F25.22: Exploring the Communitywide Impacts of Traffic Gardens on Bicycling Activity and Safety

Overview

Traffic gardens are small-sized streetscapes with scaled-down traffic features and urban elements where children and potential new cyclists can practice bicycling in a setting free of vehicle traffic. Construction of these facilities, which have been limited to date in the United States, are hypothesized to provide a safe opportunity for local residents to learn how to ride a bicycle along mixed-traffic streets and subsequent uptick in communitywide bicycling activity and safety awareness. Yet, limited empirical evidence exists to quantify real-word changes in bicycling activity and safety attributed to the introduction of traffic gardens, which have varied in design due to available resources, targeted populations, and local commitment. The objectives of this research project are to create a nationwide inventory and taxonomy of traffic gardens and then collect and analyze secondary data sources to explore any changes in local bicycling activity and observed traffic conflicts that have resulted from their introduction. Given this newly attained knowledge, a goal of this research is to assist local, regional, and national transportation planning agencies a greater understanding of how educational programs like traffic gardens can complement safe and accessible bike facilities to encourage more sustainable and healthier mobility options in American communities.

What the student will DO and LEARN

Depending on the student researcher's skill set and technical proficiencies, they will be able to contribute to various project aspects which include but are not limited to the review of academic studies and reports on traffic gardens; collection of tabular and spatial data on the location and characteristics associated with traffic gardens as well as secondary data sources related to neighborhood bicycling activity and bicyclist-motorist traffic conflicts; and participation in project meetings with transportation faculty and researchers.

By performing these duties and potentially others, the student researcher will gain a richer understanding of emerging bicycle policies and transportation planning programs; specifically, what innovative strategies are cities and local communities undertaking to attract new individuals to bicycling through youth-focused initiatives such as traffic gardens. The student will gain valuable mentorship and experience in literature synthesis, data collection, and statistical modeling that will help prepare them for graduate studies and a potential career in research.

Additional benefits

The student researcher will be given significant mentorship by the faculty member and provided with an opportunity to interact with graduate students and other faculty in the NAU community and beyond. The student researcher will have an opportunity to work on-campus in a dedicated research laboratory setting.

Additional qualifications

The student researcher should be self-motivated with good communication skills, demonstrate an interest in transportation planning or engineering, and possess a desire to produce peer-reviewed publications. Either experience or interest in transportation research and statistical analysis in addition to a familiarity with geographic information systems or mapping software is desirable. The student researcher should be motivated, detail-oriented, and able to leverage critical-thinking skills to applied transportation questions.

Time commitment

6 hrs/week for 30 weeks