

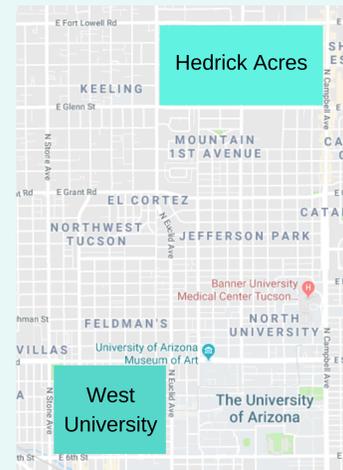
NEIGHBORHOOD CONNECTIVITY, WALKABILITY AND SAFETY IN TUCSON, AZ

Introduction

Sidewalks are necessary features that can affect the connectivity, walkability and safety of a neighborhood but are often unacknowledged. By adding sidewalks or repairing them it can increase the safety of pedestrians, encourage them to walk to their destination and overall improve the aesthetics of the neighborhood. This study will compare two neighborhoods in Tucson, one with adequate sidewalks and the other lacking in sidewalks. The goal of this research is to see the differences between neighborhoods and to find solutions to improve them so that residents feel comfortable.



Study Area



Hedrick Acres became a neighborhood in 1998, it has suburban like features by having large block sizes, making it car oriented. The houses also have driveways, large front and back yards. There are currently 3,527 residents living in that area. Out of those residents, 42% are between the ages of 15-29. It is near a grocery store, and several restaurants.

West University is a historical neighborhood built around the 1890s. The layout of the streets and houses have a traditional features such as being compactly built, no large front yards, or driveways. There is a total of 4,526 residents, 66.5% being between the ages of 15-29. It located right next to the University of Arizona and Tucson High School. In addition, it has a variety of amenities nearby such as parks, restaurants, and stores.

Methodology

The two neighborhoods in this study are Hedrick Acres and West University. Using satellite imagery the length of the pathway was measured and then categorized into paved, unpaved, and not present. Using the data collected from the pathway measurements, each category was put through a t-test two-sample assuming unequal variances with the interpretation of a two-tail p-value to see if there was a statistically significant difference between the data sets.



Data/Results

Below are the the percents of the curb measurements that were taken, and transportation scores that were acquired through Walk Score. The walking score was produced by looking at the amount of routes to get to destinations. Transit score calculates accessibility by the distance to bus stops while also taking into account the frequency of the bus route. The bike score looks at bike infrastructure, amount of destinations, road conditions and connectivity. West University has an overall better score in all of the categories. However, after running t-tests it was found that there was only a statistically significant difference between the two neighborhoods in the amount of curbs unpaved, and not present.

Percent of Type of Walking Path and Type of Transportation						
	Paved	Unpaved	Not Present	Walking Score*	Transit Score*	Bike Score*
Hedrick Acres	36.8%	59.3%	3.9%	62%	39%	96%
West University	65.1%	21.1%	13.8%	85%	60%	100%
P-value	0.693	0.0049	0.0181			

Walking: **62%**-Somewhat Walkable **82%**-Very Walkable
 Transit: **39%**-Some Transit **60%**-Good Transit
 Bike: **96-100%** Biker's Paradise

Conclusion

After conducting site visits it was seen that over all West University had the best sidewalk infrastructure. However some recommendations are adding curb cuts, lighting, and implementing traffic calming methods. As seen from the chart, Hedrick Acres needs to invest in sidewalks, and improve the conditions that they are. In addition to curb cuts and lighting. Tucson Ordinance Code 25-12 states that residents are responsible for keeping the sidewalks near their homes in good conditions. Applying these recommendations will improve the connectivity, walkability and safety