IMPROVING THE NEXT GENERATION OF TRAVEL DEMAND MODELS TO BETTER REPRESENT PEDESTRIAN NEEDS
The Case in Large California Metropolitan Planning Organizations

RESEARCH QUESTIONS
To what extend do current regional travel demand modeling approaches forecast and understand walking behavior?

What, if any, improvements should be made to these modeling approaches to better integrate and understand walking in the future?

MOTIVATIONS
Walking is an important — and often overlooked — mode of travel.
- Represents 9% of trips in CA in 2012- up from 5% in 2001 (CHTS); National increase in walking as well (NHTS). Growth in CA is related to a number of different factors, as plotted below.
- Walking trips provide a host of positive outcomes — lower obesity rates, improved quality of life, better access to opportunities and no greenhouse gas emissions.

Travel demand models often inadequately incorporate walking and many models in the U.S do not forecast non-motorized travel at all. (Singleton and Clifton, 2013)

Interviewed two staff members at each MPO with different perspectives on regional travel demand modeling – one directly involved with the modeling and a second who used the model output in planning applications.

FINDINGS AND RECOMMENDATIONS

FINDINGS
Input data from household travel surveys likely underreports walking trips.
Walking suffers from the weakest relationship between capacity and demand.
No MPOs have region-wide sidewalk inventories available, making it difficult to assess network gaps or any true pedestrian variables.
Geographic coarseness of large-scale models is a mismatch for short walking trips.

DATA
“We are kind of comparing our data to make sure our assumptions are reasonable especially when we have sketchy data sources, which the household travel survey usually are.”
“The RTP process requires you to have some kind of modeling framework in order to evaluate the outcomes of your investments”
“We don’t know how many of those streets have sidewalks. We don’t have [data on] how many of those streets have a landscape strip that buffers a pedestrian from noise on the street or perceived safety on the street, or whatever. So we have a street pattern variable which influences walking but we don’t have anything that’s a true pedestrian environment variable.”

RECOMMENDATIONS
Continue to support statewide data collection efforts, increase sample size to get include more trips and consider Moving towards GPS collection efforts.
Collect information about pedestrian volumes at specific locations across the network to attempt to close this gap.
Work to develop and maintain a dataset on the presence and quality of pedestrian infrastructure.
Increase the number of traffic analysis zones, particularly in areas where you expect a high walking modal split. (e.g university campuses)

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