Annotated Bibliography

Dell'Olio, L., Ibeas, A., Bordagaray, M., & de Dios Ortuzar, J. Modeling the Effects of Pro Bicycle Infrastructure and Policies Toward Sustainable Urban Mobility. (2014). *Journal of Urban Planning & Development*, *140*(2), -1.

This was a study done in a Spanish city that analyzed the barriers of cycling. The results showed the most important variable was cost and climate, followed by availability of infrastructure.

Dill, J., Mohr, C., & Ma, L. (2014). How Can Psychological Theory Help Cities Increase Walking and Bicycling? *Journal of the American Planning Association*, *80*(1), 36–51.

This study observed whether or not Theory of Planned Behavior contributed to people using active transportation to travel. The Theory of Planned Behavior is guided by a person's attitude toward behavior, subjective norms, and person's perceived control over behavior. This study showed that TPB was insightful and can be used to encourage this behavior.

Duthie, J., & Unnikrishnan, A. Optimization Framework for Bicycle Network Design. (2014). *Journal of Transportation Engineering*, *140*(7), -1.

Previous research shows that cyclists are not willing to deviate too much form their shortest path, even if it means a better designated path. This paper works to better understand problems of bicycle network design and uses Austin, Texas as a model. The main barriers are connectivity and cost for planners. Planners must strategically balance connecting trail segments using the shortest distance, while also trying to find the lowest cost of a path.

Handy, S., van Wee, B., & Kroesen, M. (2014). Promoting Cycling for Transport: Research Needs and Challenges. *Transport Reviews*, *34*(1), 4–24.

This article outlines current research that has been done around collecting data for cycling. It also identifies the many nuances that come with trying to research cycling needs. The authors describe some known benefits of cycling, such as lower GHG emissions, health, well-being, and economic benefits.

Harris, A., Reynolds, M., Winters, C., Cripton, M., Hui Shen, P., Chipman, M. L., … Teschke, K. (2013). Comparing the effects of infrastructure on bicycling injury at intersections and non-intersections using a case-crossover design. *Injury Prevention*, *19*(5), 303–310.

From many surveys done around the world, safety seems to be the biggest reason people tend not to bike as a form of transportation. This study observed how bicycle infrastructure affects safety in Vancouver and Toronto. Researchers found that intersection design does have a correlation with number of bicycle accidents. Intersections where two local streets (i.e. one-lane) were the safest, coming in at having 1/5 of accidents than two major streets. Traffic circles were found to increase risk of accident while streets with speeds less than 30km/h (about 20mph) and/or streets with bike lanes separated from traffic had lower risks.

Iseki, H., & Tingstrom, M. (2014). A new approach for bikeshed analysis with consideration of topography, street connectivity, and energy consumption. *Computers, Environment & Urban Systems*, *48*, 166–177.

This article proposes new ways to observe bicycle usage in cities. Bicycle usage can reduce traffic congestion, vehicle emissions, and health risks. Contrary to most other studies, this one takes into account crucial factors such as: topography, street connectivity, presence of intersections, and estimates of energy used to bike. By looking at these factors, there seems to be new insights on bike usage. Further research should be conducted to better understand relationships.

Metro. 2014. 2014 Regional Active Transportation Plan. Portland, OR: Metropolitan Council.

This is a regional plan that addresses the challenges and benefits of active transportation. Active transportation includes walking, biking, and public transportation. This plan is intended to asses our current conditions and expand upon our already existing infrastructure.

Oja, P., S. Titze, A. Bauman, B. de Geus, P. Krenn, B. Reger-Nash and T. Kohlberger (2011). "Health benefits of cycling: a systematic review." Scandinavian Journal of Medicine & Science in Sports 21(4): 496-509.

A review of 16 studies that specifically addressed the health benefits of cycling found the studies to be high in quality and to contain consistent results that supported the relationship between cycling, cardiovascular fitness, all-cause mortality, cancer risk, and overweight or obesity risk. The studies provide evidence for a positive dose-response relationship between cycling and health effects, and they suggest that the promotion of cycling can improve public health.

Pucher, J., R. Buehler, D. R. Bassett and A. L. Dannenberg (2010). "Walking and cycling to health: a comparative analysis of city, state, and international data." Am J Public Health 100(10): 1986-1992.

This study found that countries with higher rates of active transit had lower rates of obesity among their populations. Also showed that higher rates of walking and biking were meeting recommended levels of physical activity, and reduced prevalence of diabetes.