**Overview**

Sidewalk data are necessary to support livability, safety and quality of life. Georgia Tech researchers have developed an automated sidewalk rating system to easily collect, assess, and prioritize repair and reconstruction of pedestrian facilities. Researchers have collected field data in Atlanta, and will deploy a sidewalk quality survey to gather qualitative data on sidewalk segments. Based on these results, researchers will develop a Sidewalk Quality Index to assess sidewalks on a regional scale.

**Case-Study Data Collection**

The data collection unit consists of a tablet attached to a basic wheelchair. As researchers and volunteers push the wheelchair along the sidewalk, the unit gathers video, acceleration, vibration, and GPS data. The team has collected data on sidewalks throughout Metro Atlanta including automated data from the tablet as well as hand measurements to collect ground-truth data and calibrate sidewalk width, grade, and cross-slope (pictured below).

A researcher collects grade, width, and cross-slope hand measurements on a calibration route in the Virginia-Highlands neighborhood of Atlanta.

**Survey Development**

The sidewalk quality survey asks users to assess and comparatively rank 40 sidewalk segments in Atlanta, Georgia. The survey will be deployed to local, regional and national experts to gather baseline data on expected sidewalk quality ratings.

Survey Structure:
- Pool of 40 sidewalk segments
- 4 segments are selected at random each time the survey is taken
- Survey pages display video, images, and information for each sidewalk segment
- Survey takers assess each segment individually
- Survey takers rate 4 segments against each other

Survey takers make rating decisions based on the criteria listed above as well as:
- Basic measurement information
- Street view and satellite images
- Video taken during field data collection
- Nearby land-use
- Proximity to transit stops

**Sidewalk Quality Index**

Researchers will develop a Sidewalk Quality Index by:
- Correlating ground-truth data and survey response data for case-study sidewalk segments
- Analyzing significance of each measured quality and safety factor
- Creating a model comprised of weighted field-data collected variables
- Using the model to assign a Sidewalk Quality Index on a scale of 1 through 5

All data needed for input into the model can be collected using the simple wheelchair and tablet data collection method.

Sidewalk Quality Index results will be made accessible through an online, Open Street Map enabled interface as shown above for use by stakeholders and decision makers. Sidewalks will be color coded by index number with pop-up videos available for viewing.

**Summary**

The sidewalk quality rating system developed through this project provide a baseline for local and regional sidewalk inventories, with the potential to influence transportation decision-making, public health and pedestrian safety. The sidewalk quality index ratings can be used by jurisdictions to prioritize pedestrian facility improvements and facilitate comprehensive pedestrian planning. The research team anticipated that the assessment system will have broad national application.