

## Why Cities with High Bicycling Rates are Safer for All Road Users: An Analysis of Mid-Size Cities

*Nick Ferenchak and Wesley Marshall*

**Keywords:** Road safety, Built environment, Bicycling, Active transportation, Healthy cities, Vision zero, Safe systems

Several existing studies found better traffic safety outcomes for all road users in large cities with high bicycling rates. Does this relationship hold for mid-size cities? If so, which factors are correlated with better safety outcomes? To explore these research questions, we investigated total, pedestrian, and bicycle fatality rates for fourteen mid-size U.S. cities: seven cities that have high bicycling rates and seven paired comparisons. We then explored three categories of possible pathways towards better road safety outcomes: i) travel behavior differences; ii) built environment differences (land use and street networks); and iii) socio-demographic and socio-economic factors (resident age, income, and percent White). Findings suggest that mid-size cities with higher bicycling activity are safer for all road users. They are also denser in terms of land use and transportation systems, which suggest that the cities are more amenable to transit and walking. But while high-bicycling cities also see more walking and transit use, evidence suggests that less driving has a stronger relationship with improved road safety outcomes than the proliferation of any one other mode. We found no major differences in socio-demographics or socio-economics.