

Geospatial Information Tools in the Service of Mobility and Transportation

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The Center for International Trade and Transportation (CITT) developed, tested, and deployed a mobile phone-based digital data collection tool for use by transportation planners and policymakers. By identifying new ways to document and understand the multiple demands for use for any given space (for example, freight deliveries, ride share companies, scooters, and pedestrians) planners can mitigate the impacts. In this way, the digital walk audit becomes a tool to promote safe communities and more equitable access to mobility options for all socioeconomic levels.

Study Methods

The tool, nicknamed the digital community-source audit (DCSA), was developed using Esri's Survey123 platform and takes the form of web-based surveys that gather information on

transportation features around a given area of study. Users conduct a physical on-site walk audit as they would with paper and pen, but the DCSA allows for a central repository of multiple users' data. The data is also in digital format, which allows for improved data storage and analysis. The collected data also has a geospatial component that allows for later spatial visualization and analysis of the information gathered by users.

Testing and focus groups consisting of transportation consulting professionals, public sector employees, and urban planning students provided a needs assessment and feedback on the tool. Feedback consensus determined that the tool will improve planning work by allowing for a visualization of potential passenger-freight conflicts. A tool like this will be important for city planners as part of the development and permitting process.

Iterative feedback on the DCSA via testing and focus groups have allowed for continued augmentation of usability throughout the development process. The resulting product has robust functionality, capturing both date and time for each point, and includes photo attachments and logical question toggling. Testing and feedback also improved question clarity. The DCSA has been used in classes offered by CITT and will be incorporated into other academic and professional development settings.

Findings

User feedback on the DCSA during focus group testing was generally positive. Users noted the value of the DCSA in collecting data which can inform better decision making when it comes to planning, particularly over a paper and pen alternative. Users liked survey questions that toggled on/off depending on responses to prior questions. They noted it helped them consider the planning implications of the design and development features they observed. Health Administration students further noted that the DCSA afforded them a better perspective on planning in general, given their background in different fields.

As crowdsourcing of data gathering grows, the number of people undertaking traditional planning assessments also grows. The walk audit has the potential to serve as a tool to further democratize the planning process, and future generations of the tool must address the needs of different users, including those with different language and accessibility needs.

Policy Recommendations

The project team has identified future courses where the DCSA can be deployed to extend its reach and introduce the walk audit exercise to a wider audience. This audience can include public sector officials, consultants, community college students, and high school students. The app will be used in two Freight Academies offered by Caltrans for its planners and engineers in the summer and fall of 2019, and will be incorporated into lesson

plans offered by the Academy of Global Logistics (AGL) at Long Beach's Cabrillo HS. AGL is a partnership of the Port of Long Beach, Long Beach Unified School District, and CITT. It will also be part of a pilot certificate program called Transportation Planning Professional + which offers planners a suite of functional skills not currently offered in traditional planning programs. The digital walk audit app will be part of a module on "Using GIS Tools to Tell Planning Stories."

The walk audit tool engaged with a national audience when it was presented at the 2018 American Planning Association (APA) conference in New Orleans.

About the Authors

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/1870



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