



UNIVERSITY TRANSPORTATION CENTER RESEARCH BRIEF

Using Computer Vision to Evaluate Bicycle and Pedestrian Improvements

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Background

The November 2021 federal infrastructure bill allocates \$20 billion for road safety including a “Safe Streets and Roads for All” grant program to cities aimed to improve pedestrian and bicycle safety. This new federal funding combined with a national spike in pedestrian fatalities in the wake of COVID-19 has elevated cities’ need for guidance on how to establish priorities for bicycle network and sidewalk improvements that enhance safety and mobility.

A pole-mounted computer vision system from Numina offers several advantages over traditional traffic counting systems for generating metrics to inform decision-making about improvements to streetscapes. This system provides data on what type of vehicles are moving through the study area, the directions the vehicles are traveling, and when different users enter close proximity. The data is saved in a cloud-based system that is easy to query for further analysis. To address the privacy concerns of cities, all the mobility information is recorded without any personally identifiable information.

EXISTING CONDITIONS

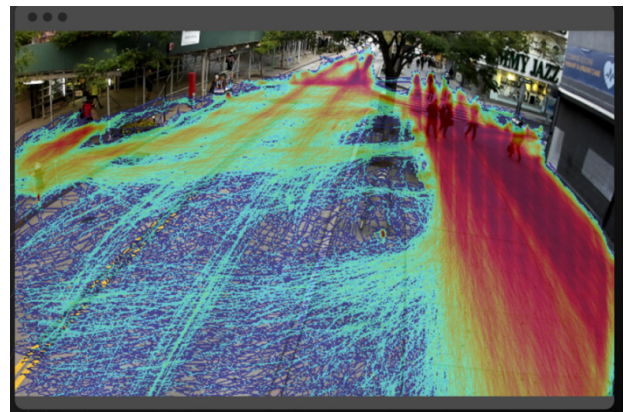


PROPOSED CONDITIONS



Research Project

Our project will deploy six Numina computer vision sensors on a major bicycle corridor in downtown Boise, Idaho that has recently introduced a curb-separated bike path for safety and rider comfort and a new parking configuration designed to limit conflicts between cyclists and people exiting their cars. Our study will evaluate how pedestrians, cyclists, and auto users move across the new streetscape, whether the actual street use achieves the design goals, and whether computer vision systems can help improve relevant design decisions.



ABOUT THE AUTHORS

The research team consisted of Don Mackenzie of the University of Washington, and Mike Lowry of the University of Idaho.

ABOUT THE FUNDERS

This research was funded by the Pacific Northwest Transportation Consortium, with additional support from the University of Washington and the University of Idaho.

EXPECTED DATE OF COMPLETION

March 2023

FOR MORE INFORMATION

<https://depts.washington.edu/pactrans/research/projects/using-computer-vision-to-evaluate-bicycle-and-pedestrian-improvements/>