

Determining cyclist trip purpose on off-street urban trails in four US cities

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1 INTRODUCTION

Increasing the number of people traveling via bicycle has a myriad of benefits, including increasing physical activity and the associated positive health outcomes, improving air quality, and decreased overall costs to users and the system as a whole. However, the prevalence of cycling is limited by perceived risk of injury and death while cycling. Building off road, protected cycling facilities improves safety, and increases the likelihood that more people will use bicycles as a form of transportation.

On-road facilities, such as separated lanes and cycle tracks make up the majority of bicycle infrastructure by mile in the United States. However, linear parks are some of the most visible, and well used transportation infrastructure in urban areas. An intercept study of an urban trail indicated that cyclists were willing to travel 67% longer in order to use an urban trail (1). Many studies have estimated the correlation between recreational walking and bicycling and proximity to greenspace, but few studies have examined the extent to which greenspaces extend the transportation network. Understanding how greenspaces can function as transportation infrastructure is critical to building bicycling and walking networks.

2 PARKS AS URBAN INFRASTRUCTURE

This study is a portion of a larger study to assess how parks can be used as both recreational spaces, as well as civic infrastructure. Linear parks are a critical component of urban infrastructure. We can maximize the efficiency of public infrastructure investments by intentionally building park infrastructure that serves multiple functions, including transportation, economic development, and storm water management. Infrastructure systems in the United States must be built efficiently and effectively. Maximizing the potential of infrastructure to serve multiple purposes is critical to rebuilding America's towns and cities. Currently, very little of our infrastructure is versatile enough to serve several functions and be used on a daily basis. By intentionally building parks as part of our transportation infrastructure, we can turn our urban spaces into productive assets that serve civic functions, generate economic development, and improve population health.

Transportation infrastructure must respond to rapid changes in urban environments. Over 40,000 people are killed on roadways each year. This is unacceptably high and stands out amongst developed nations. While many aspects of our transportation system are engineering marvels, they sit idle and is unsafe for people hoping to travel via bicycle.

Large urban parks, such as Fairmount Park in Philadelphia, and linear parks such as The 606 in Chicago provide safe, separated spaces for people to walk and ride their bicycles to work, or connect to transit. Well over 1 million

people traveled on trails in each of those parks in the last year, and on a typical weekday, about 4,500 people walk or bicycle on the trails, mostly during peak commuting times. In other words, these routes are functioning as urban arterials for active transportation. As active transportation networks become safer and more expansive, it is likely that there will be an increase in use as more people choose to walk and ride bicycles.

Cities are already building parks as part of their transportation network, and doing so at similar costs to building roads. By building transportation infrastructure that improves rather than damages health, transportation investments are more efficient and wisely invested. The entire 2.6 mile Lafitte Greenway in New Orleans cost \$9.1 million dollars to construct, less than the cost per mile for an urban roadway. Yet, the Greenway provides plenty of space for citizens to walk and bicycle, absorbs runoff rather than creating it, links to bus and streetcar routes, and generates revenue by serving as event space for the city.

Recently, there has been a surge in investment in linear parks that function as transportation corridors, such as the Atlanta BeltLine, and the 606 in Chicago. While counts of daily volumes are common on these facilities, it is difficult to determine the purpose of the trip. These trails exhibit the characteristic bi-modal commuting peak with the highest volumes are observed during weekday commuting hours, suggesting that many trips are used for transportation (i.e. non-recreational) purposes (2). The purpose of this study is to estimate the percentage of cyclists that are using the facility for transportation purposes, and develop a simple method for estimating trip purpose that can be replicated on other trails around the country. Determining the purpose of trips is important for funding and policy decisions related to active transportation infrastructure and off-road bicycle facilities.

3 HYPOTHESIS

Bicycle trips in linear parks are primarily for transportation purposes, rather than for recreation alone.

4 METHOD

The study team is in the process of implementing a one-question intercept survey of all cyclists passing by a specified point on 4 urban trails, with a sign that reads: “Going somewhere [Raise right hand] OR Just for fun [Raise left hand]?” The survey is short and does not require cyclists to dismount. For a subset of cyclists who agree to stop to answer more specific interview questions, the surveyors will collect zip code, age group, primary commute mode, how many days per week they cycle, if using the trail is the fastest route to their destination, specific information on their trip purpose (e.g. work commute, school, shopping), educational level, and family size. We plan to conduct at surveys over two weekdays, and one weekend day in each city. The surveys are planned for April and May 2017.

4.1 Study sites

The intercept survey will be conducted on four urban trails: The 606 in Chicago, the Schuylkill River Trail in Philadelphia, the Lafitte Greenway in New Orleans, and the Atlanta BeltLine. Only linear parks over 1 mile long in large urban areas were considered for the study.

Table 1: Trails to be surveyed, length of trail, and annual number of bicycle and pedestrian trips

Trail	Length (miles)	Bicycle and Pedestrian trips in 2016
The 606, Chicago	2.7	1.2 million
Atlanta BeltLine Eastside Trail	2.1	1.3 million
Lafitte Greenway, New Orleans	2.6	272,000
Schuylkill River Trail, Philadelphia	10	1.7 million (in Center City Philadelphia)

5 CONCLUSIONS

Urban linear parks are used for transportation purposes, and it is possible to quantify the percentage of trips used for transportation using a short intercept survey. While the surveys are not necessarily representative of trip purpose over the course of the year, or for all linear parks, our method is relatively inexpensive and can be implemented by City governments, planners, and others to quantify the percentage of transportation trips occurring in urban linear parks.

REFERENCES

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