

# Identifying the future of Gainesville's RTS

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## Abstract

Public transit is integral to improving the socioeconomic statuses of communities. Workers without private transportation rely on transit as transportation to and from work, school, and grocery stores (Tomer). Gainesville, Florida's bus system, is better than many surrounding communities, but is by no means perfect. Many areas in the community lack frequent buses or bus stops at all, which contributes to a lack of employment and the increasing impact of food deserts (Lynch). This project will determine areas in Gainesville that are of highest need for more bus routes and new bus stops, based on employment rates, poverty levels, and the location of food deserts.

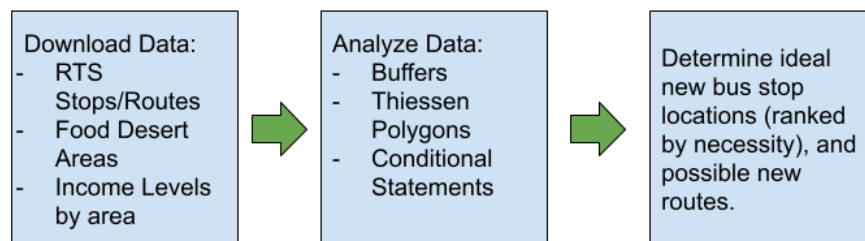
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## Question

Based on employment levels, median income, and food desert locations, what locations in Gainesville would be best served by new bus stops and/or bus routes, in order to improve overall socioeconomic status?

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## Workflow



## Explained Approach

To analyze which locations in Gainesville have the most need for improved transit access, data regarding bus and route locations, income levels, and food desert (and potentially grocery store) locations will be used. The bus stops will be used to create a 0.5 mile buffer, to determine which areas are serviced within a 10 minute walk from a stop. Then, conditional statements will be used to determine the areas outside of this buffer (areas that do not have easy bus stop access) that overlay with both food deserts and/or low-income areas. Maps of these various conditional statements will be used to determine the severity of bus stop need. Areas which meet all 3 criteria (outside of the buffer, low income, and in a food desert) will be the highest priority for a new bus stop. Areas that meet 2 of the 3 criteria will be medium priority, and areas that meet 1 of

the 3 criteria will be lowest priority. If time permits, Thiessen polygons will be developed in regard to bus routes, to further analyze the ease in accessing different areas of the city of Gainesville.

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## Limitations and Future Considerations

There are numerous limitations presented due to the data available. Firstly, the consideration of what days a bus route runs and the hours that a bus route runs are not readily available with the files found for bus stops and routes. This limits the ability to determine how bus route times and frequencies could also be improved. Furthermore, there are many other data points other than income and food deserts that can be used to justify the erection of a new bus stop or route, but due to time constraints, these data points will not be able to be analyzed. Finally, this project assumes that money is not a constraint for the erection of new stops or stations, and prioritizes helping underserved populations. The unfortunate reality is that the Gainesville RTS system is limited by budget, and routes are often optimized to save money, making some of these new stops possibly unrealistic.

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