Among cities in the United States, Philadelphia possesses an extensive rail transit network. Its rail transit network includes service from three different agencies, including NJ Transit, SEPTA, and PATCO. These rail lines form a critical piece of the city’s transportation network and serve to transport thousands of the city’s residents and commuters throughout the city and beyond.

While this transit network has remained largely the same for decades, the neighborhoods it serves have not. Since 2013, Philadelphia has experienced continuous growth of both jobs and residents, signifying its increased desirability as a place to live. As a result, rent and house prices in Philadelphia have reached record highs.

Given both the city’s extensive rail transportation network, combined with its recent desirability as a place to live, I would like to consider: how much have rents and population changed in the city between 2013 and 2017? Additionally, have areas of the city within walking distance (1/2 mile) of transit seen higher increases of both variables during the same time period?

To begin this project, I obtained census block groups for the city of Philadelphia from the Census Bureau website. After adding the population change and rent change data for these block groups in 2013 and 2017, I calculated the change and percent change for each variable. Next, I converted the city’s block groups to points and used the Natural Neighbor tool to visualize the change. Then, I added the city’s rail transit lines and stations, creating a 1/2 mile buffer around each of the city’s rail stations that including the associated block groups. This 1/2 mile buffer represented all areas of the city within walking distance of rail transit. After doing this, I converted these associated block groups to points, visualizing the change in rent using the Natural Neighbor tool. Lastly, I clipped all the data to fit within the city of Philadelphia’s boundaries.

The results of my analysis were mixed. Overall, the median rent between 2013 and 2017 for areas walkable to rail transit in the city increased by an average of around 6%, or around $42. For the same time period, the average increase in rent for the entire city of Philadelphia was around 10.6%. Thus, when including only areas walkable to transit, rent price increases from 2013 to 2017 were actually more moderate than that for all locations in the city, signifying that areas near transit in Philadelphia are not necessarily more expensive.

However, as seen in the maps below, there is significant variation between areas that are increasing, stable, or decreasing in rent. For gentrifying areas with or without walkable access to rail transit, such as parts of Center City, the River Wards, North, South, and West Philadelphia, population and rent increased at a higher rate than other areas. Thus, in future research, I would like to consider other additional factors, including an area’s crime rate, median household income, and race to consider rent increases from a more complete perspective.

Sources
GIS Data for this project was obtained through Pennsylvania Spatial Data Access (PASDA), New Jersey Geographic Information Network, the U.S. Census Bureau, and ArcGIS Online.

Cartographer: Paul Henjes
GIS 101: Intro to GIS Fall 2018
Projection: NAD_1983_StatePlane_Pennsylvania_South_FIPS_3702_Feet