

Hixon Center for Urban Sustainability

FACT SHEET

Desirable Streets

Healthy City

Built Environment

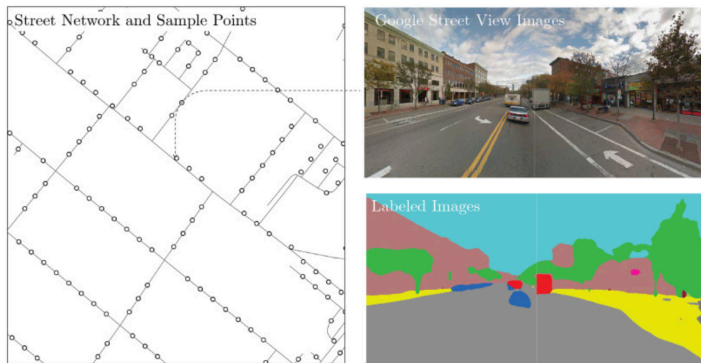


Climate Issue: Street Quality

- Streets serve as critical public space for mobility, outdoor activity, and social interaction
- Many cities are investing significant resources into making their streets safe and inviting to pedestrians
- Encouraging transportation behaviors besides driving is necessary to reduce urban greenhouse gas (GHG) emissions.

Data-Driven Approach

- Emerging science uses thousands of GPS data points from pedestrians' phones to study their movements
- This has been applied to create a street desirability index for cities like Boston, Massachusetts
- This index compares a journey's shortest path with the real path taken by pedestrians to track what streets are desirable
- The index also uses computer vision techniques to measure the built environment features that might lead pedestrians to take these routes.



Pedestrian Behavior

- The science shows that desirable streets display common characteristics encouraging pedestrians to deviate from the shortest path
- Trip length matters. The shorter trips are, the more likely it is pedestrians will deviate from the most efficient route.



Understanding street desirability can help urban practitioners improve the built environment of their cities.

Improve the Desirability of Urban Streets

To increase street desirability, urban planners and designers should consider:

- Increasing public amenities such as parks and urban furniture such as benches and bicycle racks
- Designing surrounding buildings to give the feel of an inviting corridor with a cohesive aesthetic
- Increasing the diversity of businesses such as retail shops
- Promoting winding roads rather than straight streets
- Maintaining sidewalks and ensuring they are sufficiently wide to improve the pedestrian experience

IN A NUTSHELL

- GPS data and computer vision techniques can be used to identify what makes a street appealing to pedestrians
- Desirable streets tend to have a cohesive aesthetic, better access to public amenities and more diverse businesses
- Understanding the common characteristics of desirable streets helps urban planners design better public spaces

WHAT CAN YOUR CITY DO?

- UTILIZE** a data-driven approach to understand what makes the streets desirable to pedestrians
- ASSESS** the common characteristics of desirable streets to guide urban design and long-term planning
- MAINTAIN** sidewalks and urban furniture to continuously improve the pedestrian experience.

To find out more information on this fact sheet, contact **Arianna Salazar Miranda** at arianna.salazarmiranda@yale.edu. Fact sheet based on Miranda et al., (2021). Desirable streets: Using deviations in pedestrian trajectories to measure the value of the built environment. Computers, Environments and Urban Systems, 86, 101563. Text available at https://senseable.mit.edu/papers/pdf/20210130_Salazar-et-al_DesirableStreets_CEUS.pdf