

Effect of GHS-Swamp Rabbit Trail on the Price of Properties in Greenville County

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Abstract

The Greenville Health System's Swamp Rabbit Trail (GHS-SRT) makes the 20 mile connection between Travelers Rest and Greenville. The trail provided the means of safe pedestrian transportation, while also encouraging physical activity. Both Greenville and Travelers Rest have benefitted greatly since the opening of the trail in 2008, but by how much? The goal of this study was to use GIS and the Hedonic Pricing Model to find out if the trail has any impact on the sale price of properties located near the trail. Data from multiple listings services (MLS) from the years 2010-2015 was used for the analysis. This data was geocoded and used to determine distance from the trail to the property location. Using this variable along with other basic house variables such as number of bedrooms, total square footage, etc. an Ordinary Least Square (OLS) linear regression model was developed.

The Model

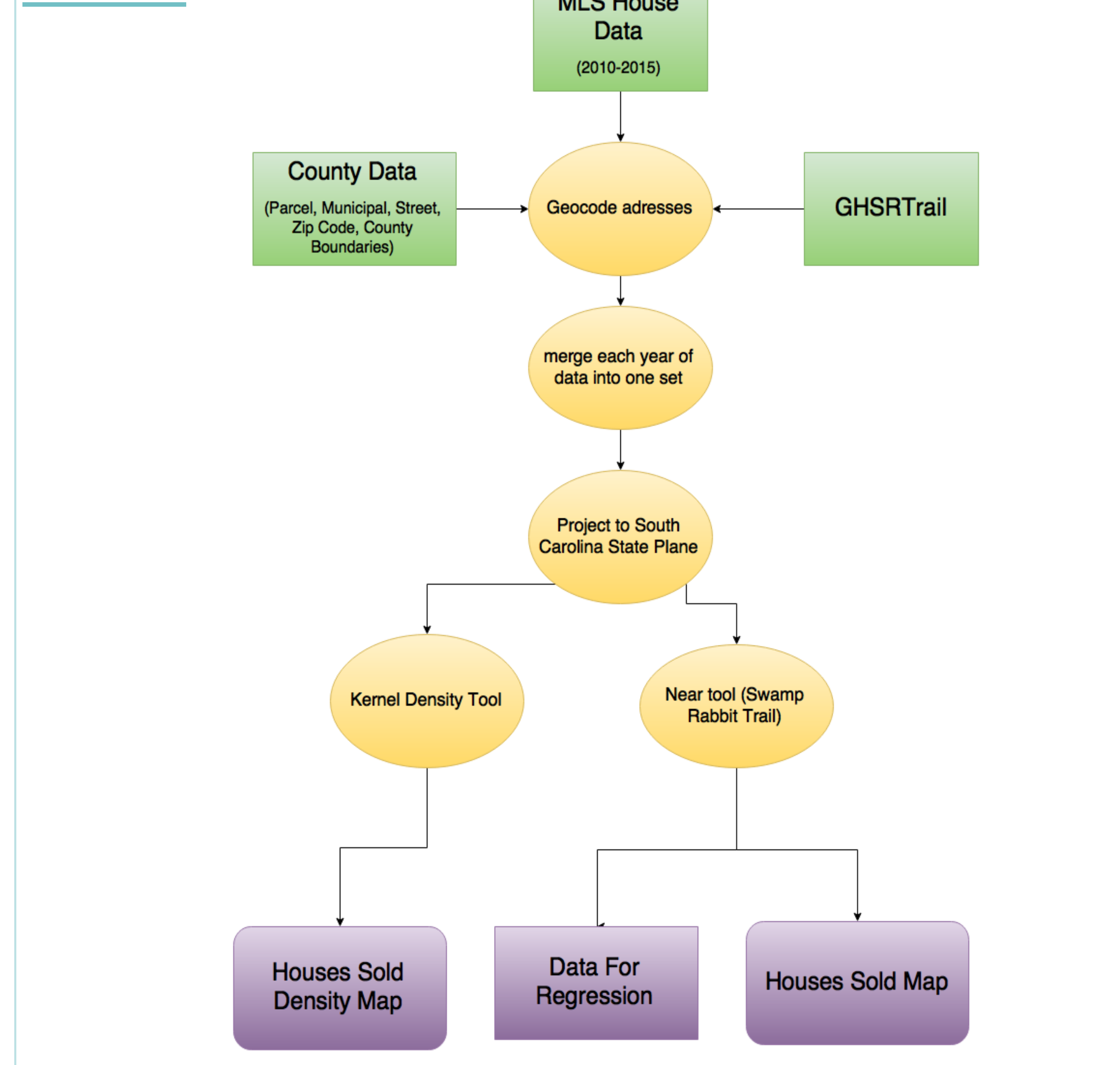
An Ordinary Least Squares (OLS) Linear Regression was used to model the data. 5,020 points of data were analyzed in STATA, an economic statistical software. The table above gives the statistics regarding the main variable under study, distance from the Swamp Rabbit Trail. This equation produced a coefficient of -378.971 and an Rsquared value of .7786. This Rsquared value means that there is moderate to strong correlation from the data points to the estimation created by the model.

Variable	Coefficient	Standard Error	t	P>[t]	95% Confidence Interval
Distance	-378.971	49.92	-7.59	0.00	-476.8361 to -281.1058

Conclusion

Distance between a house and the Swamp Rabbit trail was determined using the 'Near' spatial tool. This Variable along with others geocoded were used to run and OLS linear regression. This regression proves that there was around a 379\$ coefficient with proximity to the Swamp Rabbit Trail. Essentially this means that homebuyers (consumers) are willing to pay 379\$ more for their house to live one mile closer to the Swamp Rabbit Trail. This may not seem like a lot but it adds up. Also as you can see in Figure 2 The trail runs through a dense residential area. This means that it is more accessible to people increasing the opportunity of access to Downtown Travelers Rest and Downtown Greenville. A further study of the examination of retail and commercial real estate might show a greater value, especially in Travelers Rest, where more and more restaurants are starting every year

Methods



Sold Houses Near Trail

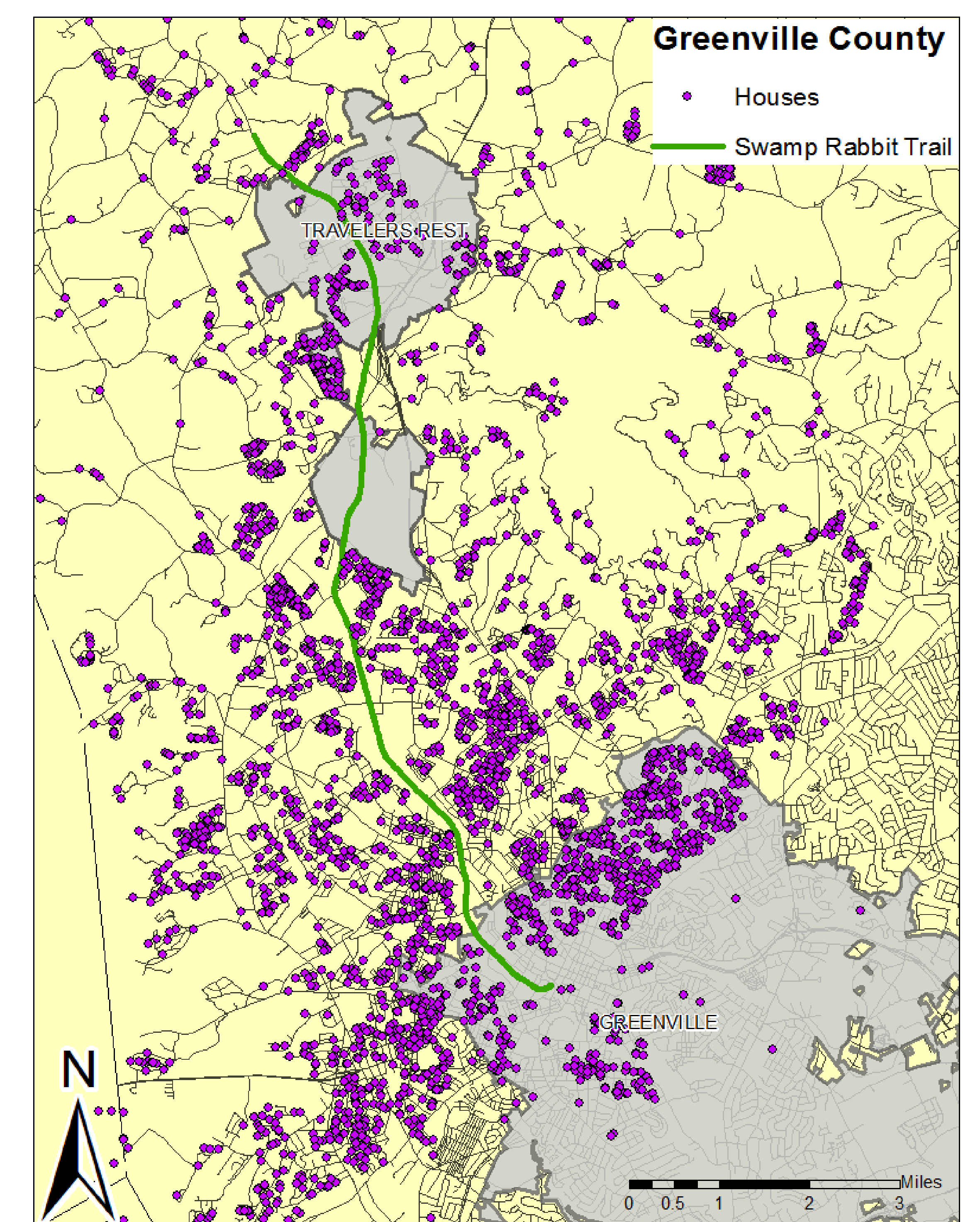


Figure 1: All houses sold from 2010-2015 geocoded and marked in purple

References and Data Sources

- Cavailhès, J., Brossard, T., Foltête, J., Hilal, M., Joly, D., Tourneux, F., et al. (2009). GIS-based hedonic pricing of landscape. *Environmental and Resource Economics*, 44(4), 571 – 590.
- Chen, H., Rufolo, A., & Dueker, K. J. (1997). Measuring the impact of light rail systems on single family home values: A hedonic approach with GIS application. *Center for Urban Studies College of Urban and Public Affairs Portland State University: Available from: <http://www.Upa.Pdx.edu/CUS>, GHS swamp rabbit trail.* (2015). Retrieved 10/23, 2015, from <http://greenvillerec.com/swamprabbit>
- Lake, I. R., Lovett, A. A., Bateman, I. J., & Day, B. (2000). Using GIS and large-scale digital data to implement hedonic pricing studies. *International Journal of Geographical Information Science*, 14(6), 521-541.
- Milla, K., Thomas, M., & Ansine, W. (2005). Evaluating the effect of proximity to hog farms on residential property values: A GIS-based hedonic price model approach. *URISA Journal*, 17(1)
- House Data from MLS (Multiple Listings Services)
Vector data from Rich Hanning, Greenville County GIS Department

Density of Houses Sold

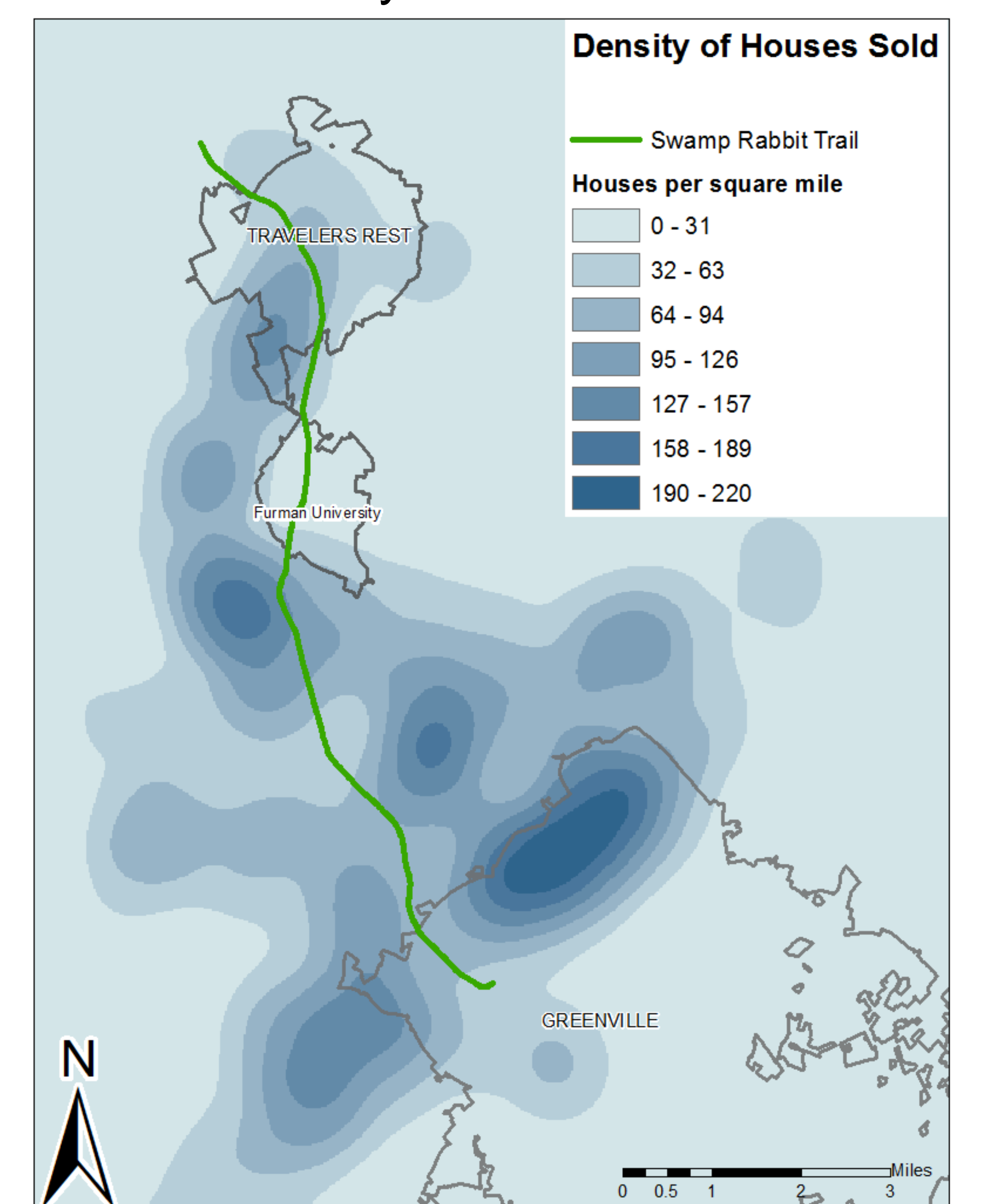


Figure 2: Map shows density of houses sold in the area around GHS-SRT. Kernel Density tool was used to create this map. The parameters including a cell size of 100 and a radius of one mile.