**Description of Project**

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This report looks at the impact of COVID-19 bus schedule changes on Allegheny County communities. The first analysis looks at how bus density for the county was affected. This change of density shows where buses were cut most while the new bus schedules are in effect.

Note that much of the county does not have easy access to public transit. The changes in bus schedules has no effect on those portions of the counties that cannot easily access Port Authority buses or light rail services.

I defined access to public transit as a person living within a 10-minute walk of any bus stop. This is a very liberal definition—many analyses use a 5-minute buffer around stops. This also does not take into account the requirement of transfers, which greatly affect the ease of use for many people outside the urban core.

From this first analysis I found that much of the change in bus density occurs in the urban core. This is where bus volume was already the highest, so it does make sense that these were the areas where service was reduced the most.

The second analysis looks at the workers who most likely still need to utilize public transit—healthcare and service workers. Workers in these industries represent the few that still need to get to work during the shutdown, meaning the Port Authority should ensure that services cuts do not overly impact those workers.

This analysis centers around determining where healthcare and service workers respectively are relatively abundant. I’ve done this by constructing a relative abundance index that takes into account both the density of the type of worker in a give census block group, and the proportion of people in that block group that work in a given sector. In this way the relative abundance measure incorporates not only how many workers reside in a given block group, but also highlights where those workers are more likely to live.

Third, this project takes in bus usage data from the time of the bus changes, 3-25-20, until 4-21-20, and compares that data to the change in bus frequency. For this analysis I’ve constructed a ratio that compares that change in use to the change in buses—values above 1 means use has decreased by less than the bus availability has decreased, or that use has actually increased. Values below 1 represent where buses were reduced more than use declined, and these values should receive scrutiny.