EMPOWERING I-80 COMMUNITIES
TODAY AND TOMORROW

A3. GIS Platform

Appendix A.3

I-80 Corridor System Master Plan: GIS Platform

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I-80 CSMP GIS – Introduction

Considerable thought was given to how information for the I-80 corridor could be depicted on a website intended to be accessible by both the I-80 Stakeholders and the general public. It was understood that relevant and important information would be available from many different sources requiring the study team to overcome concerns about data "ownership", data quality, and how "current" the data might be.

The project team decided the data compiled should have the purpose of serving to inform the decision making regarding topics of primary interest to the stakeholders. In order to identify those interests the GIS working group solicited input from the other working groups that focused on specific topics such as wild life, maintenance, tourism, freight, energy, etc. This focus allowed each working group to identify their specific data needs that would inform their decision making by identifying existing conditions and revealing unmet needs. The GIS working group then identified sources for the requisite information and populated the database.

Ultimately a GIS platform was developed and a link to a map gallery was placed on the project website. This map gallery hosts maps of the diverse working groups exploring multiple dimensions of the I-80 corridor communities and the implications these different dimensions imply for the supporting infrastructure. The GIS tool and tutorials are located on the home page of I-80 website located at www.i80vision.org

Memo

Date:	Friday, July 18, 2014
Project:	I-80 Corridor Stakeholder Network
To:	Mike Lawson, Atkins
From:	Laycee Kolkman, HDR
Subject:	GIS Documentation

Introductory narrative that provides context for the work

The geographic information systems (GIS) component of the I-80 Corridor Stakeholder Network project supports the work groups that are contributing to this project. A critical tool for providing this support has been ESRI's ArcGIS Online (AGOL), which is a web-based platform for storing geographical data. Since the project area covers four states, the city and county agencies and metropolitan planning organizations that are contributing to the project found AGOL logistically helpful for sharing geographical data because AGOL can be accessed from any web browser, whether on a desktop, smartphone, or tablet.

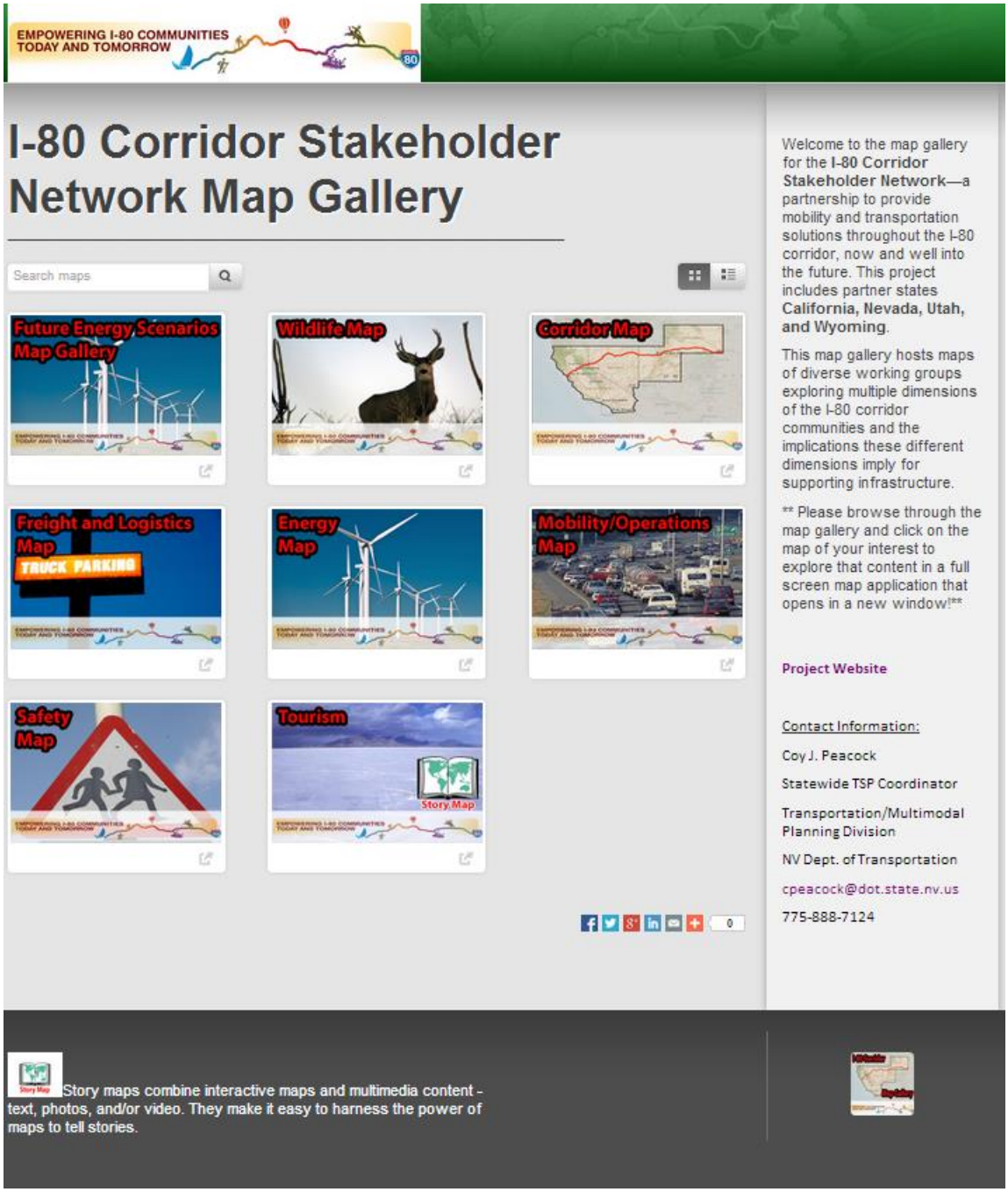
The GIS component of the project started with the GIS team reaching out to the GIS staff with the agencies along the I-80 corridor. Many agencies readily agreed to send the project team some of their basic GIS data layers, because they were already externally published. However, some of our partners GIS staff were unable to share the information as it was not externally published, or it belonged to a division of the DOT outside the GIS division and they weren't comfortable sharing this information. The GIS team coordinated further with the "data owners" within each agency to obtain the data. Throughout the project, the GIS team made other data requests to agencies according to instructions from the Work Group leads.

The GIS team then created the following web-based mapping applications within AGOL for the project team and stakeholders to use:

- **Web map** – a web-based interactive map that allows a user to query and display the layers on the map.
- **Map app** – a specific layout that's used to package web map content into a focused experience for the user.
- **Map gallery** – a configurable application that displays a group of contents (web maps, apps, and other content from AGOL) that's searchable. Content can be launched directly from a gallery.
- **Story map** – the combination of interactive maps and multimedia content, text, photos, and/or video. Story maps harness the power of maps to tell stories.

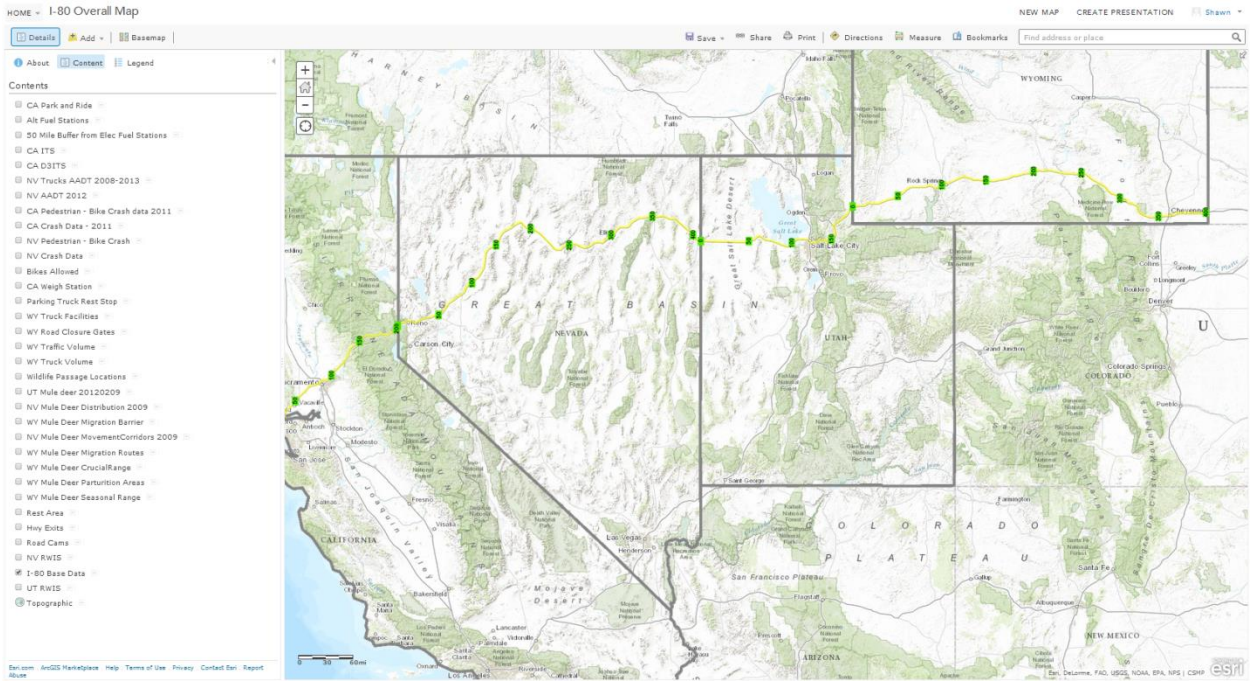
The contents of the online data that were produced and documented during the project

The screen captures below illustrate the content that was made available to the project team and the public through the I-80 Corridor Stakeholder Network map gallery.

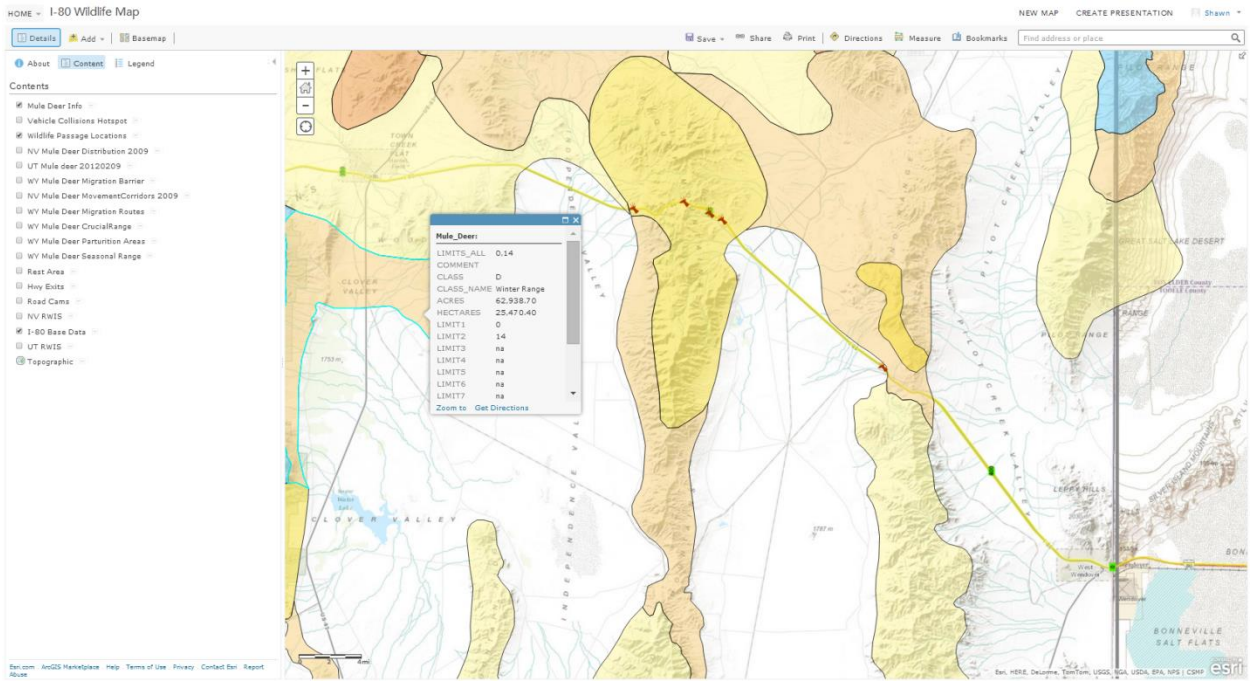


The main project map gallery. This map gallery is the main launch point for the GIS content related to the project.

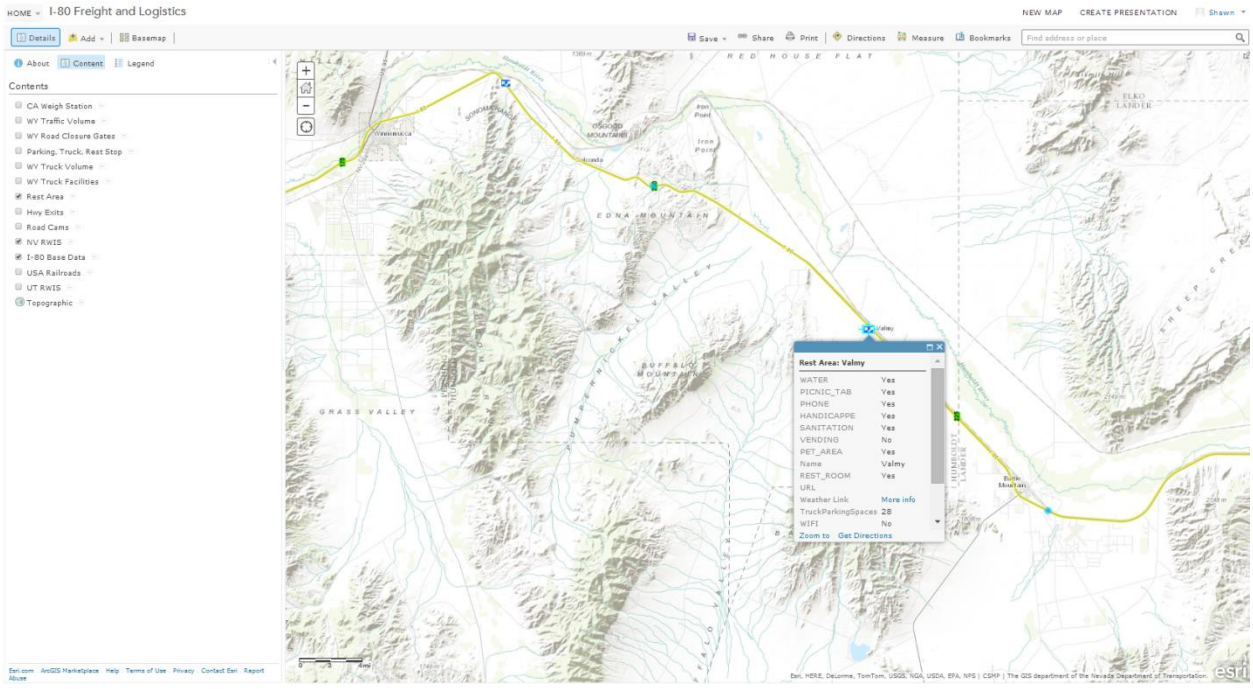
The gallery contains descriptive text about the project with project contact information in the sidebar. The contents of the gallery are an overall corridor map, a wildlife map, a freight and logistics map, an energy map, a mobility/operations map, a safety map, a tourism story map, and a future energy scenarios map gallery. Screen captures of these maps and galleries are included below.



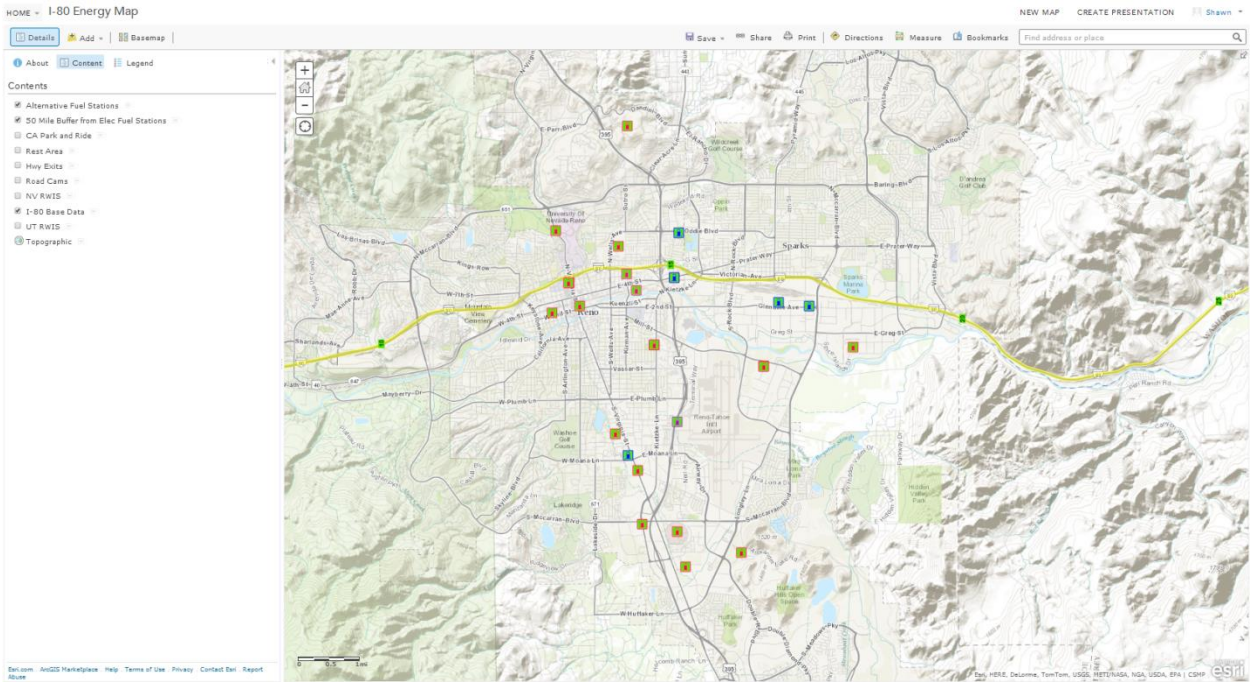
Overall corridor map.



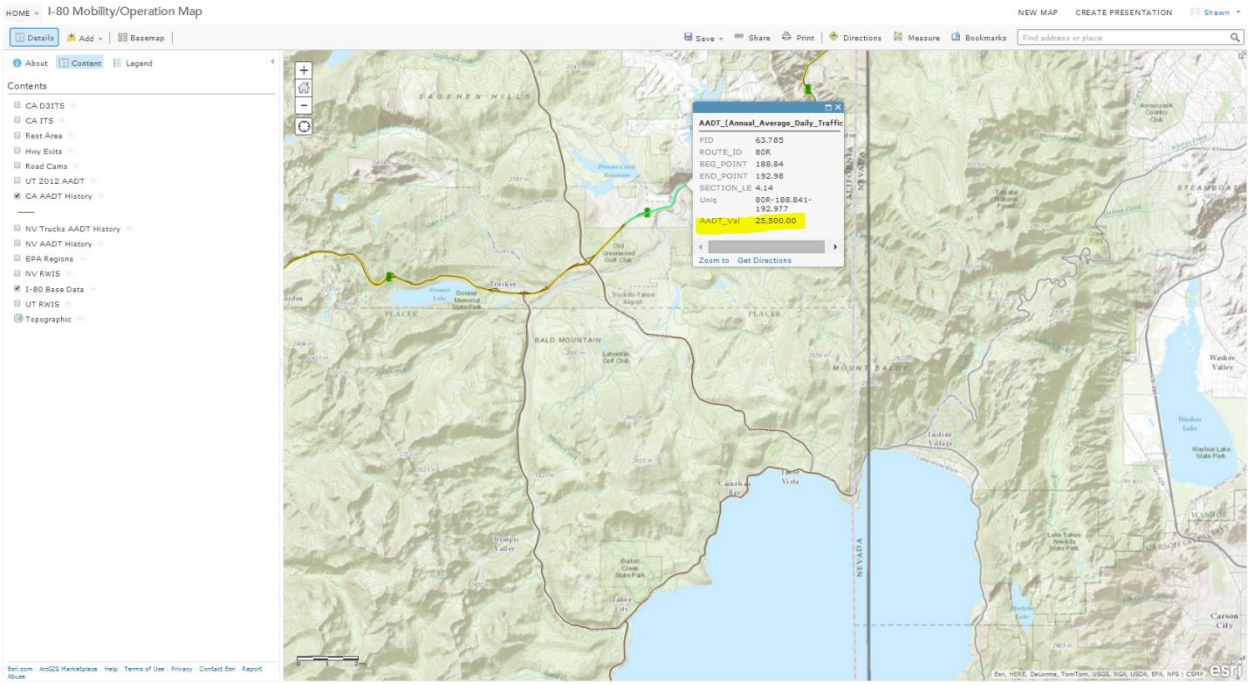
Wildlife map.



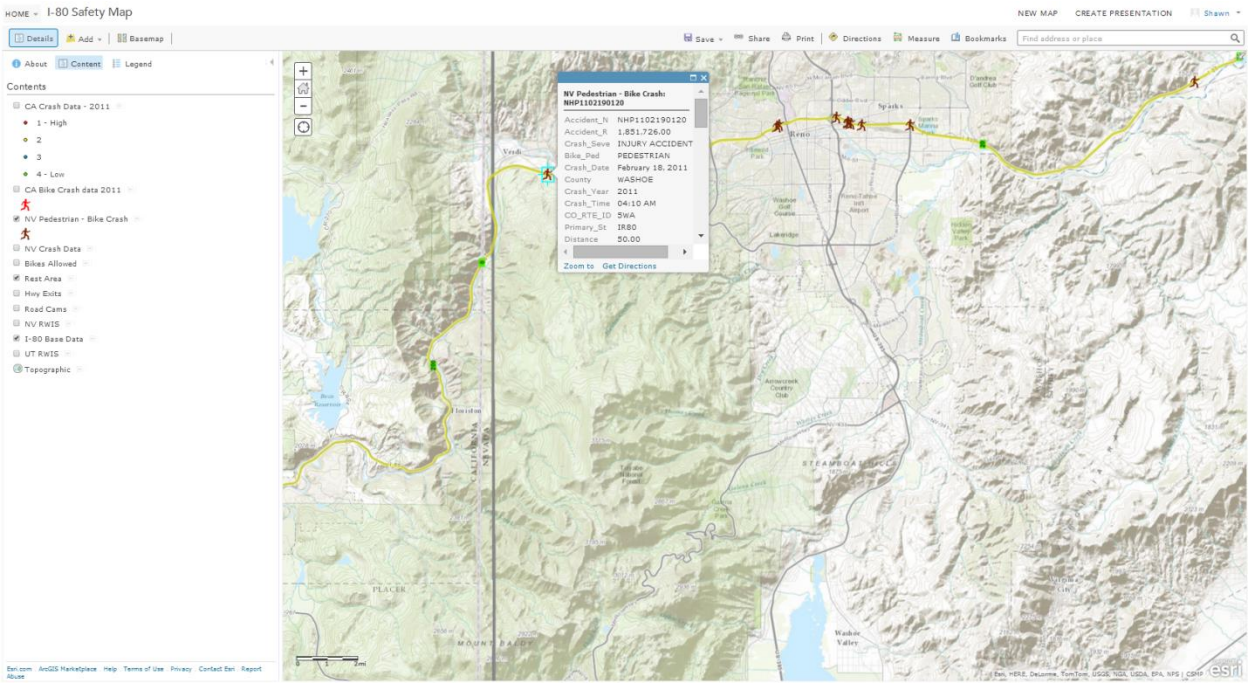
Freight and logistics map.



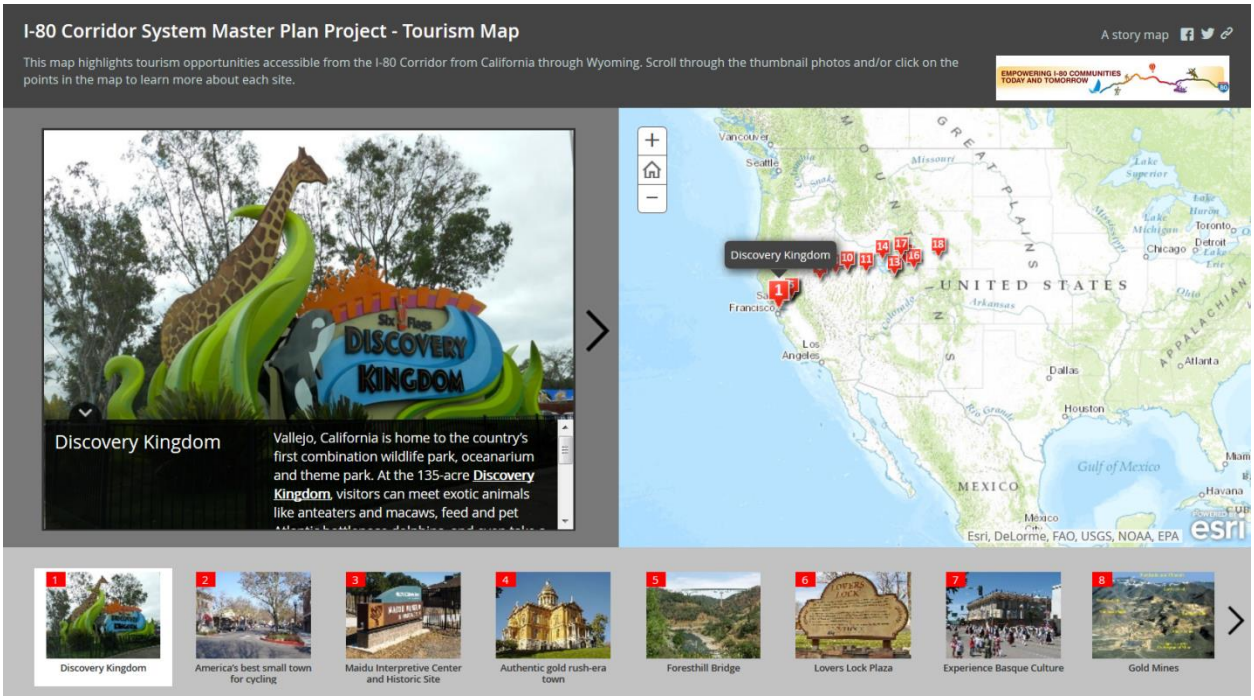
Energy map.



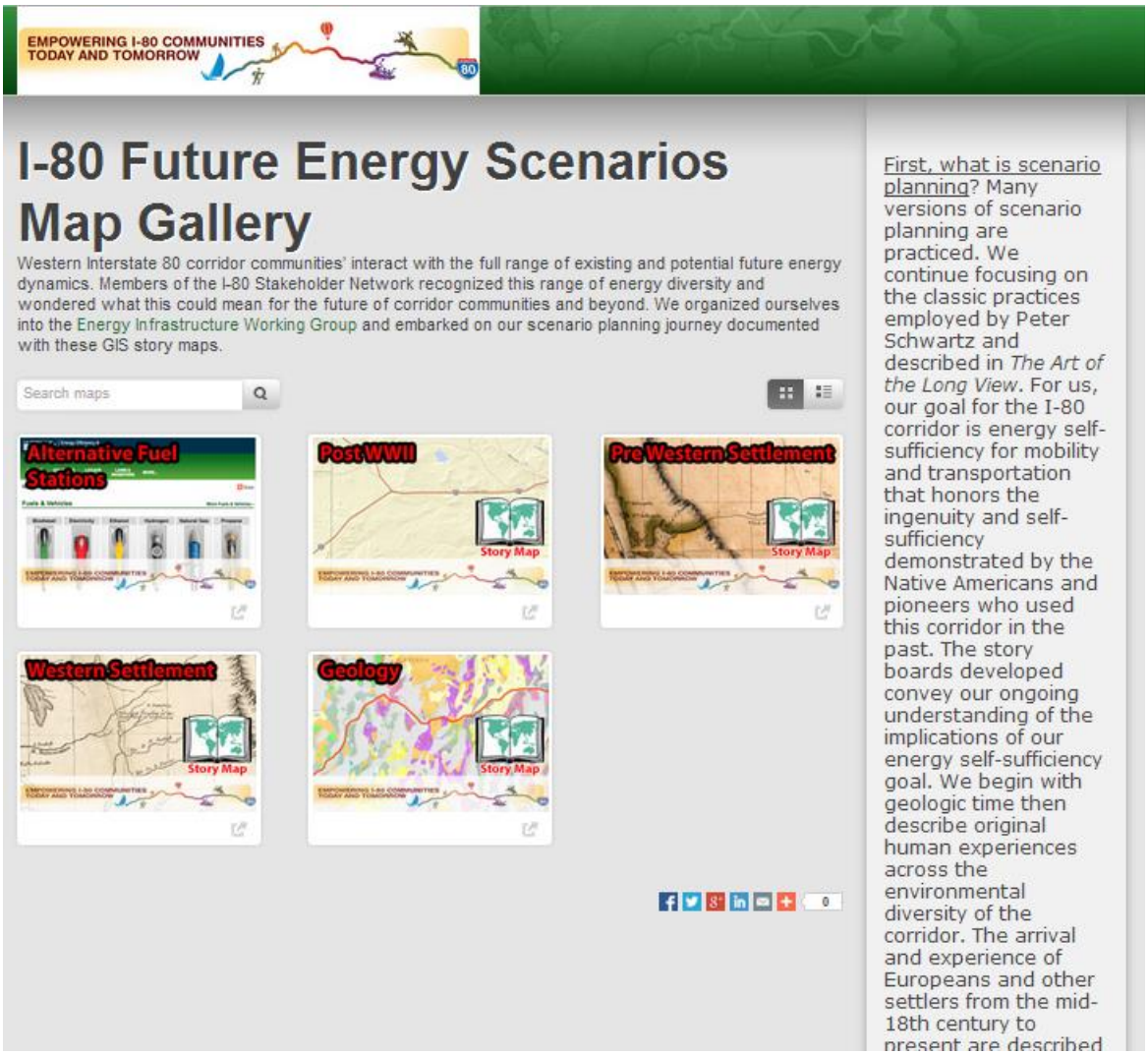
Mobility/operations map.



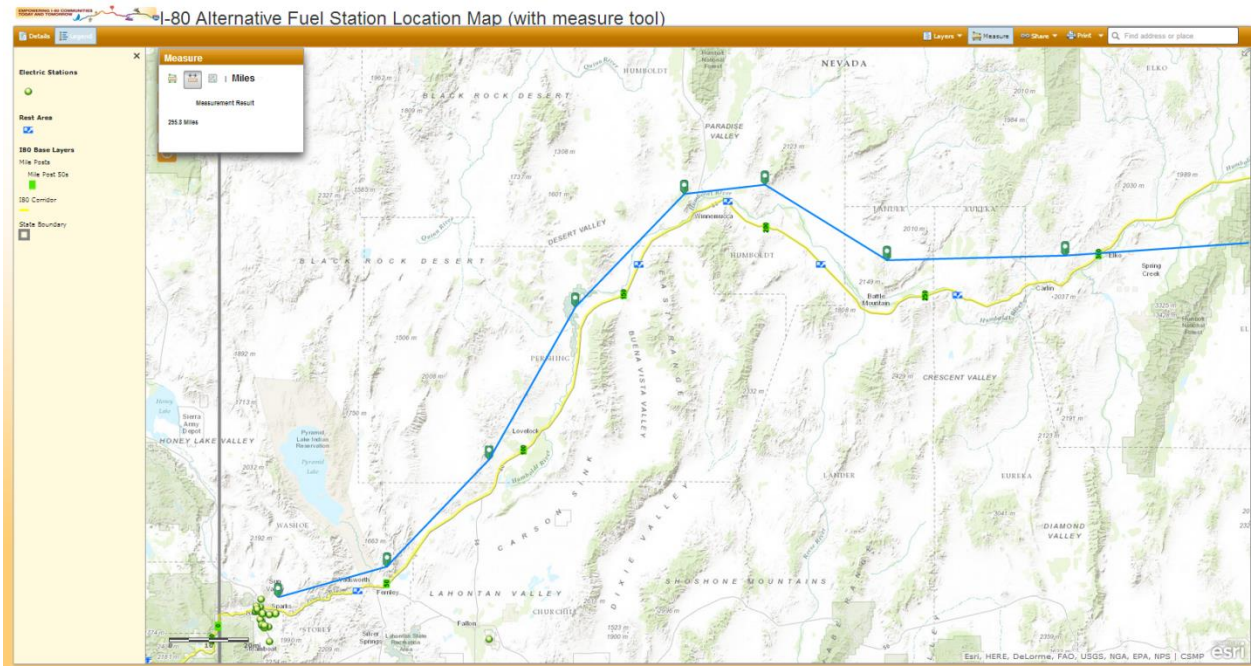
Safety map.



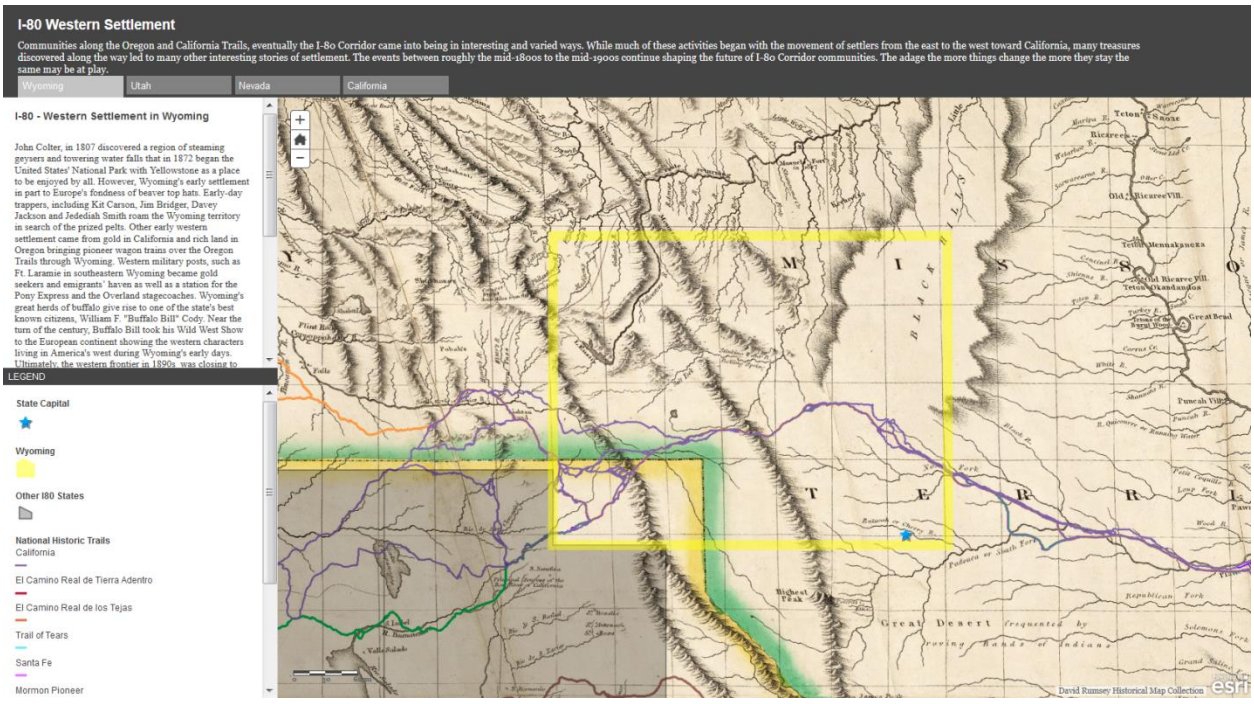
Tourism story map.



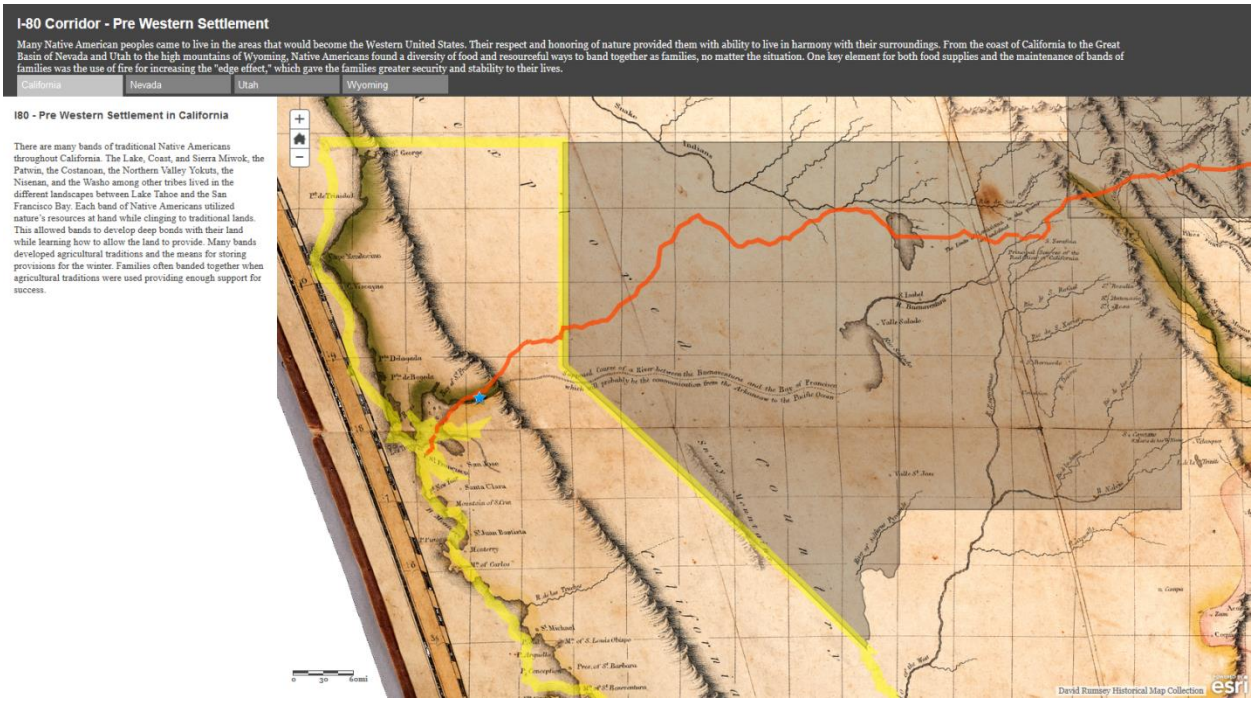
Future energy scenarios map gallery.



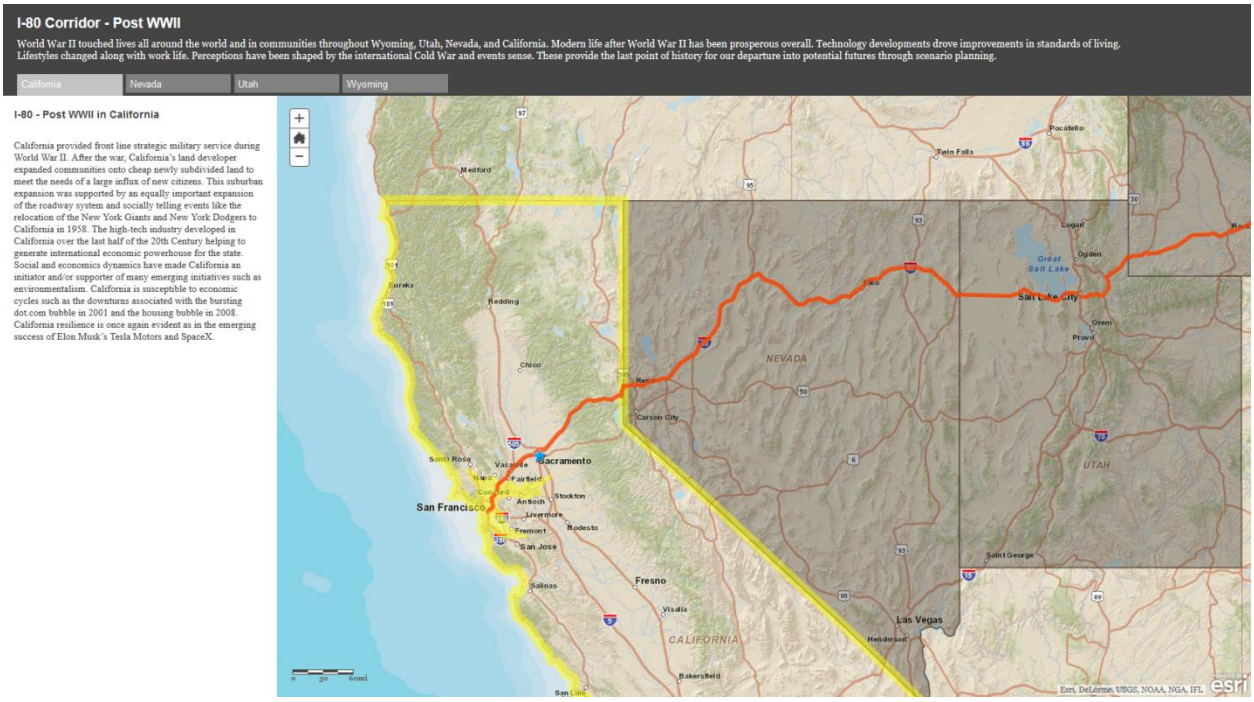
Alternative energy station location map (with measure tool). This map app is nested in the future energy scenarios map gallery.



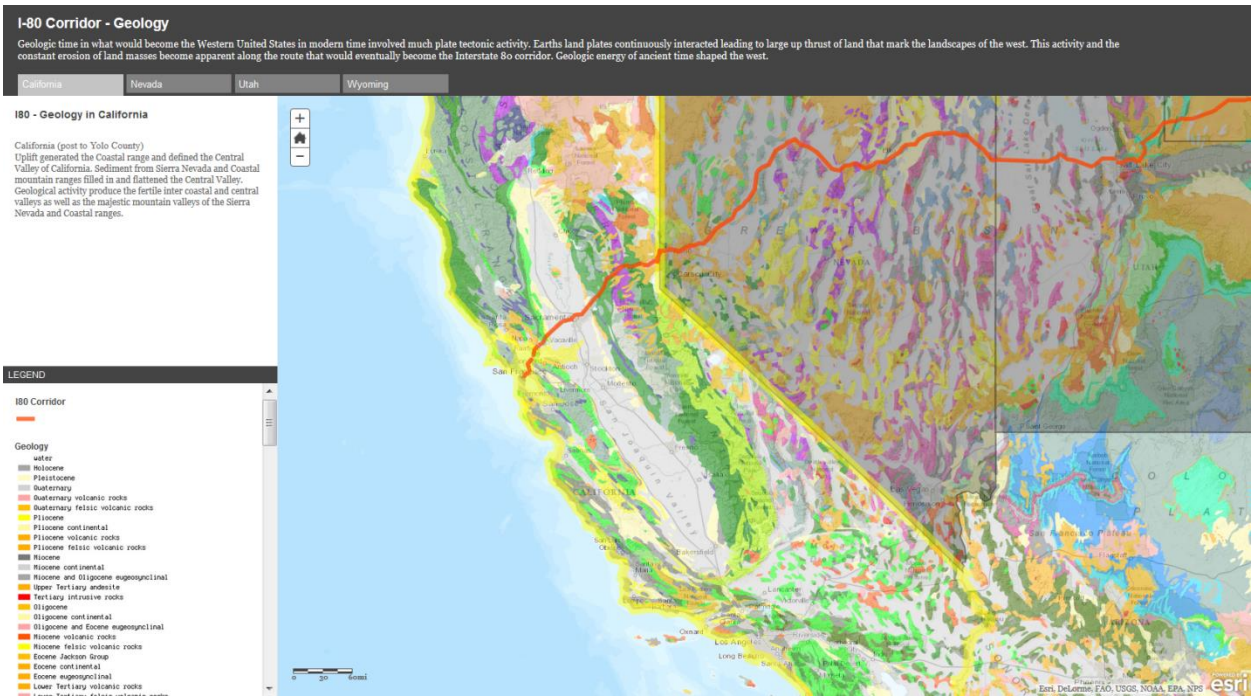
Western settlement map application. This map app is nested in the future energy scenarios map gallery.



Pre-western settlement map application. This map app is nested in the future energy scenarios map gallery.



Post-WWII map application. This map app is nested in the future energy scenarios map gallery.



Geology map application. This map app is nested in the future energy scenarios map gallery.

Documentation of the technical procedures for populating and updating the AGOL platform

AGOL is intended to be a collaborative mapping environment. The AGOL platform uses data from a group of users and agencies who supply data for public and private use.

Data can be added to a map in a number of ways. Within an AGOL web map, you can click the “Add Content to Map” button and search for any layer you want to add. Alternately, you can log in and upload files or can connect to various services (whether hosted in the cloud environment or on an independent server) to add layers to the map (in kml, csv, and other formats). Then, once you’re satisfied with a collection of data, you can save that collection into a map that can be published into a story map or other application and promoted to the website map galleries.

For the I-80 Corridor Stakeholder Network project, each Work Group should assess its respective maps and decide how often the individual data layers in the maps should be updated.

To find the source information for a web map, open the map, turn on the appropriate data layer, and click on any feature in that layer. The pop-up window that appears has a Source attribute near the bottom of the window (you might need to scroll down in that window) with the source name or, in some cases, a link to the actual source website. The window also includes the date when the data were gathered or last updated; this information is in the UpdateDate attribute.

Often, at the end of a project, a consultant transfers its locally saved map files to the client. The client then needs to rebuild the maps from the files that the consultant produced. However, with this project, the geospatial data are being filed in a web-based system (AGOL), so the maps and apps won’t need to be transferred or rebuilt at the end of the project. The maps and apps will remain under the Nevada Department of Transportation’s AGOL account.

AGOL tutorials

The I-80 Corridor Stakeholder Corridor project has several video tutorials specific to the AGOL content for the project. See the following link for those videos:

https://www.youtube.com/user/i80MasterPlan

There are also several tutorials at the ArcGIS Resources website:

http://resources.arcgis.com/en/tutorials/

The Utah Department of Transportation has created several video tutorials for UPlan, UDOT's AGOL account. These tutorials are specific to UPlan, but much of the instruction applies to any AGOL content.

UPlan Basics 1: https://www.youtube.com/watch?v=ayxjJtHn0b8&feature=youtu.be

UPlan Basics 2: https://www.youtube.com/watch?v=oZ_v0VuN5AQ&feature=youtu.be

UPlan Basics 3: https://www.youtube.com/watch?v=SCPL15VsBCQ&feature=youtu.be