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Healthy Communities in Southern Illinois

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The Simon Review

Healthy Communities in Southern Illinois

By
Shiloh L. Deitz

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SIU SOUTHERN ILLINOIS UNIVERSITY
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EXECUTIVE SUMMARY

Due to industrial and lifestyle changes, rural and small town areas are losing population and suffering economic hardship. These areas also suffer from the poorest health. However, most rural or small town residents also believe in the American Dream, revitalizing their local area, and preserving the small town or rural way of life.

In this paper, I look at the relationship between obesity and local infrastructure – including walkability and access to healthy food – in southern Illinois. I then make suggestions for development policies for the region in the context of local public opinion.

Overall, this study finds the following about the built environment:

- ❖ The foods available are mostly unhealthy (only 21% of food stores provide healthy food).
- ❖ In many parts of southern Illinois people travel 10 miles or more to reach healthy food.
- ❖ There is a significant relationship between the distance to healthy food and obesity – as the distance increases so do obesity rates.
- ❖ Overall the area is not very walkable and people tend to rely on cars.
- ❖ Areas that appear to be walkable due to distance to amenities or commuting behavior, lack quality and safe infrastructure for walking and biking.
- ❖ There is a significant correlation between how walkable an area is and obesity – more walkable areas exhibit lower obesity rates.

Within the environment described above southern Illinoisans look favorably on changes that might improve health, a way of life, and the economy.

- ❖ Southern Illinoisans overwhelmingly see downtown revitalization as important (84%).
- ❖ They are more likely to buy a product because it is local (77%).
- ❖ Lastly, they favor relying on a car (63%). However, according to a Jackson and Williamson county poll over three-fourths of the residents of those counties also support sidewalk expansion and maintenance, expansion of bike friendly lanes, improvement of bike and pedestrian trails, and improved streetscaping.

Moving forward I suggest the following policies for southern Illinois development to improve the health and quality of life, provide economic stimulus, and protect the natural environment.

1. Create dense urban cores, however small.

Density could be achieved by creating zoning areas that target the downtown for growth and utilizing tax incentives to redevelop the area. This downtown growth should include:

- ❖ Locating new and existing community services within the downtown (e.g. library, post-office, schools, governmental offices).
- ❖ Offering a mix of housing options that serve renters, owners, people of all ages, and people of all incomes.

- ❖ Creating shared amenities and public spaces for common use. These shared spaces should promote human interaction, be safe and accommodating, have visually interesting design, relate well to the overall downtown, and reflect the unique culture or history of the area.
2. Improve paths and sidewalks for cyclist and pedestrian safety.
 - ❖ A downtown core should be accessible to the population by all modes of transportation. Community members can start by assessing the connectivity of the local area to the downtown, major residence areas, and basic amenities. The infrastructure for walking and biking should first be developed to connect people to the downtown.
 - ❖ Promoting the creation of educational pamphlets, visits to community centers by pedestrian and cyclist advocates, and educational segments on the radio or local television news station could help to educate the community on the laws related to pedestrians and cyclists. These efforts might also increase awareness and use of new infrastructure for walking and biking.
 3. Place emphasis on local food development. Particularly in areas with low food access.
 - ❖ An assessment should be made of what people are already doing, identification of key players, and connecting individuals pursuing local food development and food access.
 - ❖ In the areas with low food access and the downtown core, local leaders should focus on the creation of one new farmers market or local grocery store if there is not already one.
 - ❖ The USDA has many grants for local food development. These can be found on the agency's website. If farmers need more support, they should be put into contact with someone a local liaison or agricultural leader who can help them connect with others and apply for grants.
 - ❖ Lastly, efforts should be made to make sure local foods are affordable for all residents.
 4. Highlight and preserve southern Illinois' natural beauty and farmland.
 - ❖ The above recommendations should help to achieve this goal. However, as any new developments are assessed leaders should approach the natural areas and farmland as a local treasure that can produce jobs and attract visitors. Perhaps more local tours can be organized by tourism offices to expose people to the local farmland and nature areas.
 - ❖ Agro-tourism should be established, perhaps through a farmer-led local organization that makes joint decisions and collaborates on marketing materials, and creation of a "farm trail" similar to the wine trail.

While the southern Illinois region currently faces economic challenges, and suffers from poor health and declining populations, the area is also full of potential and ripe for positive changes. This study highlights the positive potential and resources in the region to improve community health, environment preservation, and local economies.

ABOUT THE AUTHOR

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1 INTRODUCTION

As industries and lifestyles shift, rural and small town areas are losing population while urban areas are booming.¹ The United States is moving away from some traditional industries that previously employed many non-urban residents – such as coal mining. As a result, some rural and small town areas are facing economic hardship as well. Non-urban areas are also suffering from the poorest health.²

Despite this, the American Dream is very much alive in non-metropolitan areas. According to a recent poll by the Paul Simon Institute, in southern Illinois 68.1% believe that it is possible to start out poor, work hard, and become rich.³ Southern Illinoisans also believe that the rural way of life is worth fighting for.³

Thus, while according to some measures, non-metropolitan areas are experiencing decline, public opinion indicates that these areas are also ripe for changes. In this paper I suggest two major development policies for southern Illinois – an increase in local healthy food supplies and utilization and better infrastructure for walking and biking.

Although emphasis is placed on health I argue that the policies I propose would provide a triple benefit – environmental protection, economic growth and resilience, and improved community health.

As southern Illinois looks at revitalizing its small towns and communities, the impact that various decisions will have on the health of the community is imperative. In the following pages, empirical analysis of existing data will provide a backdrop for proposing policy solutions for southern Illinois' small towns. I will begin with a review of relevant findings on walkability and food environments, I will then present geographic data on the southern Illinois region, the projected effect of environmental changes on obesity in southern Illinois will be analyzed using this data, and finally policy recommendations will be made in the context of regional public opinion.

1.1 DOWNTOWN RENEWAL

In southern Illinois there is a strong public will to revitalize and renew the region's small towns and cities. Two recent Southern Illinois Polls conducted by the Paul Simon Public Policy Institute, provide indicators of public opinion on these issues⁴.

- In response to the question, “how important would you say it is to improve the downtown of your community,” 84.3% of the southern Illinois sample said that it was either “very”

¹ ERS 2015

² Meit et al. 2014

³ PSPPI 2015

⁴ Results are from the fall 2015 Southern Illinois Poll and spring 2015 Simon Poll. Both polls were conducted by the Paul Simon Public Policy Institute.

or “somewhat important”, only 67.8% of individuals across the state responded the same way (see table 1).

- Individuals born in southern Illinois place more importance on downtown revitalization than those born elsewhere in Illinois (8.2% of southern Illinois natives responded “not important” compared to 15.6% of Illinois natives not born in southern Illinois).
- People who were “not employed” were more likely to see downtown revitalization as a very important priority (70.0% compared to 61.5% full-time workers, 59.4% part-time employees, and 55.3% retired persons) – suggesting a perceived link between downtown renewal and job creation.
- Lastly, millennials (those 35 and under) were more likely than any other age group to believe it is very important to improve the downtown area (71.0%). Six in ten people aged 36-50 see the improvement of the downtown as very important (61.0%), 59.5% of those 51-64, and 55.8% of those 65 or older.
- Eighty-five percent of conservatives see it as important alongside an almost equal (81.8%) proportion of liberals.

These data suggest favorable public opinion toward revitalizing the small towns of southern Illinois. While no specific guidelines are contained within these responses, they suggest that there is a social and political will to improve the area. In the polarized political climate that currently exists in the state and nation, this consensus should be built upon for the health of local communities.

2 HEALTHY DESIGN IN SOUTHERN ILLINOIS

2.1 STUDY AREA

This study focuses on the 18 southernmost counties of Illinois. The counties included in the study are: Alexander, Franklin, Gallatin, Hamilton, Hardin, Jackson, Jefferson, Johnson, Massac, Perry, Pope, Pulaski, Randolph, Saline, Union, Washington, White, and Williamson (see figure 1). These are the counties that the Paul Simon Public Policy Institute uses for their Southern Illinois Poll.

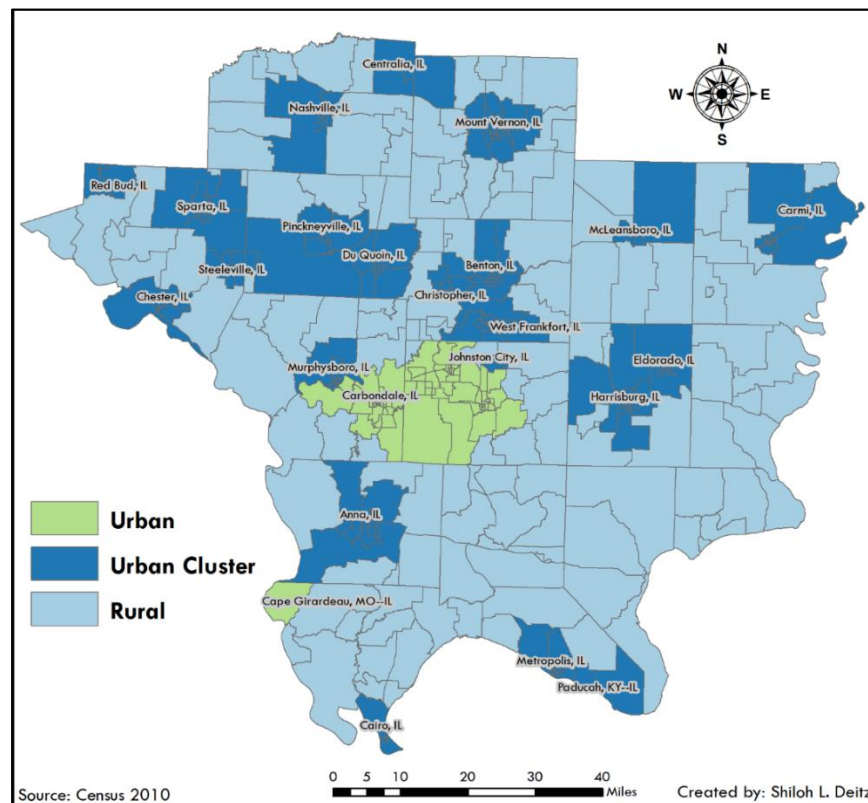


FIGURE 1. SOUTHERN ILLINOIS URBAN, URBAN CLUSTER, AND RURAL AREAS

I look at the built environment in southern Illinois, the correlations between the built environment and obesity, the potential impact of interventions, and public opinion or receptivity to proposed interventions in the region. By built environment I mean the human made space in which people live, work, and recreate regularly. Interventions are analyzed separately for areas with different population densities classified by the census as urban, urban clusters, and rural⁵

⁵ According to the U.S. Census Bureau urban clusters are any areas where there is a contiguous population settlement of at least 2,500 people and less than 50,000 (i.e. at least 2,500 people live in one area without jumping (uninhabited area) to the next settlement) (Groves 2011). These areas are identified through census tract and census block population density and other land cover characteristic. First, census tracts with a land area less than three miles and at least 1000 persons per square mile (ppsm) are identified and joined with contiguous tracts also meeting the criteria. Next, tracts that are contiguous to the tracts identified in the first step and that have at least 500 ppsm and a land cover of less than three miles are identified and joined with other tracts meeting the criteria. Next, contiguous census blocks with at least 1000 ppsm are identified and joined. The remaining census blocks are identified until no more meet the criteria if: they have a population of at least 500 ppsm, or at least one-third of the

(see figure 1). The only urban areas in the region are Cape Girardeau and the Carbondale-Marion metropolitan area which includes the cities of Carbondale, Herrin, and Marion. While no individual city in the Carbondale-Marion urban area has a population large enough to classify it as urban, the contiguous nature of the cities leads to the urban classification.

2.1.1 Health and Obesity

I use obesity as a measure of health, because my focus is on food and walkability. The top cause of obesity is energy imbalance – meaning more calories are taken in than those expended in exercise. The unit of analysis for the aggregate data was the block group⁶. In southern Illinois the block group percentage obese ranges from 20.2% to 46.3%, the average rate is 32.8% and the median is 33.1% (see figure 2). The average obesity rate in the U.S. is 33.4%. In southern Illinois (like the U.S. in general) obesity rates are higher in rural areas than urban ones. There are significant clusters of neighborhoods with low levels of obesity in Anna, Carbondale, and Murphysboro. The obesity rate in these neighborhoods range from 20.2% to 31.3%. There are significant clusters of neighborhoods with high obesity rates in Benton, Cairo, and Mount Vernon. In these neighborhoods the obesity rate ranges from 35.5% to 45.7%.

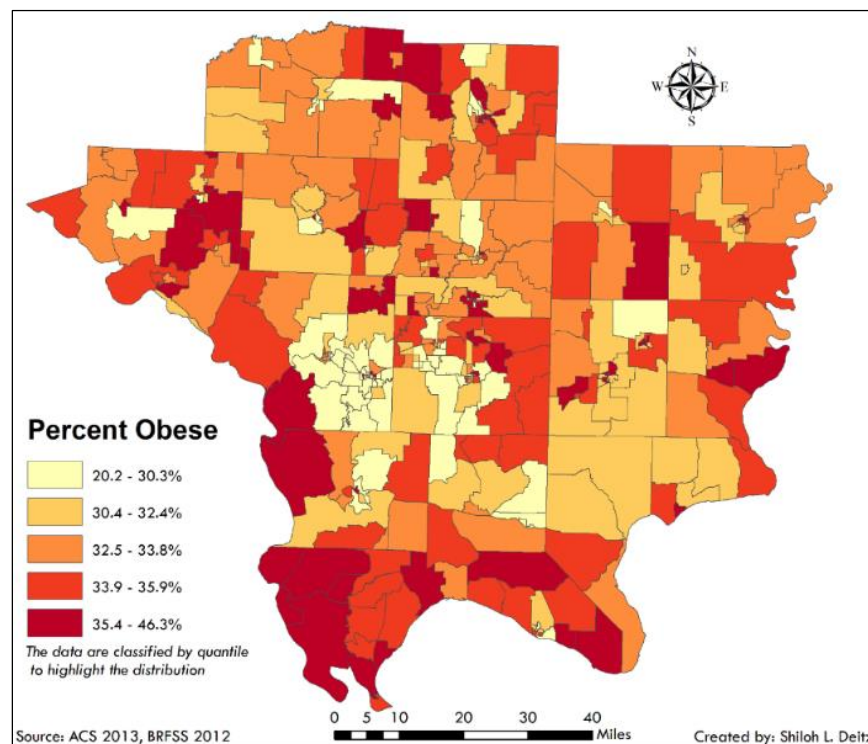


FIGURE 2. OBESITY RATES IN SOUTHERN ILLINOIS BY BLOCK GROUP

block has territory with imperviousness of at least 20% and is sufficiently compact, or at least one-third of the block has territory with imperviousness of at least 20% and at least 40% of its boundary is contiguous with an already identified urban boundary (Groves 2011). A rural area would not meet that classification due to having less population, while an urban area has more.

⁶ A census block group is the smallest geographical unit for which the census bureau publishes sample data. Block groups are contiguous population areas (like neighborhoods) with populations between 600 and 3000 people.

It is well established in the literature and the analysis confirmed that obesity is a geographically varying phenomenon and southern Illinois is not exceptional in that way. Obesity varies geographically in the region. The variance in obesity can be explained by multiple environmental factors such as culture, the built environment, the natural environment, political conditions, and economic conditions. Specifically, there are strong correlations between obesity and level of education, income, age, race, and population density. These factors interact together and with measures of the built environment such as walkability or food environment to explain a large part of the variation in obesity. The interactions and varying influences of these factors suggest something about culture – social influences meet built environment infrastructure in specific ways across different geographies.

2.2 FOOD

When I refer to food environment, I am referring to the environmental factors that influence food choices and diet quality.⁷ For example, distance to food sources, density of food stores, and cost of food.⁸

Past research has identified relationships between food access and obesity, as well as links between access and overall social disadvantage. More specifically, living far from healthy food or in an area with a low density of healthy food (but high density of unhealthy options) increases the risk of obesity.⁹ Minorities and the poor are also more likely to live in an area with large distance to healthy food and higher convenience or fast food store density.¹⁰

In this project I propose an emphasis on local food in southern Illinois as a way to improve health, protect the environment, and provide economic stimulus. By local food, I am in part referring to the distance that food travels but my emphasis is on market arrangements – namely, direct sales between farmers and local buyers (including organizations).¹¹

Nutritionally, local food can improve the health of an area by providing fresher foods with more nutrients¹² and greater access to healthy food. Local food sources are often small operations and research has found that these foods tend to provide more nutrients compared to their mass produced counterparts. Local foods also provide greater food security. Economically, local food can be a development strategy that emphasizes the uniqueness of a local area, local farmers can retain more of the profit share, and jobs can be created through growth of a new industry.¹¹ Ben Hewitt's (2010) account of Hardwick, Vermont details how emphasis on local food and cooperative agriculture created jobs, improved downtown, and attracted investment to the local area. There are many other examples like his. Lastly, the environmental benefits are

⁷ ERS 2014

⁸ CDC 2014a; 2014b

⁹ Boone-Heinonen et al. 2013; Casey et al. 2014; Chen et al. 2010; Edwards et al. 2009; Frank et al. 2012; Giskes et al. 2011; Hilmers, Hilmers, and Dave 2012; Hutchinson et al. 2012; Inagami et al. 2006; Morland et al. 2002; Morland and Evenson 2009; Morland et al. 2006; Powell et al. 2007; Powell and Bao 2009; Schafft et al. 2009

¹⁰ Alviola et al. 2013; Bellinger and Wang 2011; Choi and Suzuki 2013; Powell et al. 2007; Sohi et al. 2014.

¹¹ Martinez et al. 2010

¹² Lea 2005

numerous. First, emissions are lowered by reducing food shipment, and local farmland is preserved by providing economically viable business for local farmers.

2.2.1 Food setting in southern Illinois

As is typical across the U.S., only 21% of the 573 food sources in southern Illinois provide healthy food.¹³ In some areas of the study region people have to travel much more than 10 miles to reach healthy food and many travel at least 10 miles. Figure 3 shows the distance to food stores (both healthy and unhealthy) for residents. Living outside of the colored service areas suggests a travel distance of over 10 miles or 16 kilometers to food. Living in the area shaded red suggests that only unhealthy food is within 10 miles (16 kilometers).

The average distance to any food is 3422.2 meters or 2.1 miles, the average distance to unhealthy food is 3731.5 meters, and the average distance to healthy food is 5703.9 meters or 3.5 miles (see figure 3). The distance to the nearest food of any kind ranges from 19 meters to 22547 meters (14 miles). The distance to healthy food ranges from 141 meters to 34063 meters (21.2 miles).

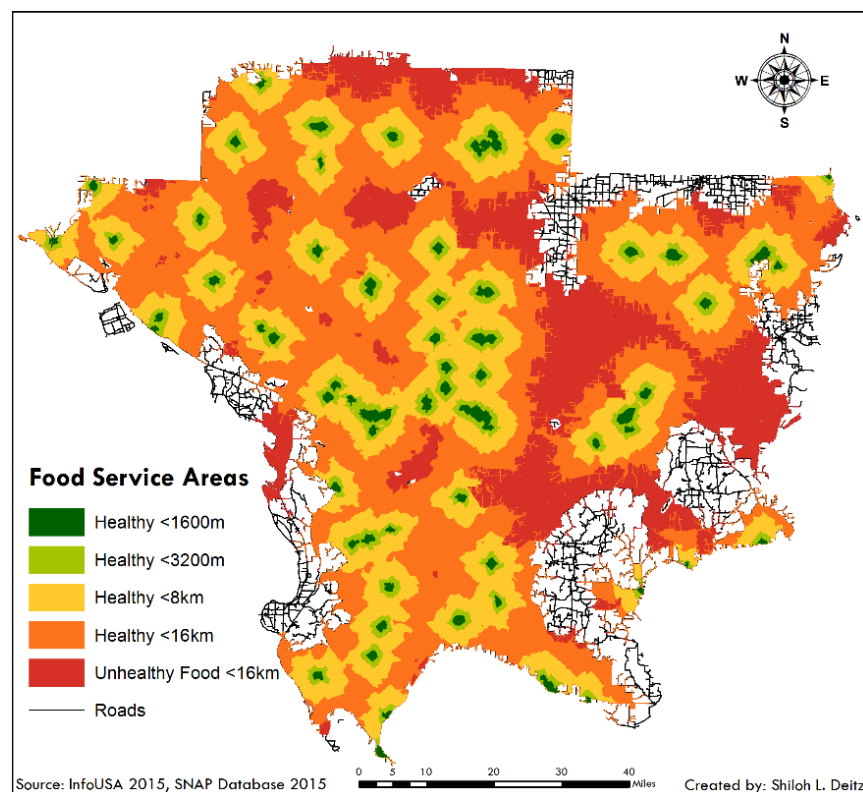


FIGURE 3. HEALTHY AND UNHEALTHY FOOD SERVICE AREAS

Twenty-three neighborhoods cluster with other areas with high distances to healthy food (see figure 4). These areas are majority rural (19), but also found in Centralia and Cape

¹³ Deitz 2016.

Girardeau.¹⁴ The distance to healthy food ranges from 8.5 to 21.2 miles (13708 meters to 34063 meters) in these areas. Five neighborhoods form significant clusters with other neighborhoods with low distances to healthy food. These neighborhoods are in Carbondale (3), Murphysboro (1), and Johnston City (1). The distance to healthy food in these neighborhoods ranges from 239 meters to 954 meters.

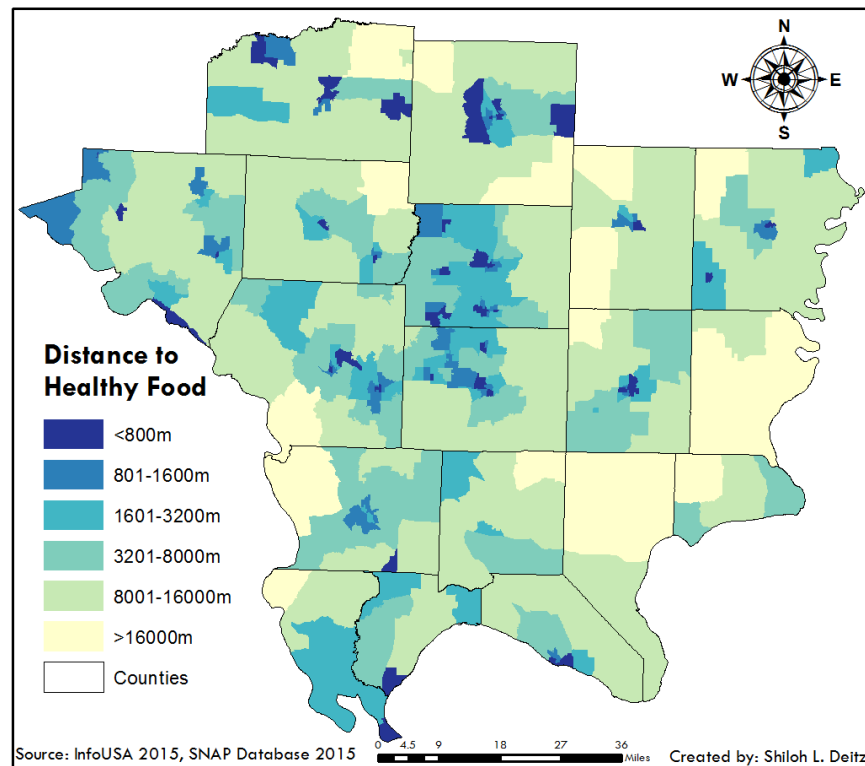


FIGURE 4. DISTANCE TO HEALTHY FOOD

2.2.2 Interventions

The strongest correlation between obesity and food in southern Illinois is between the number of healthy food stores within 8 kilometers from a residence and obesity. The relationship is negative, meaning as the number of healthy food stores within that distance goes up, the obesity rate goes down. This is also the strongest correlation in urban parts of southern Illinois. In urban clusters and rural areas, the strongest relationship is between number of food (or healthy food) stores within 10 miles and obesity. Oddly, in urban clusters this relationship is positive (suggesting an increase in stores leads to an increase in obesity), while in rural areas it is negative.

This suggests that an intervention that focused on increasing the number of healthy food options within 5 miles of resident homes in urban areas and increases of healthy food options

¹⁴ These could be false results because they are both at the edges of the study area. Other food could be close by but outside of the study area in neighboring Missouri or central Illinois.

within 10 miles of resident homes in rural areas would decrease obesity. The positive relationships observed between food variables and obesity in urban clusters suggest that a cultural or educational based intervention may be best suited to those areas. This intervention could first focus on areas where observed obesity rates are particularly high – namely, the Benton, Cairo, and Mt. Vernon areas.

2.2.3 Public Opinion and Policy

Local food is more important to southern Illinoisans than Illinoisans across the state. In southern Illinois over three fourths of the Paul Simon Institute’s Southern Illinois Poll sample population are more likely to buy a product because it’s local (76.8%) compared to 58.0% statewide (see table 3).¹⁵

- Those with a college education or more are more likely to buy locally grown products than those without a college education (80.8% compared to 69.3%).
- Everyone is more likely to buy local products, regardless of income – however those with the highest incomes are most likely. About seven in ten (71.4%) of those with incomes under \$50,000 are more likely to buy local products, 84.0% of those with incomes between \$50,000 and \$100,000, and 90.0% of those with incomes over \$100,000.

As suggested above, local food can stimulate local economies – particularly in rural and small town areas. The data above suggest that an increase in local food options, paired with educational campaigns on healthy eating may reduce obesity in the area. Thus, alongside public will for an increase in local products there is both an economic and health benefit that would come from an increase.

An EPA report on successful small towns, found that prosperous small towns can attribute much of their vibrancy to their ability to emphasize existing assets and distinctive resources.¹⁶ Such strategies lead to both adaptive and resilient communities that are not dependent on the resources or recruitment of big industries or firms.¹⁷ Southern Illinois has a distinctive natural landscape – in fact, most members of the SIUC alumni association remember southern Illinois as a beautiful place (92%).¹⁸ Positive steps have been taken by many to increase local food production; however, this should be a wholesale concerted effort rather than a niche market – perhaps integrating with local Chamber of Commerce groups and city planners. In this way, the natural beauty can be preserved and emphasized, more money will stay in the region, local farmers can make a good living, and local jobs will be created.

¹⁵ Results are from the fall 2015 Southern Illinois Poll and spring 2015 Simon Poll which covered the entire state of Illinois.

¹⁶ EPA 2015

¹⁷ See Dolezal 2014 for more on creative local economies in southern Illinois.

¹⁸ Data comes from the fall 2015 Alumni Community Survey.

2.3 WALKABILITY

In this project the walkability of the region was analyzed alongside an analysis of the impact of interventions based on walkability. A walkable neighborhood has been broadly defined as one which combines population density, pedestrian-friendly design, and diversity of destinations.¹⁹

Walkability is associated with higher rates of physical activity²⁰ and lower rates of obesity.²¹ The environmental benefits of decreased reliance on cars is obvious. The economic benefit comes in approaching this as a community development strategy²² - and emphasizing dense, vibrant urban cores in small towns.

2.3.1 Level of Walkability in Southern Illinois

The number of food stores within half a mile (800 meters) or one mile (1600 meters) as well as elements of work commute (time and mode) are suggestive of overall walkability of a region. For this analysis food count measures, average travel time to work, and percentage that walk, bike, or take public transportation to work were used.

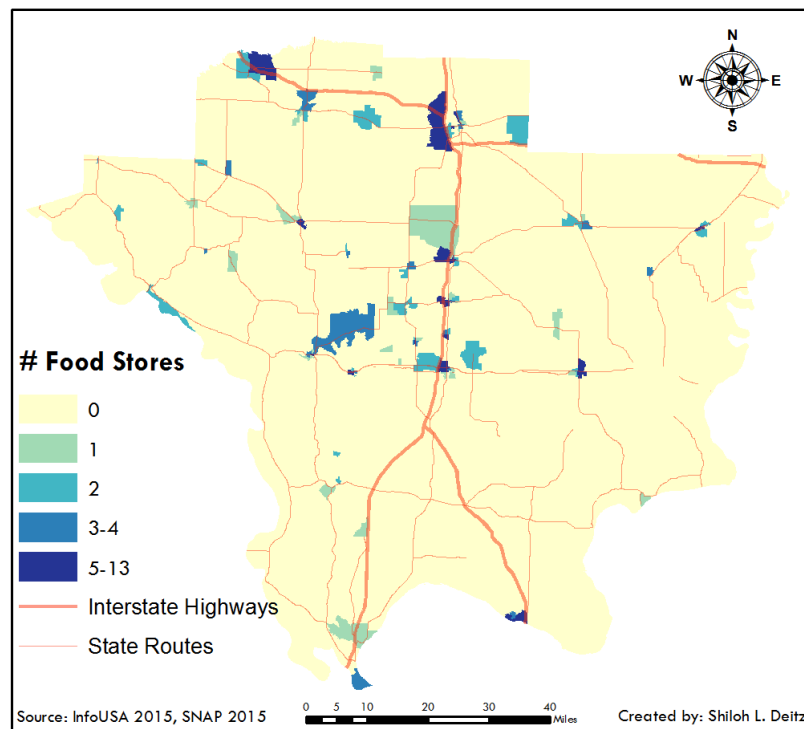


FIGURE 5. FOOD STORES WITHIN 800M²³

¹⁹ Cervero and Kockelman 1997.

²⁰ Berke et al. 2007; Frank et al. 2005; Freeman et al. 2012; Humpel, Owen, and Leslie 2002; Sallis et al. 2009

²¹ Boone-Heinonen et al. 2013; Booth et al. 2005; Frank et al. 2004; Mackenbach et al. 2014; Sallis et al. 2009; Wang et al. 2013; Zhang et al. 2014

²² EPA 2015.

²³ Data in the number of food stores within 800 meters map are classified by quantile.

The average number of stores within 800 meters of the block group population weighted centroid is 1.0. However, in at least 69% of the neighborhoods there are no food sources within that distance. Twenty-eight neighborhoods have five or more food sources within 800 meters (see figure 5). These neighborhoods are found in Benton (2), Carbondale (10), Carmi (1), Harrisburg (2), Johnston City (1), Metropolis (3), Mount Vernon (3), Murphysboro (1), Pinckneyville (2), and West Frankfort (2). There are a few significant clusters of block groups with high numbers of food stores within 800 meters of the population weighted block group centroids (see figure 5). The majority of these are along interstate highway 57 in locations where a state highway crosses the interstate. There are also a few along state route 13 through the Carbondale-Marion metropolitan area.

The average number of stores within 1600 meters of the block group population weighted centroid is 3.4. In 46% of the neighborhoods there are no food sources within that distance. Sixteen neighborhoods have fifteen or more food stores within about a mile. These neighborhoods are in Benton, Carbondale, Harrisburg, and Mount Vernon (see figure 6). There are 43 neighborhoods that cluster with others with high numbers of food stores within 1600 meters. These neighborhood are along interstate or state highways in the cities of Carbondale, Carmi, Harrisburg, Metropolis, Mount Vernon, Murphysboro, and West Frankfort. The number of food stores within 1600 meters ranges from six to twenty-six.

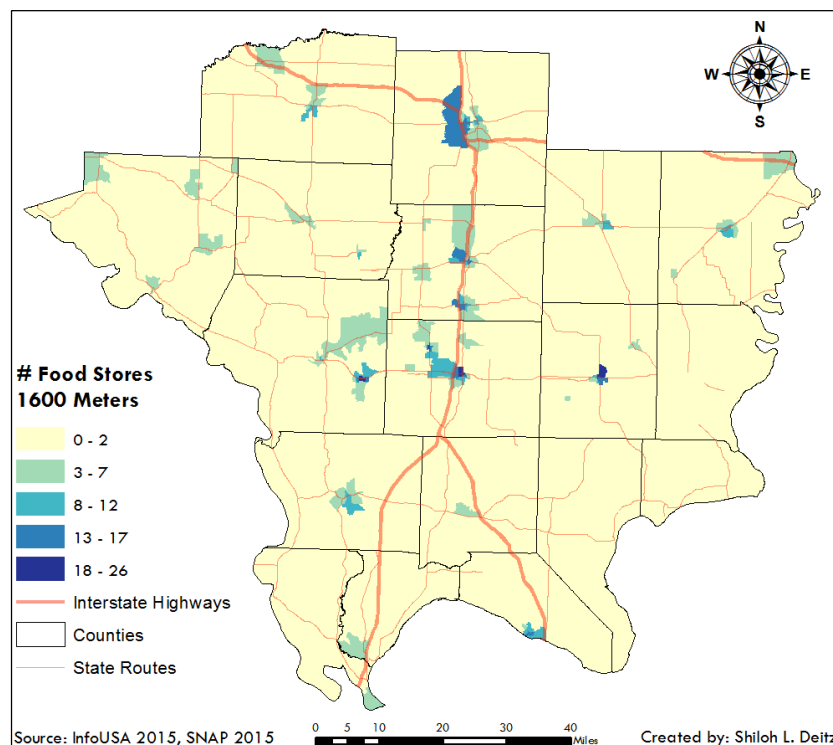


FIGURE 6. FOOD STORES WITHIN 1600M²⁴

²⁴ Data in the number of food stores within 1600 meters map are classified by natural jenks.

While the average rate of workers who walk, bike, or take public transportation in southern Illinois is 3.78%, in 72% of the block groups the rate is below the average. In over 20% of the neighborhoods no one gets to work that way, in another fifth of the neighborhoods only zero to 1.8% do, in the top fifth of neighborhoods the rate varies from 6.5% to 81.4%. The top eight neighborhoods are all in Carbondale and Murphysboro (see figure 7). The high percentage of persons walking, biking or taking public transportation in the Carbondale area as noted above, forms a significant spatial cluster of high values. However, there are also significant outliers in the area. While some of the neighborhoods have a high rate of persons getting to work on foot, by bike, or on public transportation, other neighborhoods nearby exhibit the low rates that are typical of the region as a whole (see figure 7).

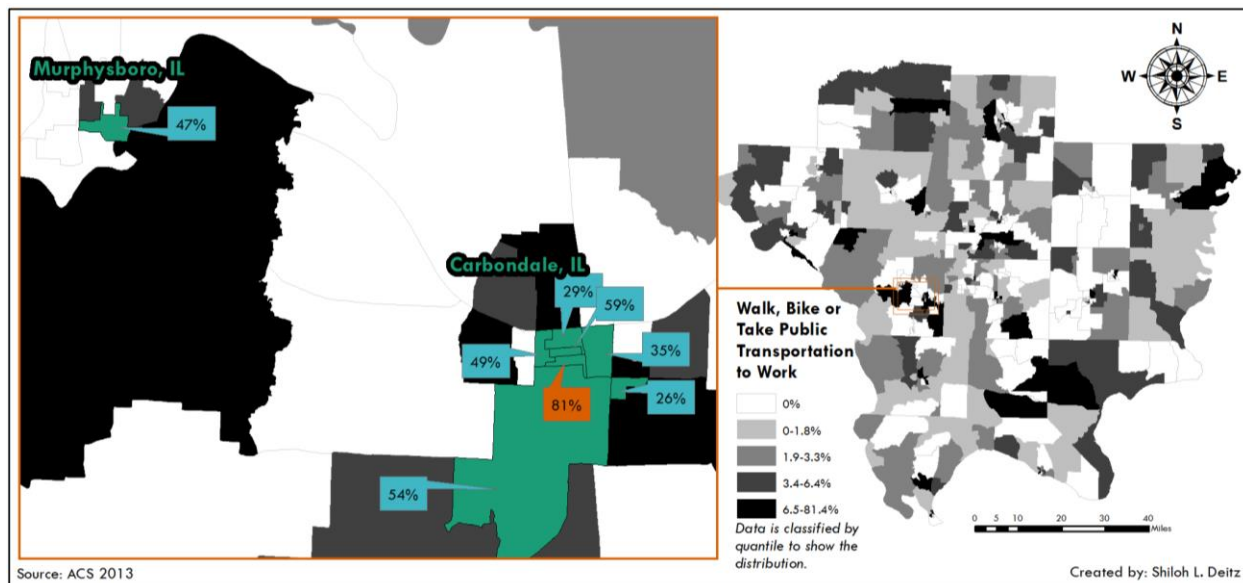


FIGURE 7. % THAT WALK, BIKE, OR TAKE PUBLIC TRANSPORTATION TO WORK

The average commute time in southern Illinois is 24.2 minutes. The lowest average commute time for a neighborhood is 10.7 minutes, while the neighborhood with the longest commute travels 52.0 minutes to work on average. The top eight neighborhoods for shortest commute time are found in Carbondale. Specifically, of the top 20, 13 are in Carbondale, 4 are in Mt. Vernon, 2 are in Chester, and one is in West Frankfort. The average travel time in these neighborhoods with the shortest time ranges from 10.7 to 13.9 minutes. The 20 neighborhoods with the longest average travel time to work are majority rural (13). The small towns with the highest commute times are Christopher, Pinckneyville, Du Quoin, Mcleansboro, and Harrisburg. In these neighborhoods, the average commute ranges from 34.5 minutes to 52 minutes (see figure 8).

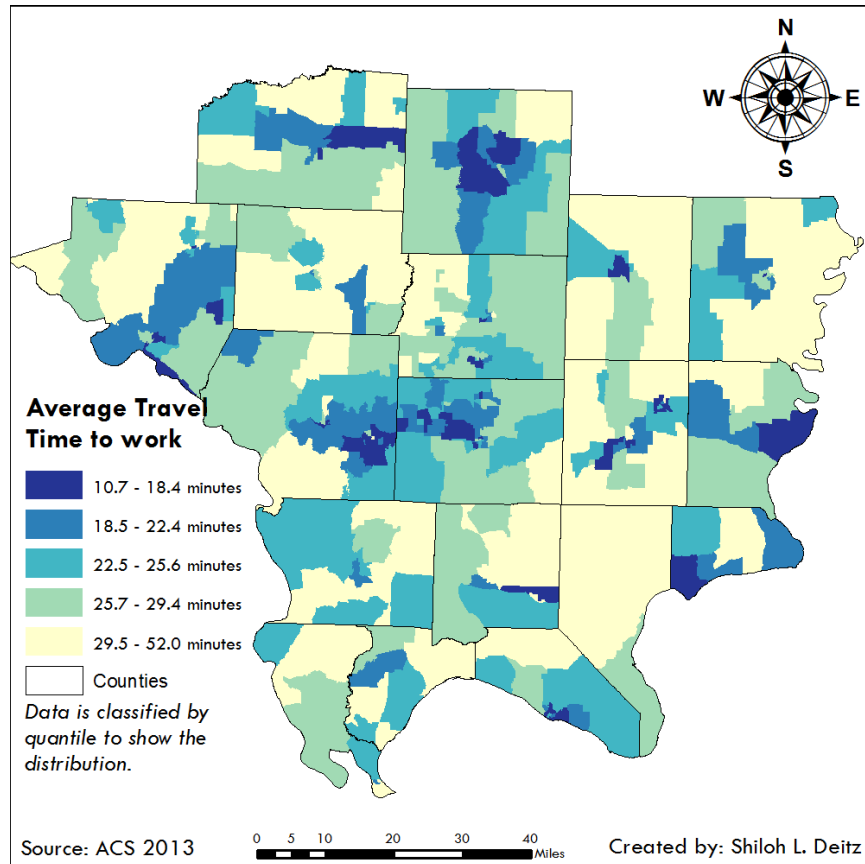


FIGURE 8. AVERAGE TRAVEL TIME TO WORK

There are significant clusters of high average travel times in 17 rural neighborhoods and the small towns of Christopher (2), Pinckneyville (1), and Du Quoin (1). The range of travel time for these 21 areas is 30.1 minutes to 44.1 minutes. Fifty-two neighborhoods cluster with other neighborhoods with relatively low average travel times to work. These neighborhoods are in Carbondale (32), Mount Vernon (19), and Murphysboro (1). The average travel time in these low clusters ranges from 14.1 minutes to 21.3 minutes. (see figure 8).

As noted above, there are neighborhoods with high numbers of food stores within 800 meters in Benton, Carbondale, Carmi, Harrisburg, Johnston City, Metropolis, Mount Vernon, Murphysboro and Pinckneyville. There are higher proportions of the population walking, biking, or taking public transportation in Carbondale and Murphysboro. The average commute times are also lower in certain neighborhoods of Carbondale as well as Mount Vernon, Chester, and West Frankfort.

However, just because the area looks to be walkable quantitatively does not necessarily mean that people perceive their environment as walkable. First, the neighborhoods that appear to have high walkability based on the number of food stores within 800 or 1600 meters are also clustered along the major interstate and state highway systems. Specifically, there are many

clusters of neighborhoods with significantly high numbers of food stores along Interstate Highway 57, especially where a state highway intersects with interstate 57. Crossing the highway to walk to destinations is not a common behavior and thus, though the distance is small, the actual walkable infrastructure is bad. The same is true of the Carbondale-Marion urban areas – the variables suggest that these are highly walkable areas – particularly in Carbondale.

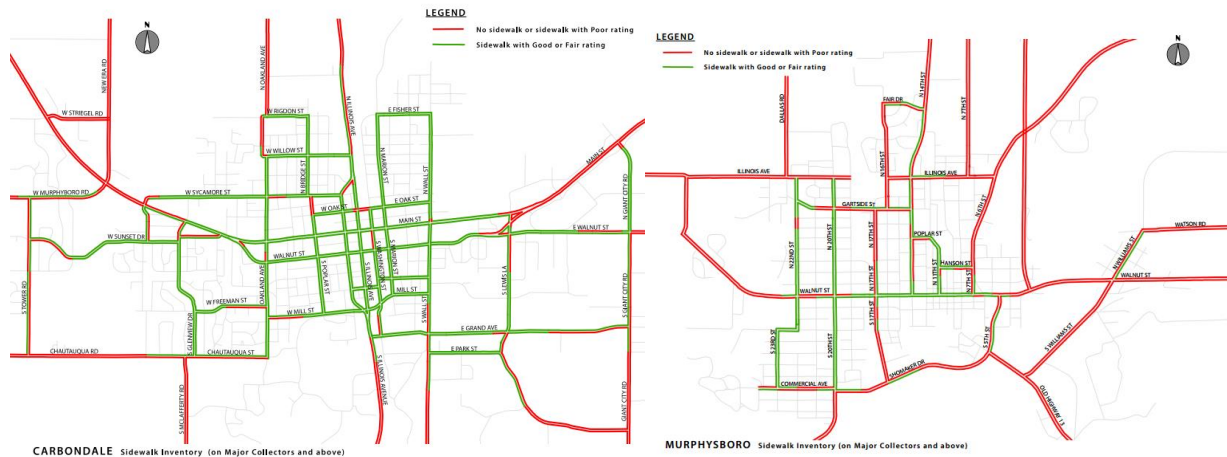


FIGURE 9. SIMPO SIDEWALK INVENTORY FOR CARBONDALE AND MURPHYSBORO

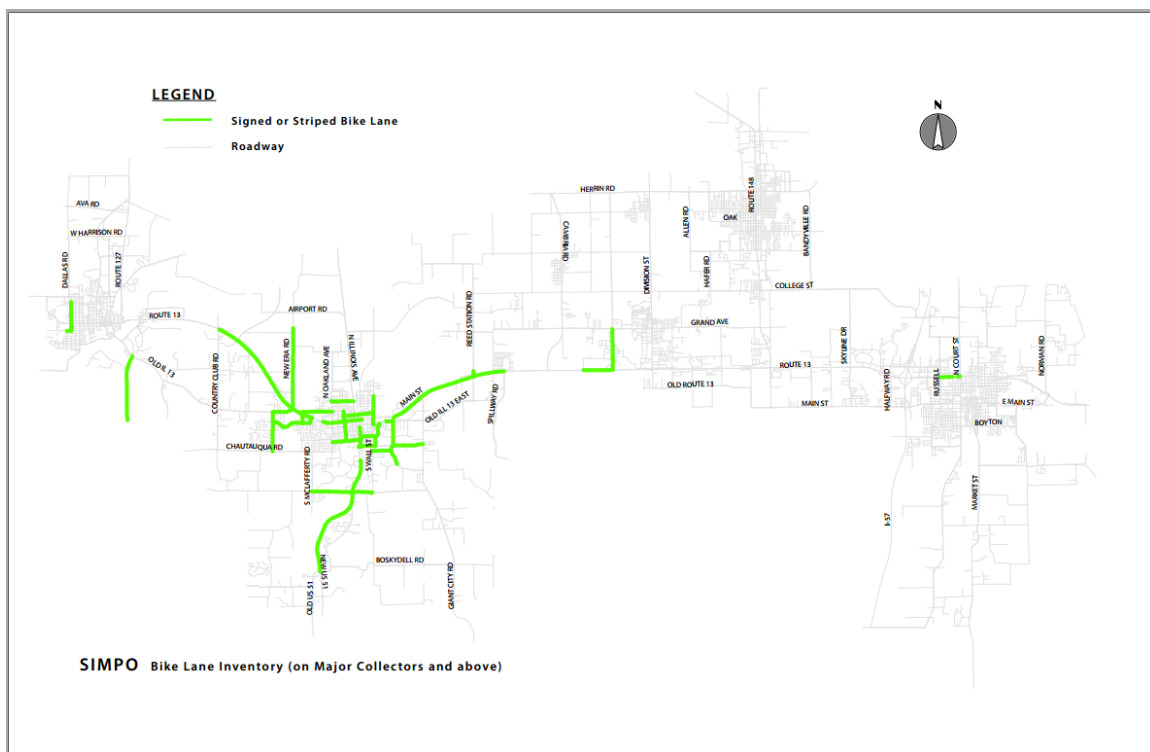


FIGURE 10. SIMPO BIKE LANE INVENTORY FOR CARBONDALE-MARION URBAN AREA

A recent study conducted for the Southern Illinois Metropolitan Planning Organization found that although many amenities are within close distance the infrastructure that might encourage walking or biking is not present.²⁵ For example, an inventory of sidewalks and bike paths found that many of the sidewalks are in poor condition and bike paths are sparse (see figures 9 and 10²⁶).

2.3.2 Interventions

The strongest relationship between a measure of walkability and obesity is with the percentage that walk, bike, or take public transportation to work. This relationship is particularly strong for the entire study area and urban areas within the study region.

The overall results suggest that an increase in walkability would reduce obesity – this is particularly true of the urban areas. Commute time might not be able to be altered but insuring that the infrastructure is in place for a pleasant walk, bike, or trip on public transportation would improve the health, economies, and environments of local communities.

2.3.3 Public Opinion and Policy

According to a spring 2015 Illinois poll conducted by the Paul Simon Public Policy Institute, about 1 in 4 (24.3%) downstate residents prefer to live in a place with transportation options while 63.0% prefer a place where they rely on cars, 6.0% claim it depends, and 6.7% don't know. While this isn't the same public support for transportation options observed in the city of Chicago (73.0%) it does suggest some public desire for walkability.

According to a 2014 poll of Jackson and Williamson counties,²⁷ 40.1% of southern Illinoisans in Jackson and Williamson counties would support an increase in property taxes and/or sales taxes to support alternative transportation – this support comes very close to the number who are willing to be taxed to support local public schools (51.7%). In the same Jackson/Williamson poll, 81.8% of Jackson county residents believe that sidewalks need expansion and/or maintenance, 78.1% believe that expansion of bike friendly lanes on local roads is necessary, 78.9% believe improvement of bike and pedestrian trails is needed, and 75.4% would like to see improved streetscaping. In Williamson county, 78.4% would like to see expansion and/or maintenance of sidewalks, 77.3% would like to see the expansion of bike friendly lanes, 72.2% would like to see an overall improvement of bike and pedestrian trails, and 65.4% believe improved streetscaping is necessary.

These results suggest that programs to improve walkable infrastructure in the small towns and urban areas of southern Illinois would be received with support from the public. Improving walkable infrastructure has the potential for the added benefits of economic growth and environmental preservation.²⁸ The Environmental Protection Agency's development strategy for

²⁵ Lochmueller Group and Alta 2014.

²⁶ Lochmueller Group 2014

²⁷ PSPPI 2014.

²⁸ EPA 2016

smart growth recommends dense growth in rural communities so that business can thrive, main streets are walkable, and families can live close to their daily destinations. They suggest that smart density protects the rural landscape by preserving open space, protecting air and water quality, providing places for recreation, and creating tourist attractions. The ability to walk, bike, or take public transportation to most destinations can reduce air pollution and save people money.

3 CONCLUSION

Studies have shown that a number of factors have made cities more attractive and thriving. Conveniently, many of these have the added benefit of physical and environmental health. Southern Illinois leaders are well aware of the rural “brain drain” that is taking place. In fact, the local paper – The Southern Illinoisan – has done an entire series investigating this issue entitled “The Rural Brain Drain.” Recent census data has alarmed Illinoisans on the whole: Illinois lost more of its population than any other state in 2015.²⁹

In southern Illinois, a contributing factor is the large number of SIU alums who leave the area, making their recommendations for the area particularly interesting. When asked whether they thought there should be more, less, or was there the right amount of various amenities, a large percentage (76%) believed Carbondale needs more ‘small, local businesses.’ Respondents were also likely to believe there should be more shops or restaurants within walking distance (74%), more places to walk or exercise for fun (66%), more locally grown produce (66%), more places to bike (63%), and more new stores and offices being built (60%).³⁰ The most recent alumni cohort (2011-2015) had an above average desire for more public transportation within walking distance.

Based on the studies covered above, concretely, I recommend the following for southern Illinois:

1. Create dense urban cores, however small.

Density could be achieved by creating zoning areas that target the downtown for growth and utilizing tax incentives to redevelop the area. This downtown growth should include:

- ❖ Locating new and existing community services within the downtown (e.g. library, post-office, schools, governmental offices).
- ❖ Offering a mix of housing options that serve renters, owners, people of all ages, and people of all incomes.
- ❖ Creating shared amenities and public spaces for common use. These shared spaces should promote human interaction, be safe and accommodating, have visually interesting design, relate well to the overall downtown, and reflect the unique culture or history of the area.

2. Improve paths and sidewalks for cyclist and pedestrian safety.

- ❖ A downtown core should be accessible to the population by all modes of transportation. Community members can start by assessing the connectivity of the local area to the downtown, major residence areas, and basic amenities. The infrastructure for walking and biking should first be developed to connect people to the downtown.

²⁹ Fitton 2015.

³⁰ Alumni Community Survey 2015. This survey polled members of the SIU Alumni Association.

- ❖ Promoting the creation of educational pamphlets, visits to community centers by pedestrian and cyclist advocates, and educational segments on the radio or local television news station could help to educate the community on the laws related to pedestrians and cyclists. These efforts might also increase awareness and use of new infrastructure for walking and biking.
3. Place emphasis on local food development. Particularly in areas with low food access.
 - ❖ An assessment should be made of what people are already doing, identification of key players, and connecting individuals pursuing local food development and food access.
 - ❖ In the areas with low food access and the downtown core, local leaders should focus on the creation of one new farmers market or local grocery store if there is not already one.
 - ❖ The USDA has many grants for local food development. These can be found on the agency's website. If farmers need more support, they should be put into contact with someone a local liaison or agricultural leader who can help them connect with others and apply for grants.
 - ❖ Lastly, efforts should be made to make sure local foods are affordable for all residents.
 4. Highlight and preserve southern Illinois' natural beauty and farmland.
 - ❖ The above recommendations should help to achieve this goal. However, as any new developments are assessed leaders should approach the natural areas and farmland as a local treasure that can produce jobs and attract visitors. Perhaps more local tours can be organized by tourism offices to expose people to the local farmland and nature areas.
 - ❖ Agro-tourism should be established, perhaps through a farmer-led local organization that makes joint decisions and collaborates on marketing materials, and creation of a "farm trail" similar to the wine trail.

These recommendations for the towns of southern Illinois would improve the health – and probably happiness – of residents, improve the natural environment, and provide economic stimulus for the entire region.

APPENDIX A: TABLES

TABLE 1. “HOW IMPORTANT WOULD YOU SAY IT IS TO IMPROVE THE DOWNTOWN OF YOUR COMMUNITY?”

Response	Statewide (03/15)	Southern Illinois (10/15)
Very important	37.0%	58.9%
Somewhat important	30.8%	25.4%
Not important	28.8%	9.5%
Don’t have a downtown	N/A	4.0%
Other/don’t know	4.1%	2.2%

Source: Paul Simon Public Policy Institute polls.

TABLE 2. CENTRAL TENDENCY AND DISPERSION OF FOOD VARIABLES

	Mean (s_x)	Range
Food800m	0.98 (1.95)	0-13
Healthy800m	0.18 (0.47)	0-2
Unhealthy800m	0.79 (1.66)	0-12
Food1600m	3.41 (4.92)	0-26
Healthy1600m	0.61 (1.06)	0-6
Unhealthy1600m	2.81 (4.10)	0-20
Food3200m	8.30 (10.51)	0-44
Healthy3200m	1.54 (2.08)	0-9
Unhealthy3200m	6.76 (8.64)	0-37
Food8km	15.33 (16.95)	0-55
Healthy8km	3.08 (3.69)	0-13
Unhealthy8km	12.25 (13.54)	0-44
Food16km	35.82 (31.67)	0-128
Healthy16km	6.88 (6.38)	0-25
Unhealthy16km	28.94 (25.50)	0-103
UnhealthyDistance	3731.51 (4587.54)	19-24482
HealthyDistance	5703.88 (6031.47)	141-34063
AllDistance	3422.19 (4151.77)	19-22547

Source: Deitz 2016

TABLE 3. PUBLIC OPINION TOWARD LOCAL PRODUCTS

Response	Statewide (03/15)	Southern Illinois (10/15)
Less likely	4.1%	1.7%
More likely	58.0%	76.8%
Does not affect	35.3%	18.7%
Other/don't know (not asked)	2.6%	2.7%

Source: Paul Simon Public Policy Institute polls.

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