Last fall, my friends, Todd and Helen Wilson, published a book about Pittsburgh's bridges. I developed a small black and white locator map for their book as well as a poster showing the city's river bridges. One major drawback with the printed maps is that they show all of the river bridges that ever existed in the city on one map. I wanted to create a way for users to explore how the city's bridge landscape has changed over time.

In honor of the City of Pittsburgh's 200th birthday and this year's NACIS conference theme of "Mapping Change", I developed an interactive map showing the evolution of Pittsburgh's river bridges. The map is a digital companion to Todd and Helen's book, allowing users to learn about the city's river bridges through a more interactive experience.

My target user is a local historian or bridge enthusiast interested in learning more about the history of Pittsburgh's river bridges. The user could be visiting the site to learn about a specific bridge or learn how the city's river bridge landscape evolved over time. Now that the site is developed, I'm excited to share it with the City and local history organizations.

When the map first opens, it shows the bridges that exist today. The bridges are symbolized by their design type, so you can easily see which bridges are metal trusses, arches, suspension bridges, and girder bridges. I specifically kept the background light and chose not to include historic maps so that the bridge points were the star of the map. You can hover over the bridges to see their name, year built, and year demolished. You can click a bridge to get a photo and more information. The selected bridge is shown in a larger circle with a cyan highlight, so you can see the location of the bridge they've selected. You can close the information panel to remove the information and map affordance.

As I was looking through Todd and Helen's book for information to include in the descriptions, I focused on interesting stories about each bridge, as opposed to engineering specifics. For example, the Second Allegheny Aqueduct (built in 1845), launched the career of John Roebling, who later went on to build the Brooklyn Bridge.

The slider bar covers the 200 year history of the City (1816-2016). As you scroll the slider bar back in time, the map updates to display the river bridges, as they existed in the given year. Scroll back far enough, and you can see when the city only had a few wooden covered bridges.

To help identify new bridges, I added a yellow highlight for bridges built within 5 years of the selected year. With this highlighting, the map allows for data exploration not easily possible in a book or printed map. For example, you can see that the early 1900s was the city's golden age of bridge building, which makes sense given Pittsburgh's industrial importance at that time. It's also fascinating to see when bridges were first built in a particular area. For example, it wasn't until the 1930s that Pittsburgh had a vehicular bridge over the Ohio River.

Users focusing on a particular area can zoom in and then use the time slider. For example, zooming into the Point, you can scroll through the three generations of its bridges.

I didn't want the time slider to be the only way to interact with the map. Users could be interested in a bridge, but not know when it existed. So, I added a list of all of the bridges that ever existed. Bridges are in alphabetical order. I also added a search box with autocomplete so that users can start to type the name of a bridge and select one from the list of results. In both the bridge list and the search box, clicking a result will zoom to the bridge, open its photo and information, and update the map to the year the bridge was built. It's a great way to find a bridge and see what other bridges were in existence at the same time.

I'm ecstatic about how the map turned out, but I've noticed a few things I would like to consider as possible enhancements. I developed the map using Chrome and I've recently noticed that the map does not display in the same way in Safari. With help from Rich, I would like to make some tweaks to the CSS so the design can display consistently across all browsers. Also, though outside the scope of this course, I would love to create a responsive version of the map that would work on a phone or tablet.

I chose to symbolize the bridges by their design type, but a potential enhancement would allow users to switch the symbology to see the bridges based on their use (vehicular, railroad, pedestrian, or aqueduct). By symbolizing the data in a different way, users would have more opportunities to explore the data and make their own discoveries.