Pedestrian-smart in Five Minutes
Ped-focused, cross-agency interoperability

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Smart

We need a pedestrian network to make sense of pedestrian-relevant big data
Smart: Human-centric: how do people actually navigate the world around them?

- Serving pedestrians has to start with human-centric factors:
  - What is an individual’s goal?
  - What infrastructure exists to support their trip?
    - What infrastructure cannot support their trip?
  - How does the rest of the environment impact this experience?
    - Noise levels, crowds, air quality, weather
As we develop “smart city” initiatives that create data to serve pedestrian / transit needs, we need a unifying layer for comparison.

- For vehicular traffic, this is the street network.
- For pedestrians and transit users, this is the pedestrian and transit networks.
Smart: potential impacts of linking data to ped network

- Noise levels: help blind people navigate
- Pedestrian congestion: better transit use estimates, trip planning
- Combined data:
  - This commercial area is not getting a lot of foot traffic. Why not?
Effective

With the right kind of data, we can address real and immediate needs
Using a tool like directions on Google Maps doesn’t really help me get around. Actually sometimes this does more harm than good. I’m sent down streets I can’t cross, or up inclines that are impossible to climb. It can be deeply frustrating.
Are the current solutions effective?

Street-centric maps weren't meant for all pedestrians.
Effective pedestrian routing:

What would we need to know, and how do we describe it?
Effective pedestrian routing:

Personalized Routing
Effective transportation analytics:

400 meter “walk” sheds
Effective transportation analytics: City-scale relative mobility impacts

A

B

C

D

Ped

Ped w/o steep

Ped w/o curb ramps

Ped w/o crosswalks
Effective transportation analytics:

Pedestrian network “walk score”

Walkshed for average pedestrian

- On par with street network
- Much worse than street network
OpenSidewalks

Efficient

We can gather this data quickly using established frameworks
Efficient: flexible data model
Efficient: discovering, contributing, and maintaining data

"Here's how to traverse this sidewalk"

"This sidewalk is broken by a tree root"

"This sidewalk is accessible"

"Here is an accessible sidewalk + bus route"

Global commons

Department of Transportation

Planning

New data

Partial data sync

Translation layer

Full data sync*

Views

CAD Data
Efficient: scalable, can be self-mapped

San Jose self-mapped with OpenSidewalks: 4 people, a few months
THANKS!

Any questions?
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