

**Project Information Form**

Project Title:	An Assessment of Pedestrian Infrastructure Quality and the Effect on Travel Time and Mobility for Users with Physical Limitations
University:	Georgia Institute of Technology
Principal Investigator:	Chelsea Dyess
PI Contact Information:	
Funding Source(s) and Amounts Provided (by each agency or organization):	U.S. Department of Transportation (USDOT)
Total Project Cost:	
Agency ID or Contract Number:	
Start and End Dates:	
Brief Description of Research Project:	<p>Currently, the state of communities' walking environments can be evaluated using tools that take into consideration proximity to amenities, block length, intersection density, and population density. However, a truly accessible pedestrian environment is characterized not only by sidewalk presence and proximity to goods and services, but also by well-maintained sidewalks, curb ramps, and curb cuts that help ensure the safety and comfort of pedestrians of all abilities. Sidewalk presence, coupled with sidewalk quality, are important factors when considering the ease of movement by users along the system. While individuals with full mobility are usually able to overcome problems in the pedestrian network, it is significantly more difficult for users with mobility impairments to traverse the same infrastructure. This thesis uses sidewalk, curb ramp, and curb cut quality data to assess the state of pedestrian infrastructure in Midtown, Atlanta. The assessment specifically focuses on how the state of the sidewalks in Midtown, Atlanta effect the movement of people with disabilities or mobility impairments. The travel time between random origins and destinations in Midtown will be calculated using Dijkstra's shortest-path algorithm, which is the methodology embedded in the Network Analyst tool in ArcGIS. The Network Analyst tool is used to calculate the travel time between origins and destinations before and after adding sidewalk travel-time impedance values to the Midtown network. Infrastructure quality data such as sidewalk roughness, curb ramp problems, curb cut problems, and sidewalk compliance issues are assigned impedance values in order to assess the effect they have on users' movement throughout the sidewalk network. Midtown, Atlanta is used as a case study to show the effects sidewalk quality issues have on persons with physical limitations,</p>

	<p>however this analysis can be reproduced by any community that has pedestrian infrastructure data. This analysis also has the potential to be used by communities to maintain their sidewalks and prioritize sidewalk repairs by identifying problem areas that limit mobility for users of all abilities.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented):</p> <p>Place any photos here</p>	
<p>Impacts/Benefits of Implementation (actual, not anticipated):</p>	
<p>Web Links</p> <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project website</li> </ul>	<p><a href="https://ncst.ucdavis.edu/graduate-student-research/">https://ncst.ucdavis.edu/graduate-student-research/</a></p> <p><a href="http://transportation.ce.gatech.edu/node/104">http://transportation.ce.gatech.edu/node/104</a></p>