

# Wisconsin Pedestrian Volume Model

## Contributors

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## What is it?

Tool that WisDOT and local agencies can use to estimate current and future pedestrian intersection crossing volumes

## What can it be used for?

**Safety:** Estimate pedestrian crash rates

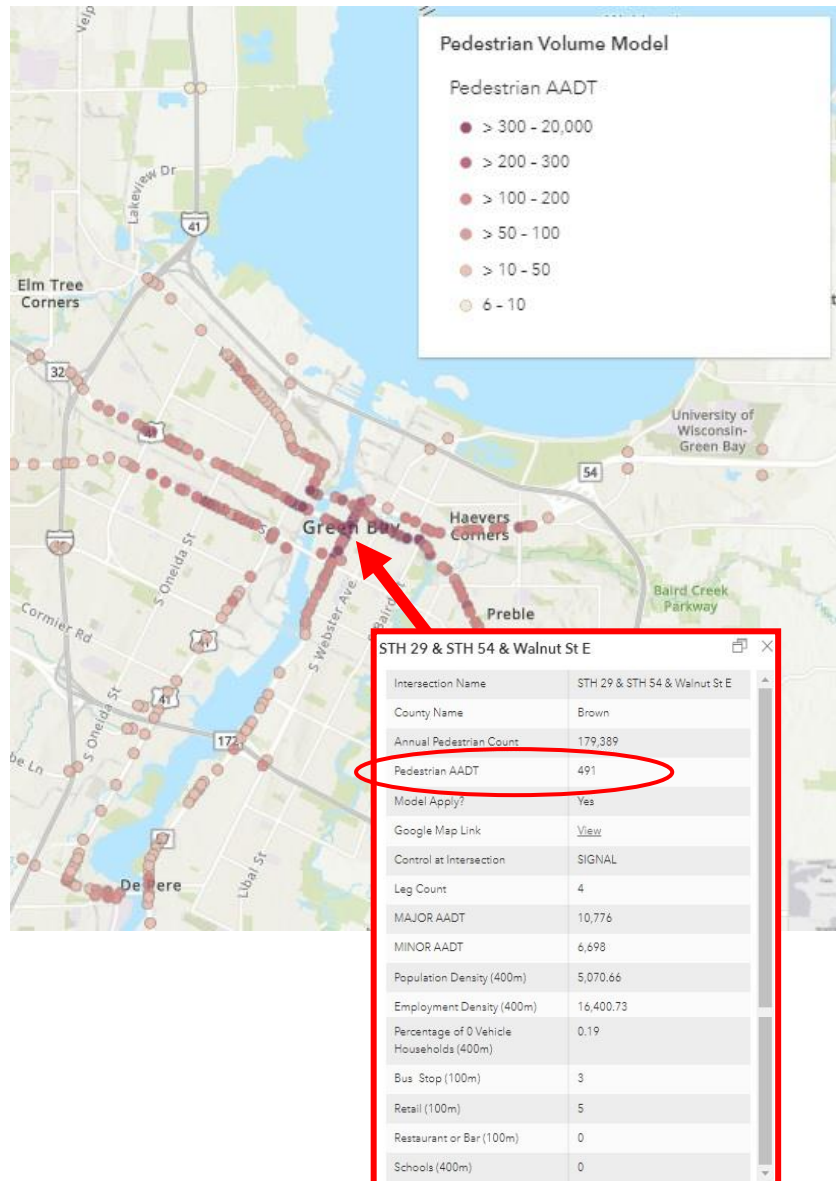
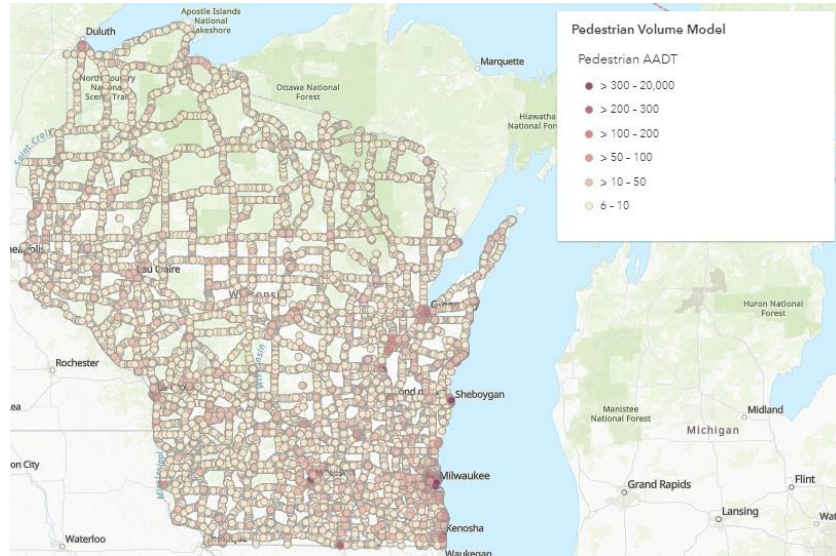
**Planning:** Prioritize pedestrian safety treatments

**Equity:** Show where people with disabilities, without cars, and too old or young to drive cross intersections

**Monitoring:** Add pedestrian volumes to state databases

## What inputs does it use?

- Population Density
- Job Density
- Bus Stops
- Retail Businesses
- Restaurants/Bars
- Schools
- Households without Cars

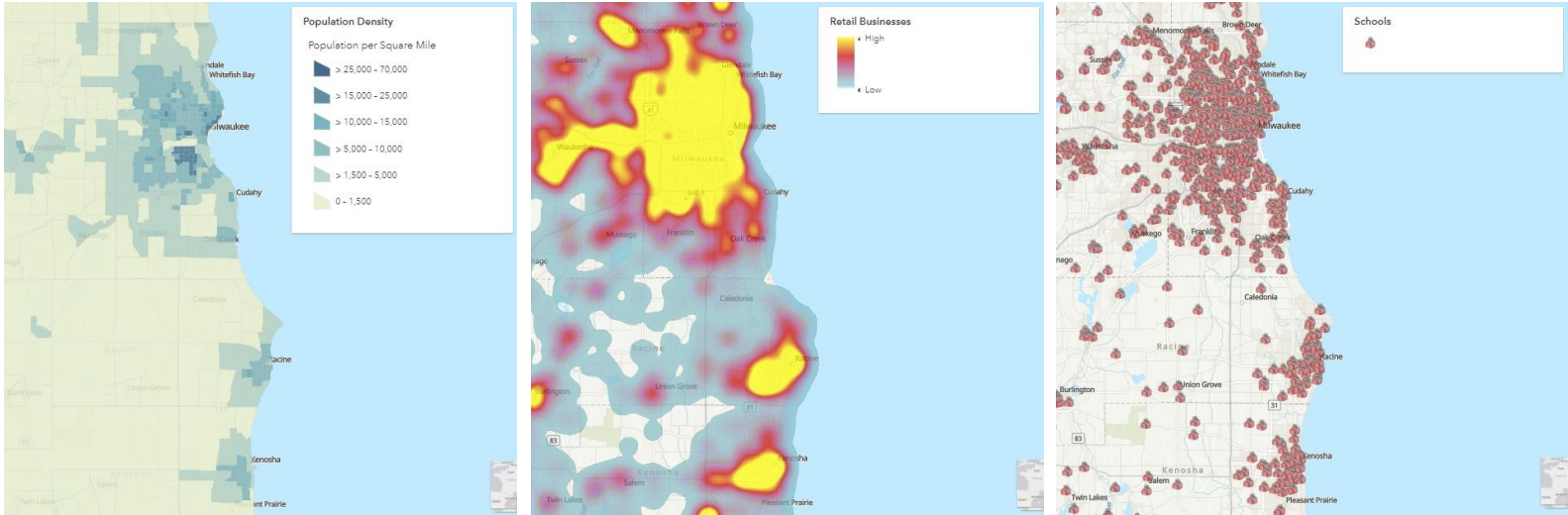


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Original Research  
Schneider, R.J., A. Schmitz, X. Qin.  
"Development and Validation of a Seven-County Regional Pedestrian Volume Model," Transportation Research Record, 2021

## Model development

The model was created by relating approximately 300 intersection crossing counts to surrounding environment variables in the SE Region.

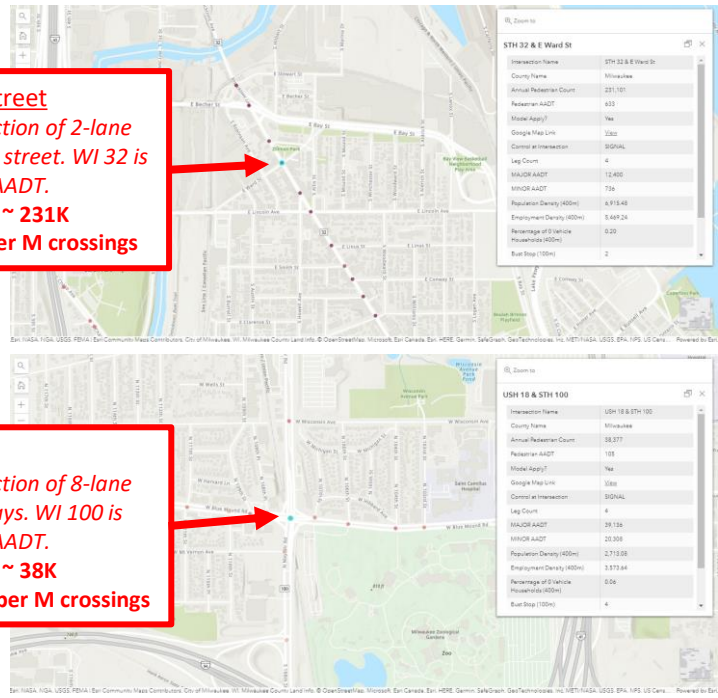


## Crash rate application

Both intersections shown at right had 3 pedestrian crashes reported between 2014-2018. But one has a crash rate that is **6x** higher. Exposure-based rates can represent risk and be used for prioritization and systemic safety analyses.

**WI 32 & Ward Street**  
*Signalized intersection of 2-lane highway and local street. WI 32 is 30 mph with 12K AADT.*  
**Annual crossings: ~ 231K**  
**Crash rate ~ 2.6 per M crossings**

**WI 100 & US 18**  
*Signalized intersection of 8-lane and 6-lane highways. WI 100 is 40 mph with 39K AADT.*  
**Annual crossings: ~ 38K**  
**Crash rate ~ 15.6 per M crossings**



## Model refinement

The model will be validated using additional count data from across the state and can be refined using these new data. Additional counts can be compiled in a statewide pedestrian count database.