

# WAMPO Regional Health & Transportation Report

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August 2021



# Introduction

Bridging health and transportation is of great importance to WAMPO to aid and improve the communities in the region. Since the passage of the National Environmental Policy Act, in effect since 1970, and similar laws and regulations, the links between our environments, whether urban or rural, and public health have become clearer and clearer. As WAMPO serves Wichita, the largest city in Kansas, its suburbs, and various nearby rural communities and townships, Wichita data can serve as a microcosm of the state.

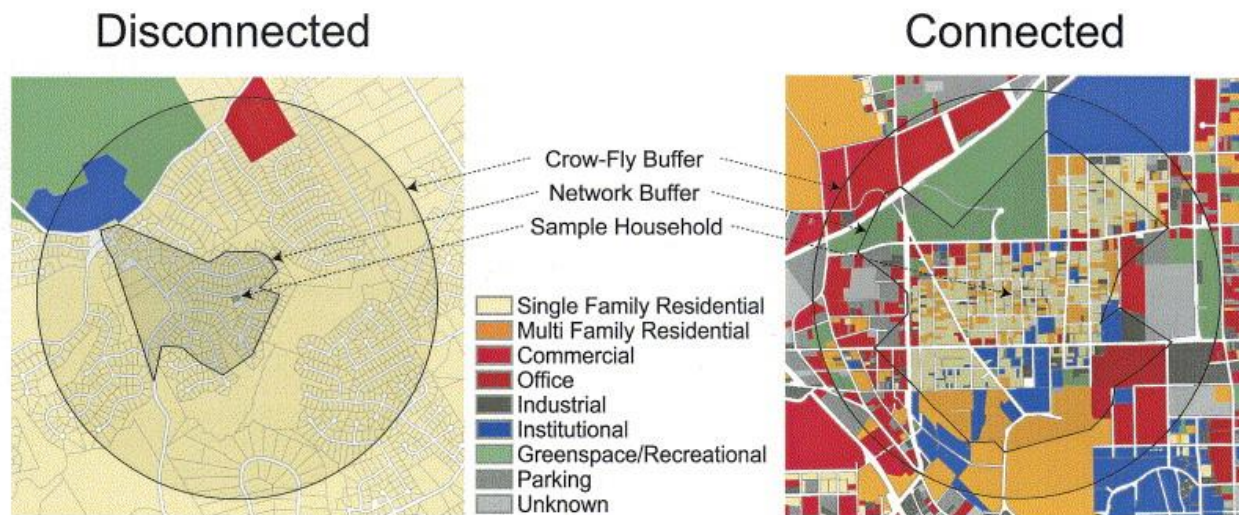
A significant point of contention in health and transportation is whom to prioritize. Who are our cities being built for? It has become increasingly common for significant building developments to be built on a scale that befits cars over humans. When rebuilding the House of Commons after its destruction during the German Blitz, Winston Churchill stated that “we shape our buildings and afterwards our buildings shape us.” The ideal urban environment is connected and walkable,

meaning neighborhood streets are connected via direct routes to places, have a high residential density, pedestrian oriented retail, homes near commercial businesses and institutions, and mixed land use.

Four aspects of health are affected in some form by transportation: access to goods and services, physical health and obesity, mental health and stress, and pollution and air quality.

## Access to Goods & Services

The abandonment of the walkable ideal for the drivable ideal has alienated those whom we try to serve. This practice creates issues of fairness, further burdening those who do not drive, whether by choice or circumstance. An auto-centric scale also creates an economic burden on the cities themselves, as the demand for road infrastructure maintenance rises. Local, state, and federal agencies are feeling this ache more recently as road infrastructure costs are on the rise, inflating to previously unseen levels since the COVID-19 pandemic. Some form of transportation, whether public or private, must typically be used to access



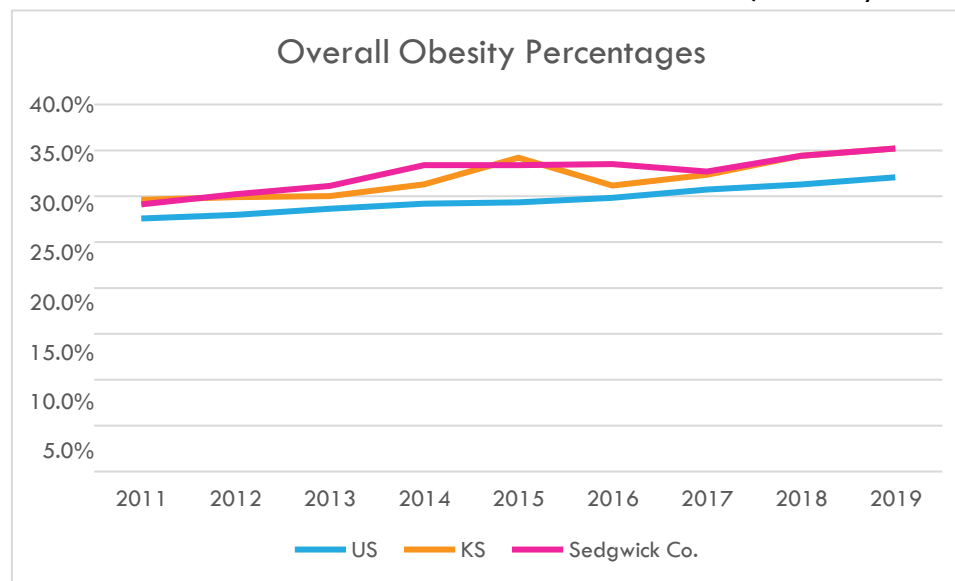
Frank, L. D., Andresen, M. A., & Schmid, T. L. (2004). Obesity relationships with community design, physical activity, and time spent in cars. *American Journal of Preventive Medicine*, 27(2), 87–96.  
<https://doi.org/10.1016/j.amepre.2004.04.011>



needed goods and services such as access to healthy food, places for physical activity, and health care. If these resources are not immediately available in a community, the need for transportation becomes much greater. The Sycamore Institute has found that those who rely on public transport are often saddled with the burden of lengthy transit routes, multiple transfers, inadequate or irregular service, and the inability to afford public transit are more likely to forgo the aforementioned needed goods and services. As much as neighborhoods need to be convenient and easy to navigate, so too does access to health care services and healthy food.

## Physical Health

Physical activity is one of the main behaviors that affects one's health and well-being.



Centers for Disease Control and Prevention. (2011-2021). *BRFSS: Table of Overweight and Obesity (BMI)* [Dataset].

Studies published in the American Journal of Preventative Medicine show that every mile walked per day decreases a person's chances of obesity by 8% whereas every 60 minutes in a vehicle increases one's chances of obesity by 6%.

Besides general benefits to one's health, regular physical activity can improve respiratory and cardiovascular health—conditions that pollution and poor air quality can exacerbate.

## Obesity

From 2004 to 2017, adult obesity in Sedgwick County has risen by 9% and is 3% higher than the US average. The obesity rate in the state of Kansas consistently trends higher than the US average, partially in thanks to the environment. A lack of area parks, sidewalks, affordable gyms, and access to healthy food for some communities exacerbates the issue. The lower a community lies on the socioeconomic scale, the more likely they are to be victims of these factors and have further to climb to escape them—for instance, those making less than \$15,000 a year in annual income average

38% obesity by population and the likelihood of occurrence decreases as income increases. Those that live in more walkable communities are more likely to use physically active modes of transportation, such as walking or biking.

Commuting by vehicle is a habitual form of sedentary behavior. Commute distances of 15 miles or more

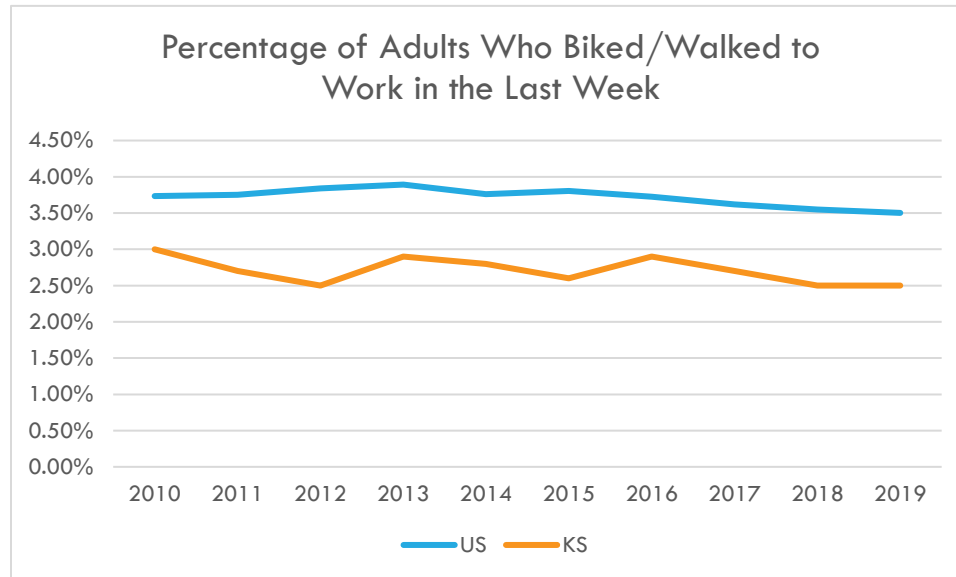
increase one's chances of obesity and decrease one's odds of meeting daily physical activity recommendations. The WAMPO region has an average one-way commute distance of 13-14 miles and an average one-way commute time of 22 minutes as of 2019.



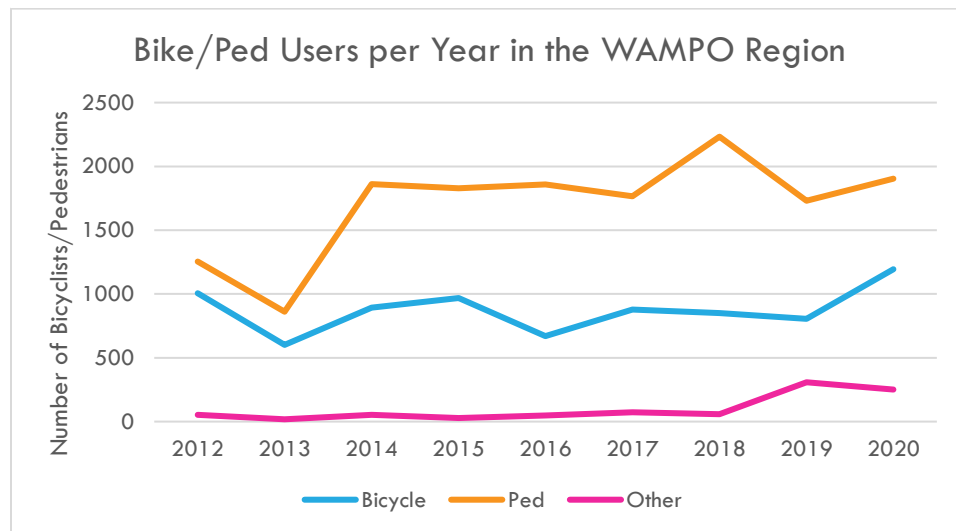
## Bicycle & Pedestrian Activity

Only 1.6% of workers in the WAMPO region walk or bike to work, half the percentage of the rest of the United States. The WAMPO region has seen a 52% increase in pedestrian traffic from 2012 to 2020, and a 19% increase in bicycle traffic in the same time frame.

The percentage of adults in Kansas who self-reported usually biking or walking to work in the last week is consistently lagging behind the national average. Part of this can be attributed to the lack of interconnected community designs.



Centers for Disease Control and Prevention. (2011-2021). Nutrition, Physical Activity, and Obesity - American Community Survey [Dataset].



Pedestrians include people in wheelchairs or others using assistive devices. "Other" includes people using equipment such as skateboards or rollerblades.

Source: Wichita Area Metropolitan Planning Organization. (2012–2020).

## Pollution & Air Quality

Air pollution continues to increase as the amount of vehicles on the road increases, despite continued efforts to improve emissions standards. The Air Quality Index involves daily ozone forecasts and other common pollutants, such as nitrogen dioxide, carbon monoxide, and lead. AQI is reported via a color-coded scale.

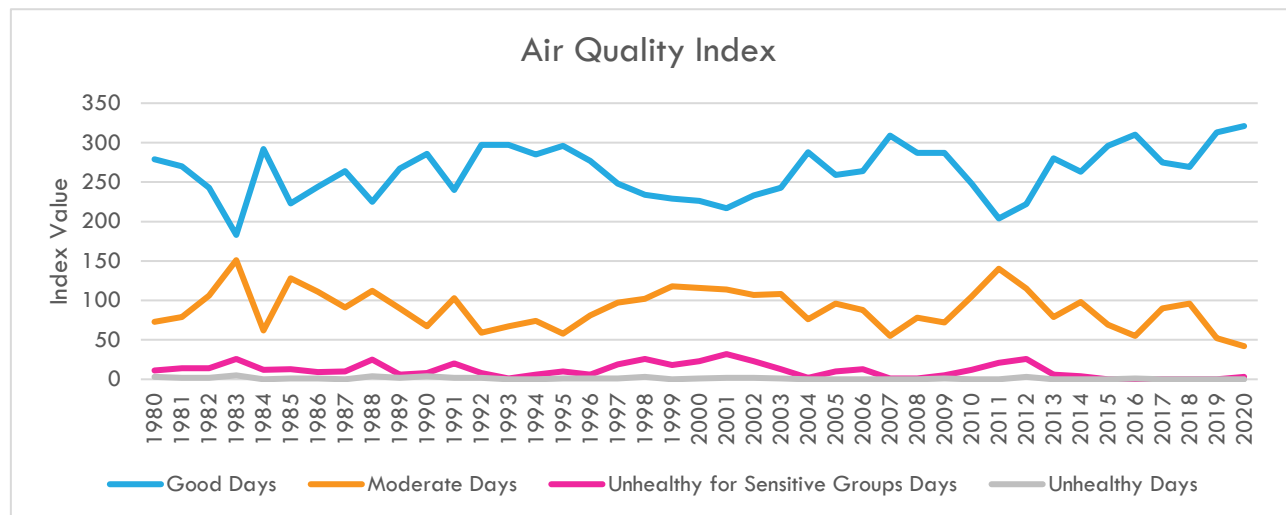
The number of "good" days in the WAMPO region is increasing while the number of "moderate" days is decreasing. Unhealthy days are kept to a minimum.

Vehicle traffic has decreased in the WAMPO region from 2019 to 2020 by 13%, while bicycle and pedestrian traffic has increased. This has good



implications for those with pre-existing conditions or who are considered part of a sensitive group. Vehicle traffic contributes to the production of air pollution, smog, and ground-level ozone. These air pollutants can be harmful to everyone and even more so to those

in sensitive groups, such as children and those with asthma or other lung diseases. High ozone levels may irritate one's respiratory system, reduce lung function, and aggravate pre-existing conditions.



Air Quality Statistics by County. (1980–2020). [Dataset]. United States Environmental Protection Agency.

Air Quality Index		Protect Your Health	
Good (0-50)		No health impacts are expected when air quality is in this range.	
Moderate (51-100)		Unusually sensitive people should consider limiting prolonged outdoor exertion.	
Unhealthy for Sensitive Groups (101-150)		The following groups should limit prolonged outdoor exertion: <ul style="list-style-type: none"> <li>• People with lung disease, such as asthma</li> <li>• Children and older adults</li> <li>• People who are active outdoors</li> </ul>	
Unhealthy (151-200)		The following groups should avoid prolonged outdoor exertion: <ul style="list-style-type: none"> <li>• People with lung disease, such as asthma</li> <li>• Children and older adults</li> <li>• People who are active outdoors</li> </ul> Everyone else should limit prolonged outdoor exertion.	
Very Unhealthy (201-300)		The following groups should avoid all outdoor exertion: <ul style="list-style-type: none"> <li>• People with lung disease, such as asthma</li> <li>• Children and older adults</li> <li>• People who are active outdoors</li> </ul> Everyone else should limit outdoor exertion.	

Ozone and Your Health. (2009). United States Environmental Protection Agency.



## FHWA Conformity

The Federal Highway Administration (FHWA) requires Metropolitan Transportation Plans (MTPs), Transportation Improvement Programs (TIPs), and federal projects to conform to the Clean Air Act and State Implementation Plan in order to ensure FHWA and FTA funds are given to activities that are consistent with air quality goals. Any new activities should not cause nor contribute to violations of the National Ambient Air Quality Standards (NAAQS), which set Federal standards for air quality concentration for the sake of public health.

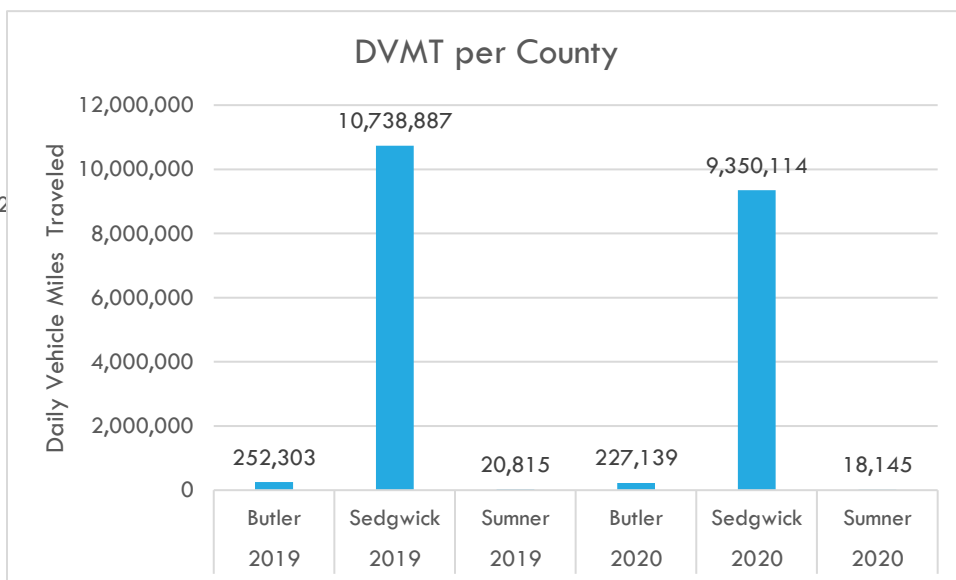
## Mental Health & Stress

Another aspect of transportation is mental health. One of the main contributing factors to aggressive driving or “road rage” is driving stress. Two of the main driving-related stressors are running late and challenging roadway conditions. Drivers that run into these problems are more prone to becoming aggressive. According to the American Automobile Association, nearly 80% of drivers in 2019 expressed feeling significant anger, aggression, or road rage in at least one instance in the past 30 days at the time of study. Those who experience road rage are more likely to engage in hostile thinking and aggressive actions, taking more risks with their driving, endangering those around them. With roughly 93% of the WAMPO region workers driving to their workplace, these feelings can occur daily. Consistent access to mental health facilities is another important service to be

provided. Cost, mode of transportation, public transit safety, and vehicle access are all barriers to transportation.

## The Effects of COVID-19 on Transportation

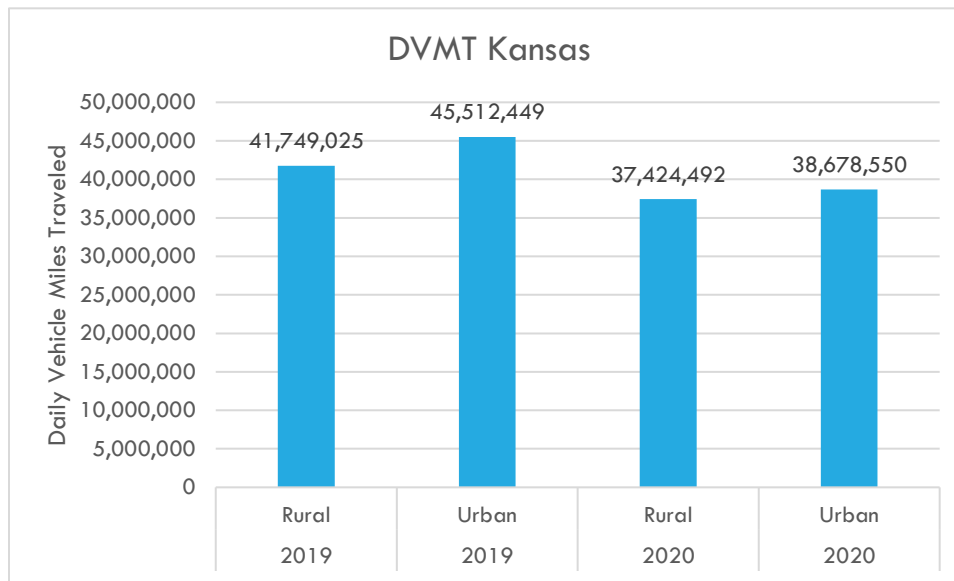
At the time of writing, there are 2.3 million confirmed cases of COVID-19 and 4.3 million deaths—35.5 million and 611,000 in the US, respectively. Loss of life and illness has a way of taking over every aspect of one’s personal being at the time of occurrence, and when the time of occurrence overlaps for much of the population, the effects of such devastation are persistent and pervasive. The pandemic has created drastic economic losses, from businesses shuttering to crests in unemployment, to disruptions in education and our social and cultural daily activities. With this, travel in all forms has decreased. Motivated by a combination of emergency orders, business closures, online schooling, and reduced social activity, Daily Vehicle Miles Traveled (DVMT) decreased in the state of Kansas by 13% overall from 2019 to 2020. DVMT on urban routes decreased by 15% whereas DVMT on park roads increased.



Source: Kansas Department of Transportation







Source: Kansas Department of Transportation

The airline industry is of major concern to the WAMPO region, as Wichita is home to two regionally significant airports: Wichita Dwight D. Eisenhower National Airport (ICT) and Colonel James Jabara Airport (AAO). Major carrier capacity in the airline industry dropped by 60-80% nationwide, and the effect is expected to reverberate throughout the airline/aircraft industry for years to come.

Potential future transportation trends to come out of the pandemic could include an increase in non-shared modes of travel such as bikes or scooters—a trend the city of Wichita is well-positioned for, as the amount of scooter ride-shares in the region has increased. Shared forms of transportation such as public transportation, ride shares, and carpooling may become less common as people err towards isolation over groups. There may be fewer people needing to commute to work in the first place, as businesses shift to a more permanent work-from-home model. The impact this may have on public health depends on the extent each of these factors change.

## Conclusion

Those who live in more walkable communities are more likely to use physically active modes of transportation, drive less, and thus produce less air pollution. The most direct effect of transportation on health is vehicle-related injuries and fatalities; motor vehicle crashes are the leading cause of death for

those aged 1-34 years. As the number of vehicles on the road continues to rise, so too does vehicle congestion and injuries to pedestrians, bicyclists, and vehicle occupants.

Buildings ought to be created on a “human scale,” using people as the foundational size metric, meaning that they’re the right size and layout for the average person to feel comfortable. When public spaces are built on an auto-centric scale, they move at a rate much faster and much larger than human scale. It’s the people who walk, bike, and use public transit that are the most likely to be victims of this dissonance that leaves a significant portion of the population in unsavory to dangerous situations. The burden is on those who do not drive, whether or not by choice. Neighborhoods built on a human scale are cognizant of distance and keep destinations close and easily reachable. Ease of walking highly depends on walking distance and contributes to health issues, such as obesity rates, which continue to trend upward on a local and federal level. Our roads affect many aspects of our daily life, which means prioritizing our transportation has a clear effect on prioritizing our health.



## Sources

- AAA Foundation for Traffic Safety. (2016). Prevalence of Self-Reported Aggressive Driving Behavior: United States, 2014 (Technical Report). Washington, D.C.: AAA Foundation for Traffic Safety.
- Air Quality Statistics by County. (1980–2020). [Dataset]. United States Environmental Protection Agency.
- Centers for Disease Control and Prevention. (2011-2021). *BRFSS: Table of Overweight and Obesity (BMI)* [Dataset].
- Centers for Disease Control and Prevention. (2011-2021). *Nutrition, Physical Activity, and Obesity - American Community Survey* [Dataset].
- Frank, L. D., Andresen, M. A., & Schmid, T. L. (2004). Obesity relationships with community design, physical activity, and time spent in cars. *American Journal of Preventive Medicine*, 27(2), 87–96. <https://doi.org/10.1016/j.amepre.2004.04.011>
- Hoehner, C. M., Barlow, C. E., Allen, P., & Schootman, M. (2012). Commuting Distance, Cardiorespiratory Fitness, and Metabolic Risk. *American Journal of Preventive Medicine*, 42(6), 571–578. <https://doi.org/10.1016/j.amepre.2012.02.020>
- Lane, L. B., Steedly, A., Townsend, T., Huston, B., & Danley, C. (2019). Connecting Transportation and Health: A Guide to Communication and Collaboration. *National Cooperative Highway Research Program*. Published. <http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP25-25Task105/NCHRP25-25Task105Guidebook.pdf>
- Melton, C. & the Sycamore Institute. (2017, February). *How Transportation Impacts Public Health*. <https://www.sycamoreinstitute.org/transportation-impacts-public-health/>
- Ozone and Your Health. (2009). United States Environmental Protection Agency.
- Sobieralski, J. B. (2020). COVID-19 and airline employment: Insights from historical uncertainty shocks to the industry. *Transportation Research Interdisciplinary Perspectives*, 5, 100123. <https://doi.org/10.1016/j.trip.2020.100123>
- University of Wisconsin Population Health Institute. (2004–2017). *Adult Obesity* [Dataset].
- Wichita Area Metropolitan Planning Organization. (2012–2020). *Bike/Ped Count Results* [Dataset].

