows pop-up is open.
- **APPLY**

#### Story Action Main Stage: Map (again)

- Find and highlight the “**open space**” text (third paragraph).
- Create a **story action**  for a **map**.
- Select your map and change the settings so that
  - **Content: Transportation and CT DEEP Properties.**
  - **Location:** Zoom out from **Haddam Meadows State Park** to show the larger region.
  - **Popup:** no pop-up open.
  - **Extras: Legend** is checked.
- **APPLY**
- **SAVE** section.
- **SAVE** the story map.

## Map Journal Page 6: A Lasting Legacy

The final section of a Map Journal story map should bring the story to a conclusion. This section, or a following one, should also contain sources used in the story map, external links, information about the author and anything else.

- **ADD SECTION.**
- Title this section “**A Lasting Legacy**”.

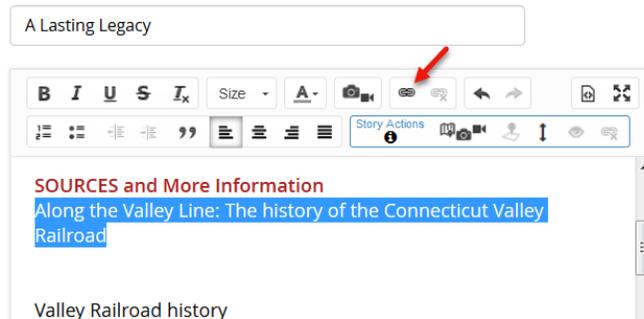
#### Main Stage Content: Image (again)

- Choose **Image**. Select the **Link** option.
- Copy and paste the **Trees along a railway image** link from the [workshop webpage](#).
- Choose **Fill** and **NEXT**.
- Copy and paste the **Descriptive Text** from [workshop webpage](#) into the **Side Panel Content** text box. This time, choose ALL of the text, including links, starting with **The Connecticut Valley Railroad was once ...** and ending with the **CLEAR link**.
- Highlight the words “**SOURCES and More Information**” and change the color to **Fire Brick** and **bold**.

## Adding External Links

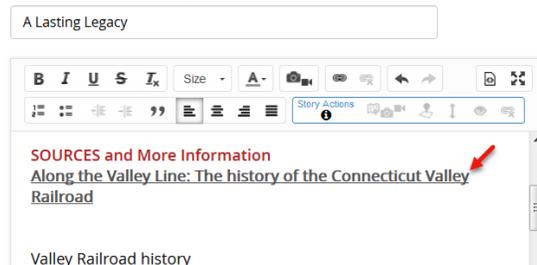
It is best to save external links for the end of a story map so that you don't lose your readers to other web pages early on. The text and URLs for external sites are now in the side panel (thanks to the copy and paste) but need to be cleaned up.

- In the side panel text, under **SOURCES and More Information**, highlight the first link **https://www.amazon.com/Along-Valley ...** and cut (CTRL X).
- Highlight the words "**Along the Valley Line: The History of the Connecticut Valley Railroad**" and click the **Link** icon .



- **Paste** the URL and click **OK**.

The text is now an external link that will open in a new browser window.

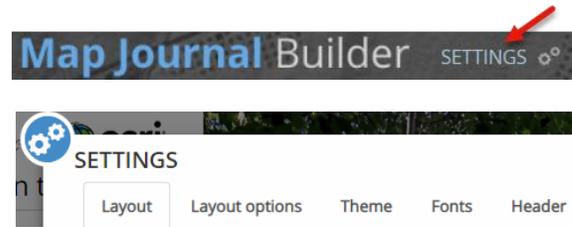


- Repeat these steps for all of the external links listed under the **SOURCES and More Information** heading (ending with "**History of Hartford**").
  - o Select the link text and cut.
  - o Select the text to be linked and click the **Link** icon.
  - o Paste the link.
- Change the **Author Information** text to **Fire Brick**.
- Insert your name in the text.
- Select the link for **CLEAR** and cut.
- Select the text "**Center for Land Use Education and Research (CLEAR)**" and use the **Link** button to create an external link.
- Click **ADD** (first time) or **SAVE**.
- **SAVE** your story map.

## Reference & Extra Credit: Explore Story Map Settings

The Story Map Settings apply to the story map as a whole and typically impact the visual properties of the story map, including the layout, header and color scheme.

- Select **SETTINGS** at the top of the page.
- **Explore** any of the available settings. Experiment with different options – don't worry, you can always change them back!



**Layout** – Option for **Side Panel** or **Floating Panel**.

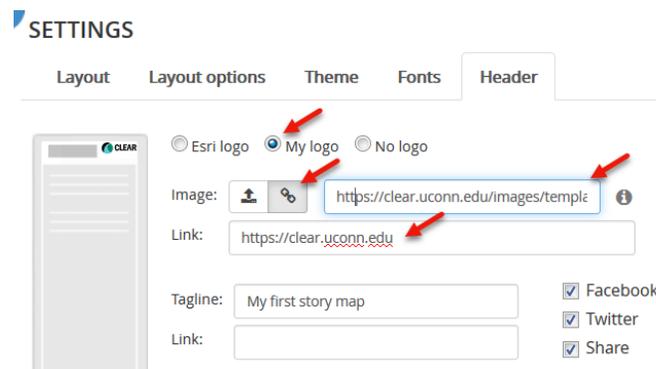
**Layout options** – select whether the side panel is on the right or left and how big it is (small, medium, large).

**Theme** – choose from several color themes. For more color control, see the **Customizing with CSS Extra Credit Section**.

**Fonts** - set the default font for section titles and section content.

**Header** – choose a **logo**, a **tagline** and a **link**. Allow (or not) to link to the story map from Facebook, Twitter or a share link. The following steps will allow you to change the logo.

- Click **My logo**.
- Click on the **Link to logo** icon.
- In the URL box add a link to a logo. Optionally select the CLEAR logo by copying the link from the [workshop webpage](https://clear.uconn.edu/workshop/webpage) or type the following <https://clear.uconn.edu/images/templates/clear-logo.png>.



- Under **Link**, type in the CLEAR home page URL: <https://clear.uconn.edu/>
- Create a short **Tagline** and make the **Link** box blank.
- To save all your layout settings select **APPLY**.
- **SAVE** the story map.
- **Preview** the story map outside of the Map Journal Builder by clicking **VIEW STORY** at the top of the page.



## Reference & Extra Credit: Organizing Story Map Sections

Often while building a story map, sections are edited, moved, rearranged and even deleted.

- Return to the **Map Journal Builder**.
- Select **ORGANIZE** at the bottom of the side panel.



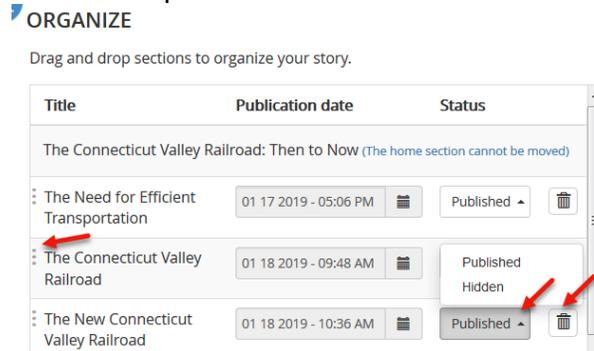
### Reorder Sections

- Click on the **ellipsis** next to a section and drag it up or down on the list.
- Drag it back to where it started.

### Hide a Section

Hide a section if it's not ready for view or you aren't quite ready to delete it.

- Select the **Published** dropdown and select **Hidden**.



When **Hidden**, the section is not visible to others when viewing the story map.

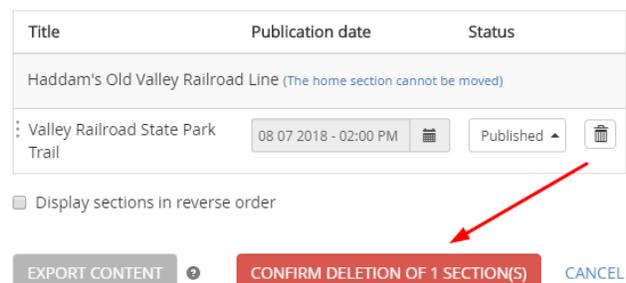
- Change all of your sections to **Published**.

### Delete a Section

**FOR REFERENCE ONLY. DO NOT DO THIS!**

- Select the trash can icon next to the section to be deleted.
- **IF** you were to **CONFIRM DELETION**, the section would be permanently removed from the story map.

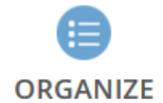
**DO NOT DO THIS.**



- Click **CANCEL** to close the **Organize** window if it is still open.

## Export Content

Export content provides an easy to read, printable version of the story map. Story maps take many iterations and edits to get right. Export content allows you to easily share text with others during the editing process and keeps track of actions.



- Within **Organize**, select **EXPORT CONTENT**.
- A new tab contains a printable, readable and flat version of the story map. Take a look.
- Return to the **Map Journal Builder** tab.
- Click **CANCEL** to close the **Organize** window if it still open.

EXPORT CONTENT

## Sharing a Story Map

A story map is set to private by default. It can only be viewed when you are logged in. Changing the setting to public mean others can view it.

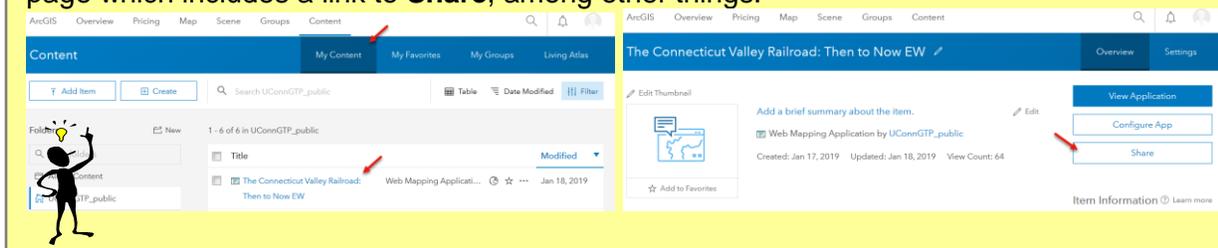
- Select **SHARE** at the top of the page.
- Choose **Public**.
- Similar to the ArcGIS Online web map earlier, the story map can now be shared by:
  - o A **link**. Click the copy icon  to copy the link and paste it in an email or elsewhere.
  - o **Facebook** or **twitter**
  - o **Embedded in a web page**
- Select **CLOSE**.

SHARE 

**SAVE** the story map. Notice "**Story is public**" next to the save button.

Story is public **SAVE**

Remember that the Story Map is saved as a **Web Mapping Application** in the **My Content** section of ArcGIS Online. Clicking on the Story Map in My Content opens the **Description** page which includes a link to **Share**, among other things.



## My Stories

My Stories is a web page that lists all of the story maps that belong to the ArcGIS Online account. For each story, any maps, images, videos, etc. that it uses are listed, as well as any errors or issues.

- In a **new tab** in the web browser, type <https://storymaps.arcgis.com/> and click on **My Stories** at the top.
- Log in if necessary.
- Select your railroad Map Journal, likely called “**The Connecticut Valley Railroad: Then to Now – initials.**”

The screenshot shows the ArcGIS Online interface for a Map Journal. The title is "The Connecticut Valley Railroad: Then to Now EW". It is a "Map Journal" that is "Public" and was "Modified January 18, 2019" with "61 views". There is a "Summary" section with the text "No summary, click to add one." Below the summary are buttons for "EDIT STORY", "VIEW STORY", and "DELETE", along with social media sharing icons for Facebook and Twitter. A "No issues found" message is displayed in a green box. A table lists the maps used in the story map:

| Status | Name                           | Shared | Section    |  |
|--------|--------------------------------|--------|------------|--|
| ✓      | The CT Valley Railroad Web Map |        | 3*, 4*, 5* |  |

- Explore and look for
  - o **Date** it was created.
  - o How many **views** (so far)
  - o That the story map is **public**. The setting can be changed here.
  - o How many **sections**
  - o The **web map(s)** used.
  - o If there are **issues**.
  - o Which images are referenced including their links and story map section.
  - o Which videos are referenced including their links and story map section.
  - o Which webpages are referenced including their links and story map section.
- The following buttons launch an action outside of My Stories.



- o **Edit Story** – open the story map in the Map Journal Builder.
  - o **View Story** – open the story map in a browser
  - o **Delete** – delete the story map. **DO NOT DO THIS!**
  - o **Link, Facebook and Twitter** all share or post the story map.
- Click **View Story** and enjoy the story map you created!

Congratulations. You have created a Story Map Journal!

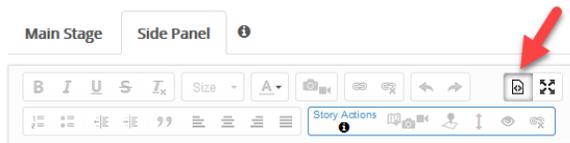
## Reference: Story Map Tips and Tricks

### Steps for creating a story map journal:

1. Mockup
2. Assemble media (photos, videos, links, docs, etc.)
3. Assemble geographic data
4. Create ArcGIS Online map(s)
5. Publish AGOL maps including symbology and popups
6. Create Story Map
7. Add media
8. Use Actions
9. {Customize}
10. Review, Edit, Repeat
11. Publish!

### Story Map Journal Tips

- Pay attention to pop-ups
- If possible, keep the Journal under 15 pages
- Keep it simple – only what is MOST important
- Don't create external links that move reader out of your story map until the end
- Claim authorship
- Use the HTML code editor to “clean up” if things are not working as expected



- Keep the number of ArcGIS Online maps to a minimum (to maintain zoom between pages)
- Make the graphics transparent pngs
- If the legend is critical, make it a graphic
- Use My Stories <http://storymaps.arcgis.com>
- When adding content via a link, ONLY use secure links (https, as opposed to http).

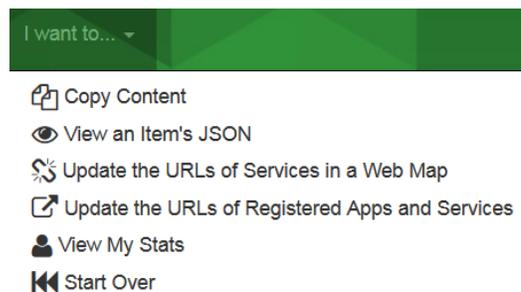
### ArcGIS Online Assistant

The ArcGIS Online Assistant is a swiss army knife for your ArcGIS online accounts (I'm not making this up! It does a few basic, but critical tasks.

<https://aqo-assistant.esri.com/>

Once logged in, look for

- **Copy Content** – copy maps, story maps and more between accounts (yours or others, as long as they log in)
- **Update the URLs of Services in a Web Map** – If a service link changed, instead of re-doing everything, log in here to update the URL.



## Extra Credit: Customize the Story Map Journal with CSS

CSS stands for Cascading Style Sheets which describe how html elements are displayed. Yes, it's code, but it's straightforward and can save a lot of time. Essentially, each CSS class has a name (here it is *heading*) and defining characteristics (such as *color* and *font weight*). Once defined, the class is assigned to existing text and those characteristics are applied.

```
.heading {
  color: firebrick;
  font-weight: bold;
}
```

To learn more about CSS, visit <https://www.w3schools.com/css/> or any other resource.

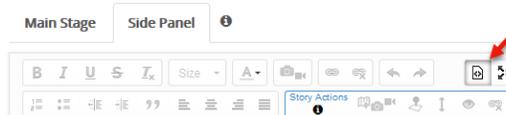
- First, copy the CSS from the end of the [workshop webpage](#). It looks like this:

```
<style>
.heading {
  color: firebrick;
  font-weight: bold;
}

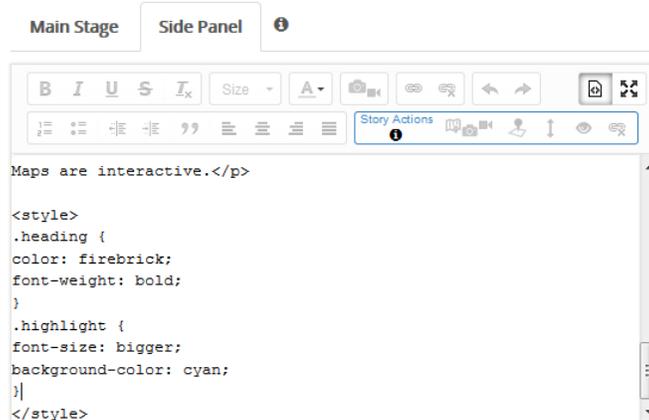
.highlight{
  font-size: bigger;
  background-color: cyan;
}
</style>
```

It is good practice to keep all of the CSS styles on the same page of the story map. Scattering them on different pages can become confusing and cause conflicts.

- In the **Map Journal Builder**, navigate to the first (home) page and click  **Edit Section**.
- Click the **Source** button to see the code behind the page.



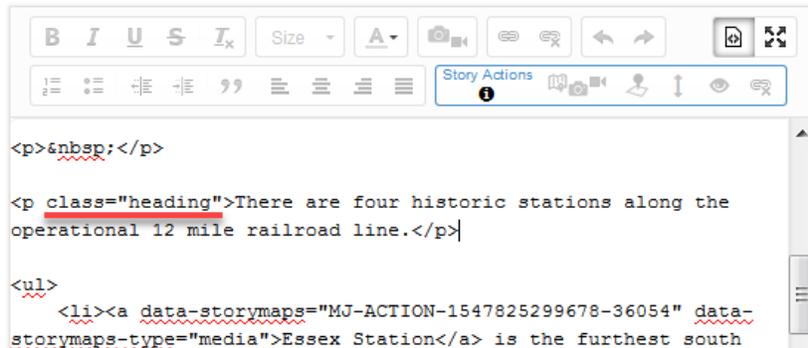
- Scroll to the end and **paste** the code you copied from the workshop webpage.



- **Save**

Now, these two classes can be applied to any section of the story map. Here is an example of how.

- Go to page 4 (Today's Valley Railroad Company) and **Edit Section**.
- Click the **Source** button.
- Locate the text "*There are four historic stations along the operational 12 mile railroad line.*"
- Next to the `<p , type class="heading" >`. Pay close attention to the punctuation. As with all coding, punctuation matters!



```
<p>&nbsp;</p>

<p class="heading">There are four historic stations along the
operational 12 mile railroad line.</p>

<ul>
  <li><a data-storymaps="MJ-ACTION-1547825299678-36054" data-
storymaps-type="media">Essex Station</a> is the furthest south
```

The characteristics from the *heading* class are now applied to all of the text within the `<p> </p>` html tag. Cool! (Believe me, while you look at a black and white print, that the heading is actually firebrick red!)

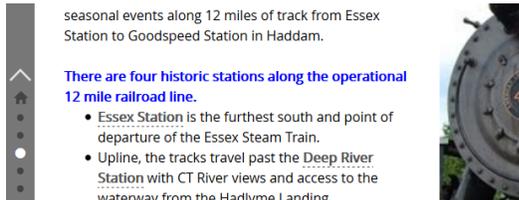
from Essex Station to Goodspeed Station in Haddam.

**There are four historic stations along the operational 12 mile railroad line.**

- Essex Station is the furthest south and point of departure of the Essex Steam Train.
- Upline, the tracks travel past the Deep River Station with CT River views and access to the waterway from the Hadlyme Landing.
- Chester Station follows and currently serves as a storage facility for track equipment.
- The final stop along the railway is Goodspeed Station in Haddam. Service was extended to this station in 2015.

The class can be applied many times within the story map. Changing the heading characteristics in the css code on the home section will change the look of any instance referencing this class.

- To test it, go back to the **CSS** that you added to the **home section**.
- Change firebrick to another **color**, like blue.
- Click **Save**.
- Return to page 4 and notice that the text is now blue.



CSS is a great way to ensure consistency throughout the story map. It is used for the same reason on websites.

- Try applying the highlight style to some text.  
`<p class="highlight">`



There are so much options with CSS. Refer to Esri story map blogs to further use CSS in story maps. They are listed and linked on the [workshop webpage](#) and include topics like creating buttons, block quotes and callouts, changing navigation colors and more!

## Let's Review!

Congratulations on completing Exercise 3! This exercise was designed to give you a full understanding of how to build a Map Journal, including layout, organization, adding a new section, side panel text, media, and adding story actions using web maps, photos, videos, and webpages. A number topics of were discussed including:

- ✓ **Esri Story Maps:** A story map is an online resource that provides readers with an interactive experience which combines web maps, graphics, text, media, and more.
- ✓ **Map Journal:** Map Journals are a popular story map template that provide the reader with a visual experience (maps, images, videos) and a clickable, scrolling side panel of accompanying narrative text and media.
- ✓ **Web Map as a Foundation:** A story map can reference a web map from your AGOL account and will default to the settings in your web map.

- ✓ **Story Map Journal Home Page:** The home section is the cover page of the story. It is the first thing a reader sees so it should be appealing, briefly introduce the topic and include authorship.
- ✓ **Main Stage and Side Panel Content:** A Map Journal section is like a chapter of your story. It consists of the main stage and side panel. The main stage is larger and can contain a map, photo, video, or a webpage. The side panel contains supporting text and media that help to tell the story.
- ✓ **Story Actions:** A story action is text in the side panel that, when clicked, changes the main stage content in some way. A story action can open an image, video or web page as well as changing map options such as extent, visible layers and opening a pop-up.
- ✓ **Adding Media to Your Side Panel:** Aside from adding media and webpages to your main stage content, you can also add them to your side panel.
- ✓ **Adding Maps to Your Mainstage Content:** Web maps that are added to your main stage are fully customizable. The location (extent), content (layers), and pop-ups can all be adjusted for each individual story action.
- ✓ **Adding Video:** Video can be added to your main stage or side panel content using YouTube, Vimeo, or a URL. Video cannot be added directly from a local drive.
- ✓ **Adding Images from Your Computer:** Aside from uploading online images to your story map, images can also be added directly from a local drive on your computer.
- ✓ **Conclusion Page:** The final section of a Map Journal should bring the story to a conclusion. This section, or a following one, should also contain sources used in the story map, external links, information about the author and anything else.
- ✓ **Story Map Settings:** The Story Map Settings apply to the story map as a whole. They include layout, themes, fonts, and headers.
- ✓ **Organizing Your Story Map:** Often while building a story map, sections are edited, moved, rearranged and even deleted.
- ✓ **Export Content:** Export content provides an easy to read, printable version of the story map. It is invaluable when editing your story map, sharing text with others during creation and keeping track of actions.
- ✓ **My Stories:** My Stories is a web page that lists all of the story maps that belong to the ArcGIS Online account. For each story, any maps, images, videos, etc. that it uses are listed, as well as any errors or issues.
- ✓ **Customize the Story Map Journal with CSS:** Use CSS to color and design elements in the story map.

**This concludes Exercise 3.**

## Exercise 4: Creating a Map Tour Story Map

A Map Tour story map guides the reader through a sequence of points (places). Each location is accompanied by a photo or video and a brief description. Along with the Map Journal, Map Tour story maps are some of the most popular templates. In this exercise, you will create a Map Tour to display and describe the stations along the Connecticut Valley Railroad.

### Explore Map Tour Story Maps

Esri's story map gallery contains thousands of public story maps that can be sorted by topic or format. Let's take a look.

- Navigate to the Classic Story Maps Home Page [https:// storymaps-classic.arcgis.com/](https://storymaps-classic.arcgis.com/) and click on **Gallery** on the top of the page.
- On the left under **Story Map App**, click **Map Tour**.
- Select one of the featured story Map Tours and familiarize yourself with the format.

### Adding Multiple Points to a Map Tour Using a CSV File

One of the easiest ways to add multiple locations and any associated information (photos, videos and text) to the Map Tours is by uploading a comma separated values file (CSV) to a Map Tour. These steps will walk you through this process, utilizing the CSV of train stations used in a previous exercise.

#### Formatting the Map Tour CSV

It is important to understand the CSV formatting requirements before trying to upload data into the Map Tour Builder. The Map Tour builder looks for:

- o 8 specific fields (columns). Additional fields will not be used to build the Map Tour.
- o Field names must be abbreviated according to Esri guidelines. Any fields that are not recognized by the template are ignored. For example, in the stations CSV, the field names are as follows:

| CSV field name | Description  |
|----------------|--|
| name           | name of the location   |
| description    | description of location  |
| long           | longitude coordinate   |
| lat            | latitude coordinate  |
| pic_url        | URL for the online image associated with that location                           |
| thumb_url      | URL for the online image thumbnail. It can be the same URL as pic_url            |
| is_video       | URL for online video (YouTube, Vimeo, etc.) that is associated with the location |
| color          | not included in this CSV but can be used to identify the point icon color        |

**Tips:**

- Field names are not case sensitive
- The latitude field can be either lat or latitude
- The longitude field can be either long or longitude
- Lat/long coordinates can be found in your AGOL web map using the location tool.

Note that the “SBticket” and “Town” fields in this CSV file do not follow Esri’s field guidelines for the Map Tour template and therefore will be ignored when importing it to the Map Tour.

| name               | description               | SBticket | longitude   | latitude   | pic_url                 | thumb_url                            | is_video | Town       |
|--------------------|---------------------------|----------|-------------|------------|-------------------------|--------------------------------------|----------|------------|
| Essex Station      | Essex Station opened in   | \$1.40   | -72.4048169 | 41.3501474 | https://clear.uconn.edu | https://clear.uconn.edu/geospatial/w |          | Essex      |
| Deep River Station | The original Deep River S | \$1.30   | -72.4265276 | 41.3941724 | https://clear.uconn.edu | https://clear.uconn.edu/geospatial/w |          | Deep River |
| Chester Station    | The original Chester Stat | \$1.20   | -72.433496  | 41.406893  | https://clear.uconn.edu | https://clear.uconn.edu/geospatial/w |          | Chester    |
| Goodspeed Station  | Goodspeed Station in Ha   | \$1.10   | -72.4677178 | 41.4509489 | https://clear.uconn.edu | https://clear.uconn.edu/geospatial/w |          | Haddam     |



CSV files can be created and edited using Excel. See Esri’s Map Tour FAQ’s for more information. [https://links.esri.com/storymaps/faq\\_map\\_tour\\_gis\\_data](https://links.esri.com/storymaps/faq_map_tour_gis_data)

**Uploading a CSV File**

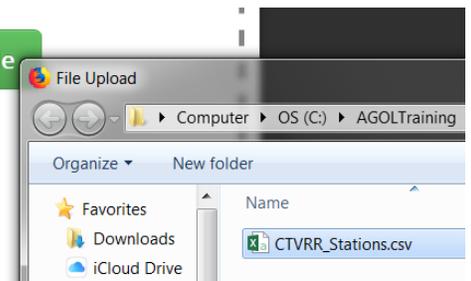
- From the Story Maps Gallery click on **Apps** at the top of the page.
- The first app listed is the Story Map Tour. Click **BUILD**. If necessary, **sign into your ArcGIS Online account**.

Welcome to the Map Tour Builder! Because Map Tour story maps rely heavily on photos and videos, the first task is to choose where the media exists. For a public account, it is required that photos and videos are already online.

**Tip:** An AGOL Organization subscription (\$) account has the option to upload photos from your computer that are then stored in your ArcGIS Online Account.

- In the **Map Tour Builder** window, click on the **Advanced Options** .
- Select **Import Tour data from a CSV file**.
- Click **Select or drop a CSV file** in the **Import CSV** window.

Select or drop a CSV file



- Navigate to your **C://AGOLTraining** folder where you saved the **CTVRR\_Stations.csv** file in Exercise 2. If you do not have the file, download it from <http://s.uconn.edu/stations> and save it to your computer.

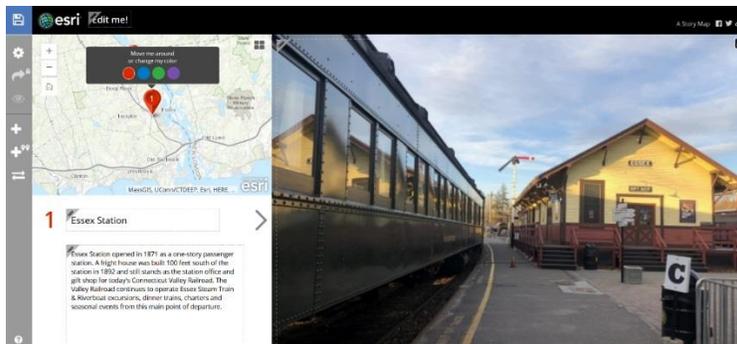
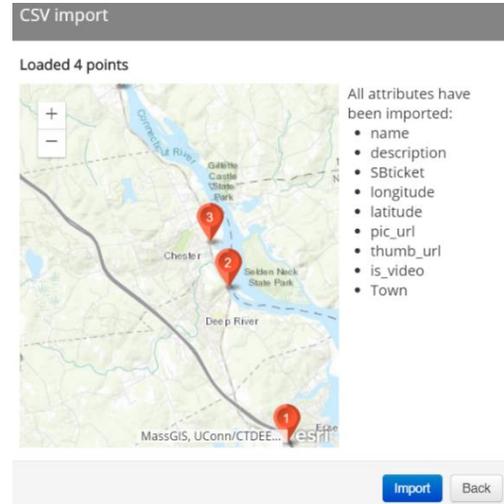
- Select the **CTVRR\_Stations.csv**.

You will see a small map with red icons (station locations) and a list of attributes that have been imported. These attributes were the field names in your CSV file.

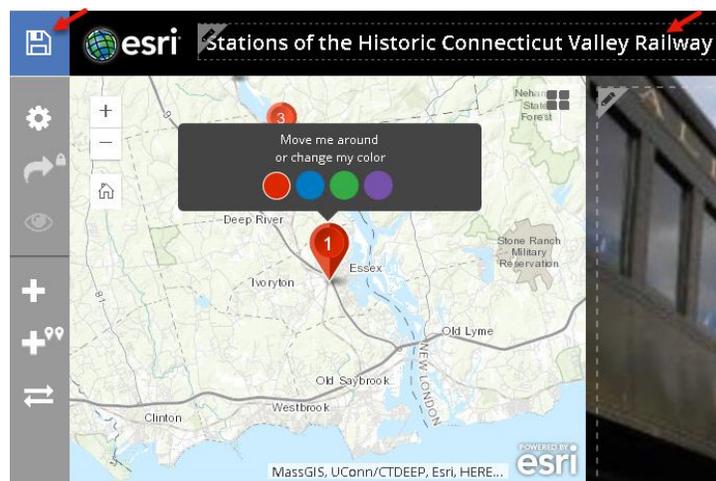
- Select **Import**.

The default story map layout page opens.

- Click on the arrows in the description window to page through the station points < >.



- Let's add a title to our story map. Click in the **Edit me!** box at the top of the page.
- Type **"Stations of the Historic Connecticut Valley Railway"** and then press **Enter**.
- Click on the **save icon**  (upper left) to save your story map. If a "tip" window opens, read it, then close it.



## Map Tour Web Map

You do not need to perform any tasks for this section, just read along.

When you save a Map Tour story map, a web map with the same name is automatically created and saved in your ArcGIS Online Contents. In this case, the web map contains a point layer created from the CSV file you uploaded to your Map Tour story map. Without the web map, your story map will not work, so **DO NOT delete** it. You can differentiate a web map and story map in your Contents folder by the name of the file type. A story map is called a **Web Mapping Application** and a web map is called a **Web Map**.

| Title  | Modified   |
|--|--|
|  Stations of the Historic Connecticut Valley Railway (Final Map Tour) | Web Mapping Application   ... Feb 8, 2019  |
|  Stations of the Historic Connecticut Valley Railway (Final Map Tour) | Web Map    ... Feb 8, 2019 |

In a Map Tour web map, like other web maps, you can add additional layers, create map notes, edit tables, select basemap, change symbology, etc. However, any changes you make to the “map tour” layer (the CSV file in this case) in the web map will not be carried over to the story map. This is different from a Map Journal, where all changes to the web map impact the story map.

Although you can add layers to your web map which will appear in your story map, the features are not interactive and inserting a legend is not possible. Because of this, make sure any layer you add will be understood by the viewer without a legend or pop-up. For example, adding the transportation layer (train tracks) could be understood without any other context.



A Map Tour is one of Esri’s “place-based” story map templates. This is because the only features that are interactive in this template are points (single locations). If your web map relies heavily on lines or polygons consider using another story map template.

## Change Basemap

The Map Tour template provides limited control over the maps that can be used in the story map. One thing you can change is the basemap.

- Click on the **basemap icon** on the map. 



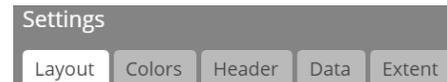
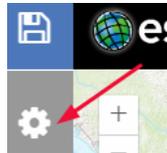
- Choose the **Imagery Hybrid**.

## Map Tour Settings

The Map Tour layout offers some limited customization. Let's take a look.

- Click on the **Settings icon** .

The Settings window provides access to formatting options that control the look and function of the story map.



### Layout

The **Layout** tab provides three options. The default layout is **Side Panel**, which is how your Map Tour initially appeared. This layout makes the media the focus of the story map and minimizes your maps.

The **Three Panel** and the **Integrated** layouts focus attention on the map while presenting media in smaller windows. These layouts also display a thumbnail of the images below the map.

- Select **Integrated**.
- **Apply**.



Side Panel **NEW!**

Select



Three Panel

Select



Integrated

Selected layout

The Integrated layout is quite different from the original Side Panel layout. The **Story Configuration** options, previously icons on the left, are now buttons across the top.



- **Save** the story map.

- Return to the **Settings** menu.

## Colors

- Click on the **Colors** tab.
- Select a new color scheme or use the bottom option to pick your own colors.

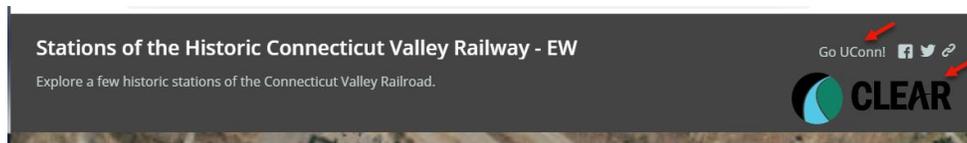


Change appearance by choosing a pre-defined theme or your own.



## OPTIONAL: Header Tab

The Header refers to the logo and text along the top.



- Click on the **Header**.

## Logo

- Either (1) leave the Esri logo, (2) select no logo, (3) add a URL for a custom logo of your own or (4) use the CLEAR logo URL, <https://clear.uconn.edu/images/templates/clear-logo.png>.
- Add a URL to the click-through link box. This makes the logo a link. For the CLEAR example, add <http://clear.uconn.edu>.

## Customize the header top right link.

That's exactly what this does.

- Add some **text** and a **link**.

**Tip:** If you use the CLEAR logo (or any logo with black text), avoid the second, black color option. Choosing a black background makes the black logo invisible!

Settings

Layout Colors Header Data Extent Zoom Level

Customize the header logo (maximum is 250 x 50px).

Esri logo  
 No logo  
 Custom logo

images/templates/clear-logo.png

http://clear.uconn.edu

Customize the header top right link.

Text: Go UConn!

Link: http://uconn.edu

Facebook  
 Twitter  
 Share

Apply Cancel

## Data tab

The **Data** tab connects fields from the CSV with the name, caption and icon color. Do not change these settings now.

## Extent and Zoom Level

Use the **Extent** tab to set the initial map extent. The **Zoom Level** tab sets the default scale level.

- Change the **Zoom Level** to level **19**.
- Click **Apply** to close the Settings window. **Save**.

Settings

Layout Colors Header **Data** Extent Zoom Level

Select photo name, caption and color fields.

Name: name

Caption: description

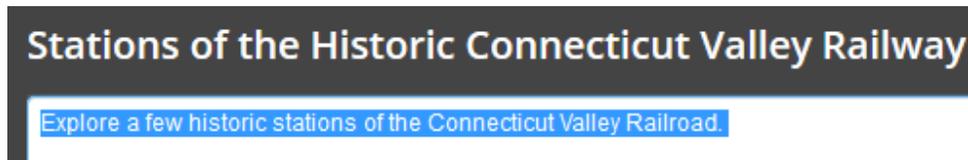
Color: icon\_color

Reset fields selection

## Add a Story Map Description

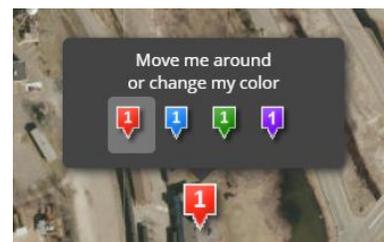
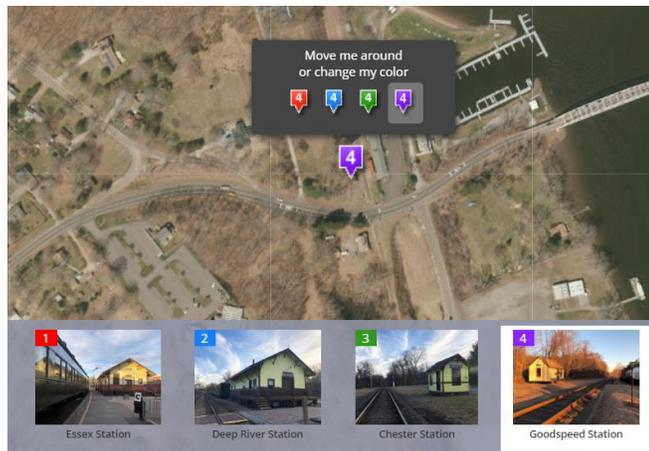
Below the story map title box there is a text box that can include a description.

- Click on the **Edit me!** pencil icon below your story map title.
- Add a sentence or two about the Connecticut Valley Railroad.
- **Save** your story map.



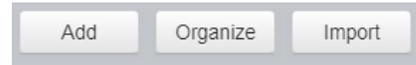
## Change Icon Color

- Select one of the **thumbnail images** below the map.
- Choose a **new color** in the pop-up.
- Repeat the same steps for the other points.



- **Save** your story map.

To manually add a point or import additional points from a CSV file, use the **Add** and **Import** functions. You may also want to change the order of the tour points during the editing process.



To reorder the stops along the tour, use **Organize**.

If you need to edit your Map Tour after you have left the page, you may first need to click on the **Edit** button on the top right of the page.



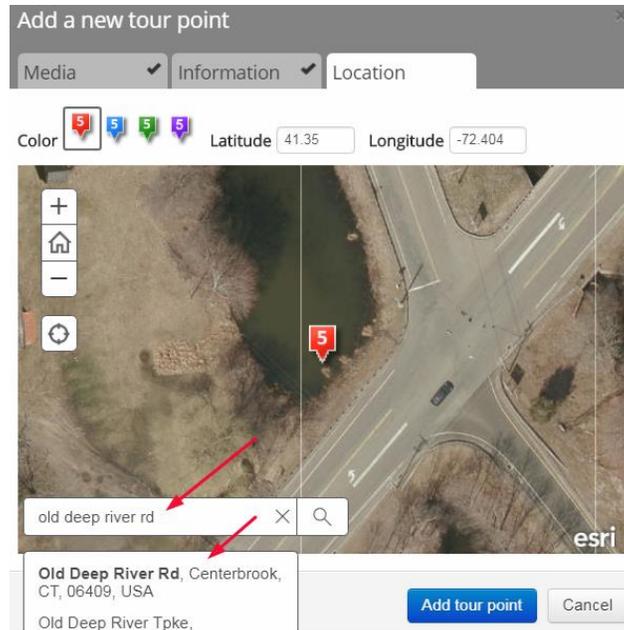
## Extra Credit: Manually Add a Location to Your Map Tour

You can continue to build your story Map Tour by manually adding tour points when you do not have a CSV file. These steps will walk you through this process using a video instead of an image.

### Adding Video to a Tour Point

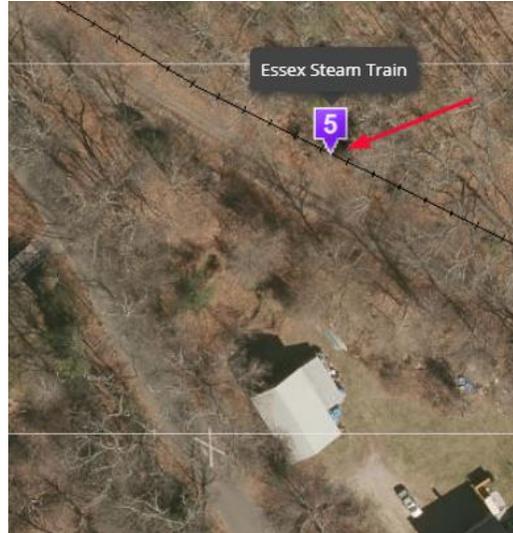
- First, visit the [workshop webpage](#) and copy the link to the YouTube video (under Exercise 4 on the agenda page).
- Back in the Map Tour, select the **Add** button.
- Choose **Video**.
- Paste the link in the **YouTube** URL box.
- Click .
- A check mark means that the URL has been confirmed.
- Select the **Information** tab.
- For the **Name** write "Essex Steam Train".
- For the **Caption** write "The Valley Railroad Company operates the Essex Steam Train."
- Select the **Location** tab and in the search box type in "old deep river rd". An address locator appears below showing the address for **Old Deep River Rd, Centerbrook, CT 06409, USA**.
- Choose **Add tour point**.

 A screenshot of the 'Add a new tour point' form. The form has three tabs: 'Media', 'Information', and 'Location'. The 'Media' tab is selected. Under 'Picture', the 'Video' option is selected and highlighted with a red arrow. Under 'Video', the 'YouTube' option is selected, and a URL is entered in the text box. A gear icon and a checkmark are visible next to the URL, with a red arrow pointing to the checkmark. Below the video options is a 'Thumbnail' field with a default image URL. At the bottom, the 'Information' tab is selected, and the 'Name' field contains 'Essex Steam Train' and the 'Caption' field contains 'The Valley Railroad Company operates the Essex Steam Train.'



Manually move a point by clicking on the icon and dragging it to the desired location. It is easy to accidentally move a point so be careful!

- Drag the Essex Steam Train Point so that is over the actual train track just north of where it currently is.



- **Save** your story map.

## Share Your Map Tour

By default, the story map is set to private. The first step is to make it map public so that it can be shared with others or embedded into a website.

- Click on the **SHARE** button (next to **SAVE**).
- Select **Share publicly**.

Your Tour is publicly accessible.

Share your Tour

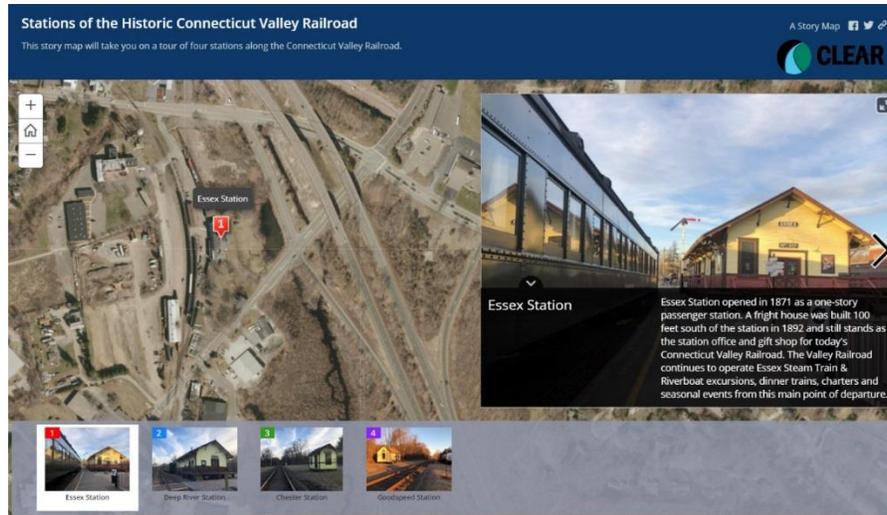
<https://arcg.is/1P5qO9>

OPEN

Tip: You can use [My Stories](#) to check your story for errors, change how it is shared, make it look good on social media, etc. Learn more about My Stories [here](#).

Your story map is now public. Use link to share it with others.

- Click **OPEN** and spend a few minutes admiring your completed story map.



## Let's Review!

Congratulations on completing Exercise 4! This exercise was designed to give you an in-depth understanding of how to build a Map Tour, including layout, using a CSV in your story map, adjusting the settings, changing location content, and adding a map point manually. A number topics of were discussed including:

- ✓ **Map Tour:** A Map Tour is a popular story map template that guides the reader through a sequence of points (places). Each location is accompanied by photo or video and a brief description.
- ✓ **Using a CSV in Your Map Tour:** CSV files are a convenient way to upload multiple points to a Map Tour. CSV files need to be formatted according to Esri guidelines in order for the location, name, and description to properly be displayed.
- ✓ **Change Basemap:** The Map Tour template provides limited control over the maps that can be used in the story map. One thing you can change though is the basemap.
- ✓ **Map Tour Settings:** Map Tour Settings can be applied to change the overall story map look. Settings include layout, colors, headers, data fields displayed, point extent, and zoom levels.
- ✓ **Specifying a Custom Extent:** Specifying a custom zoom extent will apply that setting to all points in your Map Tour.
- ✓ **Story Map Description:** Map Tours provide a text box to summarize what your story map is showing.
- ✓ **Manually Adding a Location to Your Map Tour:** Map Tour points do not need to be added using a CSV, alternatively they can be added manually.

**This concludes Exercise 4.**