

Identifying the Future of Gainesville's RTS

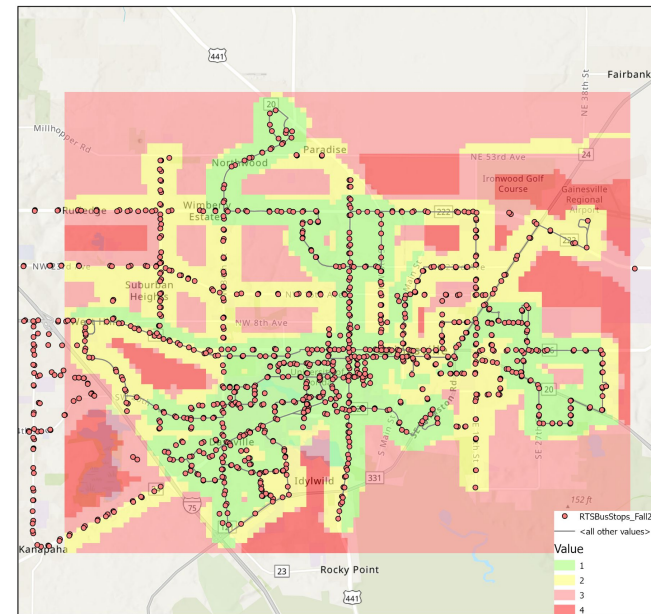
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Introduction

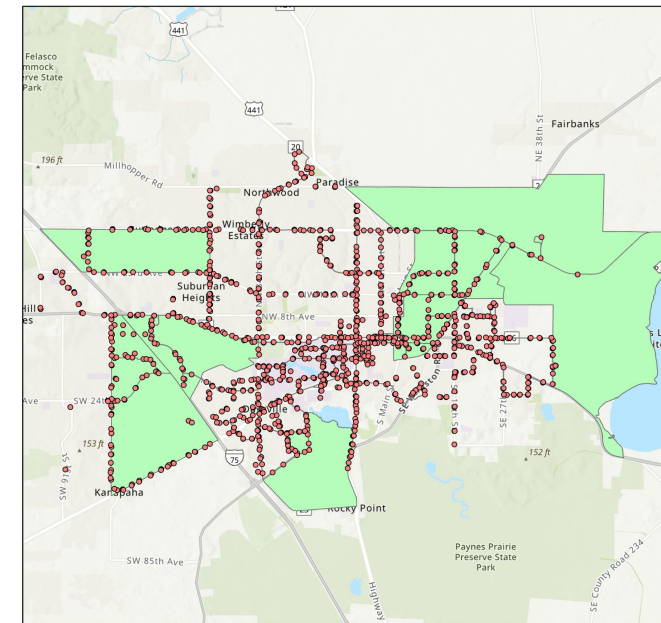
Public transit is integral to improving the socioeconomic statuses of communities. Workers without private transportation rely on transit as transportation to and from work, school, and grocery stores (Tomer). Gainesville, Florida's bus system, is better than many surrounding communities, but is by no 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 analysis determines 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.

Methods

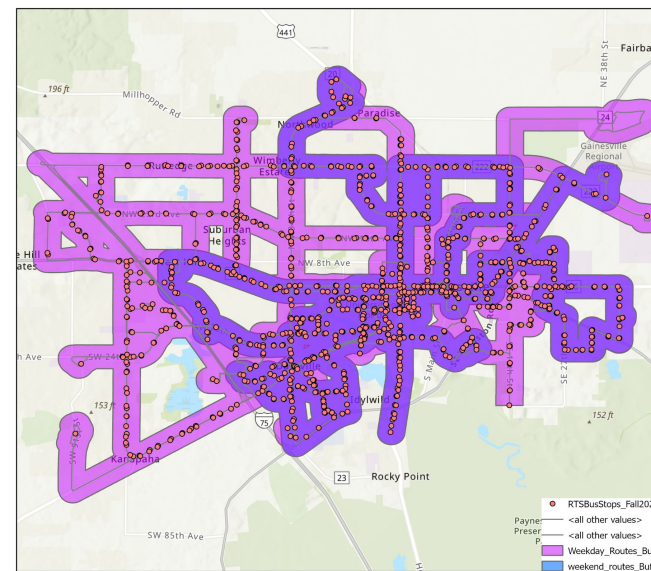
To analyze which locations in Gainesville have the most need for improved transit access, data regarding bus stop and route locations, as well as food desert locations were used. The bus stop/route data was obtained from The City of Gainesville. The Food Desert data was obtained from the USDA. A 0.25 mile dissolved buffer was created around the bus stops, to determine which areas are serviced within a 5-10 minute walk from a stop. A raster of Alachua county was also created from a feature class provided by the Alachua County Department of Growth Management so that the conditional statement analysis could include the entire Gainesville area. Then, the buffers and Food Desert polygons were converted to rasters and conditional statements were used to determine the areas that do not have easy bus stop access, and/or are in a Food Desert. Maps of these conditional statements were used to determine the severity of bus stop need. Areas which meet all 3 criteria (outside of the buffer on weekdays, outside of the buffer on weekends, and part of a food desert) were highest priority for a new bus stop. Areas that meet 2 of the 3 criteria were medium priority, and areas that meet 1 of the 3 criteria do not necessarily need new stops. Proposed stops were decided on based on the conditional raster, as well as the location of main roads.



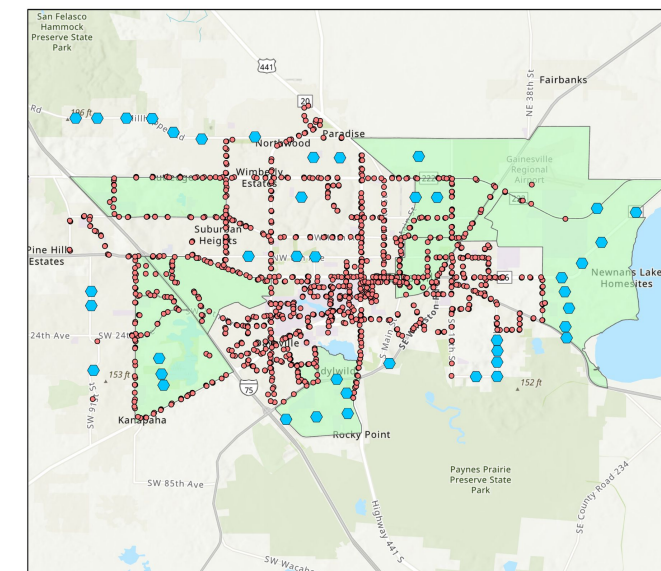
Buffer Analysis with Food Deserts, Weekday, and Weekend Routes.



Food Deserts in/around Gainesville, FL



0.25 Mile Buffers of Weekday and Weekend Route Area



Food Deserts Overlaid with Proposed stops

Conclusion

When analyzing the buffers, it became apparent that areas in Gainesville that require improved bus service, are located all around the city, but are generally areas further from the University of Florida. Many of the areas that met all 3 conditions were largely unpopulated—generally as golf courses, retention ponds, or the GNV airport, however many areas that met 2 conditions were populated areas. Proposed stops were selected based on areas that met either 2 or 3 of the criteria accounted for in the conditional testing, or areas in the food deserts that were not even included in the conditional testing due to being out of the range of the current RTS routes. These areas would technically meet all 3 criteria, as they are located in a food desert, and do not have RTS service on weekdays or weekends. Of the 42 proposed stops, 20 (47.6%) were located in areas identified as food deserts by the USDA. The proposed stops are identified as blue hexagons in the “Food Deserts Overlaid with Proposed Stops” map.

Limitations

A noticeable limitation is that the area of weekend service is smaller than the area of weekday service, so the raster analyses including weekend service buffer, cover a smaller area than the buffers not including this. Additionally, all of the rasters made with conditional statements are limited to the current service area of RTS, and therefore there are more areas outside of these buffers that likely need bus stops. This was accounted for when selecting proposed bus stops.

Research Sources

Lynch, Jake. “City Attempts to Address East Gainesville Needs with \$14 Million Plan.” *The Independent Florida Alligator*, 6 Feb. 2023, https://www.alligator.org/article/2023/02/gainesville-transit?ct=content_open&cv=cbox_latest.

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Data Sources

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