Where the Sidewalks End: Evaluating Pedestrian Infrastructure and Equality

Example: High Sidewalk Availability
Corvallis, OR

Example: Low Sidewalk Availability
Lynchburg, VA
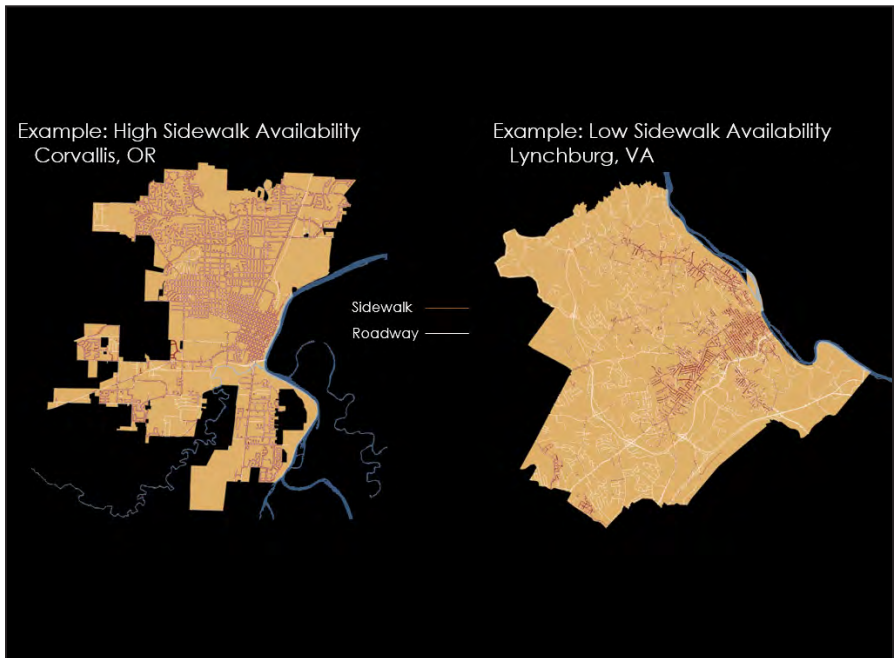
Sidewalk
Roadway

the ISSUE

Walking is an often overlooked, but essential, mode of transportation. Cities are increasing their pedestrian planning efforts, but a lack of sidewalk infrastructure data remains a major barrier. As sidewalk data become more prevalent with advances in high-resolution imagery, there is a need to bridge the sidewalk infrastructure data and research gap.

the RESEARCH

In Part One of this report, researchers analyze planimetric sidewalk data to calculate sidewalk availability and sidewalk width characteristics. They compare these sidewalk measures against the Americans with Disabilities Act (ADA) requirements as well as national and federal guidance on sidewalk infrastructure design.

In Part Two, they investigate equality with respect to sidewalk infrastructure and race/income. Given that sidewalks represent a conduit for people to go to work, shop, exercise, and more, it is important to understand how well this infrastructure has been distributed.

The overarching goal of this research is to bridge the massive sidewalk data gap and begin to establish the next generation of data-driven sidewalk research and asset management efforts of cities. The underlying goal is to help improve deteriorating and disregarded pedestrian infrastructure as well as improve the mobility, health, safety, and access to opportunities for all that use or want to use sidewalks.

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Project Title

Where the Sidewalk Ends: Equity Disparities with Respect to Municipal Maintenance Policy

the FINDINGS

This project demonstrates the feasibility of deriving usable GIS sidewalk data from aerial imagery (planimetrics) for 24 U.S. cities. Researchers then used this sidewalk infrastructure spatial data to calculate sidewalk availability, width, and land coverage for every city block in these 24 cities. This facilitated the ability to compare the results against ADA regulations and national and federal guidelines. Results suggest that sidewalk availability averages less than 50%. In other words, assuming that cities should have sidewalks on both sides of most streets, they are not even halfway to that point. In addition, the research found that more than 10% of available sidewalks are not even three feet wide, the minimum needed to meet ADA regulations. The results also suggest that economic and racial inequities exist in cities but not always how we might expect. For instance, non-white populations appear to have generally greater sidewalk availability and width.

the IMPACT

Sidewalks are a fundamental element of streets and cities that can no longer be overlooked. The research leverages developments in spatial data to advance the literature and improve the understanding of pedestrian infrastructure, city-wide sidewalk characteristics, and the fair distribution of sidewalks. This project fills a major gap in the literature and does so in a way that should prove to be helpful for cities that want to improve their sidewalk infrastructure.

For more information on this project, download the entire report at https://www.ugpti.org/resources/reports/details.php?id=1046

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