South Florida, for the most part, is defined as Palm Beach County at its northern extent, Miami-Dade county towards the south, and Broward County sandwiched in between. It's known for its sunny beaches and lovely nightlife but it also has a reputation for being hot, humid and consumed by urban sprawl. These factors make owning a vehicle in South Florida more of a necessity than a privilege, but does public transportation fill that gap? Palm Beach and Broward counties are serviced mainly by bus routes and supplemented by a regional rail that traverses the three counties. Miami-Dade utilizes a combination of bus routes along with an above-ground metro system that runs throughout downtown.

The objectives of this analysis were to identify areas in South Florida that lacked access to public transportation yet needed it the most.

For this analysis the majority of the data was acquired from the 2015 American Community Survey (ACS) administered by the US Census Bureau which summarized data from 2011-2015. Transit line and stop data for each county was acquired through each counties’ respective GIS data site. All the lines and stops were merged into layers which combined the data for all three counties. The combined stop layer was run through the euclidean distance tool to create a raster with breaks at a quarter, half, three-quarters, a mile and beyond. The median household income, vehicular ownership and dependency on public transport were derived from the ACS data. After refining the data to the relevant counties, they were standardized to 5 breaks each and converted into rasters. Once in raster form they were reclassified and added up using the raster calculator. The distance to a stop was weighted at 40% while the other factors were weighted at 20% each. The resulting raster is shown on the right.

The areas towards the green end of the spectrum on the final analysis experience higher access to public transportation but also have more means of transportation available to them in the forms of private vehicle ownership. The areas represented towards the red end of the spectrum are areas where there is a distinct lack of public transportation and there are less opportunities for travel as those are areas where there is low vehicle ownership and low median household income. As the analysis was done with census block data, areas in the West are mainly represented by red which does not truly reflect the population in those areas. In the end the areas identified are indeed in need of public transportation and certainly lack it. The analysis was a success in terms of achieving the objective but there is certainly more opportunities and data that would have furthered the project more.

South Florida consistently ranks in the top-10 regions for annual growth attracting people from all over the United States as well as the world. This growth is not reflected as the data comes from 2015. Suburban expansion is also poorly represented within this analysis as it happens rather rapidly and has increased within the last five years. Also not reflected in this analysis is Virgin Trains USA newest venture which connects West Palm Beach, Fort Lauderdale and Miami, the biggest cities in each county, in a high-speed rail corridor and was only opened in 2018. Also unaccounted for is South Florida Regional Transport Authorities (SFRTA) planned additions to the Tri-Rail system which would see the commuter rail line expand northwards towards Jupiter, which is Palm Beach County’s northernmost town.