



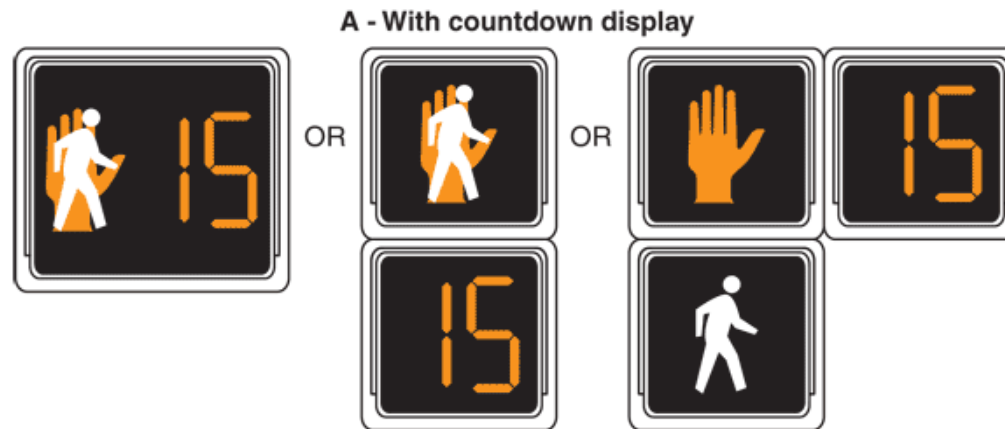
# Safety Evaluation of Pedestrian Countdown Signals: Data Challenges in Pedestrian Studies

Daniel Carter, UNC HSRC  
5<sup>th</sup> Urban Street Symposium  
Raleigh, NC  
May 23, 2017

# Pedestrian Countdown Signals

- FHWA study
- Evaluate pedestrian countdown signals for effect on vehicle/pedestrian crashes
- Develop Crash Modification Factor (CMF)

Figure 4E-1. Typical Pedestrian Signal Indications



# Pedestrian Countdown Signals

City	Signals with PCS
Toronto	1621
Charlotte	120
Philadelphia	223
<b>Total</b>	<b>1983</b>

**Results Pending...**

# Meanwhile...A Continual Need

- “We are running into issues with [state] defunding our Highway Safety Improvement Program project because there are no star rated CMF’s for Intersection Bulbouts.”
  - *City engineer, May 2017*



# Other FHWA Pedestrian CMF Studies Ongoing

- Leading Pedestrian Interval
  - Objective: Before-after study
  - Treatment sites in Chicago, New York, Charlotte
- Protected Left Turn Phasing
  - Objective: Before-after study (ped focused)
  - Treatment sites in Chicago, New York, Toronto



# Recently Completed NCHRP CMF Study (Report 841)



# Data Needs and Challenges

- In CMF Clearinghouse:
  - **5,805** CMFs; only **39** are pedestrian focused
- **Why aren't there more pedestrian countermeasure CMFs?**



# Data Needs and Challenges

- Low Number of Installations
  - Many ped safety treatments are new
  - Not many states and cities trying them
  - Those that have them installed them recently



Source:

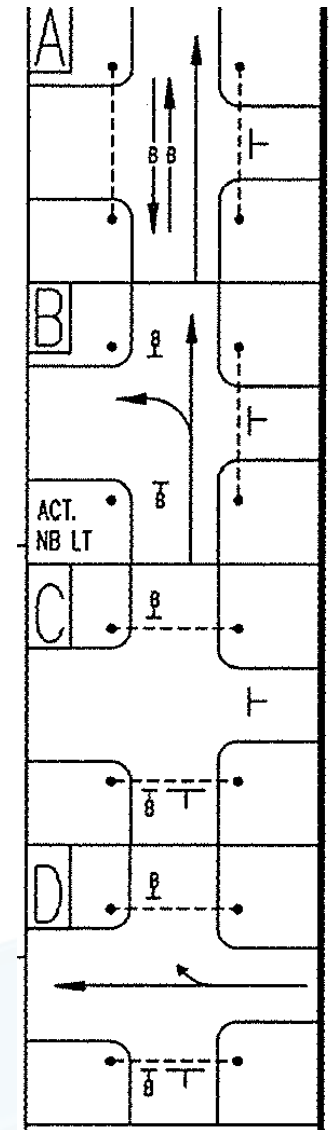
[www.pedbikeimages.org](http://www.pedbikeimages.org)

/ Dan Burden



# Data Needs and Challenges

- Lack of Records
  - Low cost treatments aren't tracked well/centrally (PCS addition, LPI timing change, crosswalk type change)
  - Date of installation difficult to determine (need multiple years of signal timing plans)



# Data Needs and Challenges

- Lack of Ped Counts
  - Ped counting not a regular activity for many cities
  - If done, focus is typically signalized intersections or downtown areas
  - Can be done by research team, but...
    - Expensive
    - Cannot count in before period

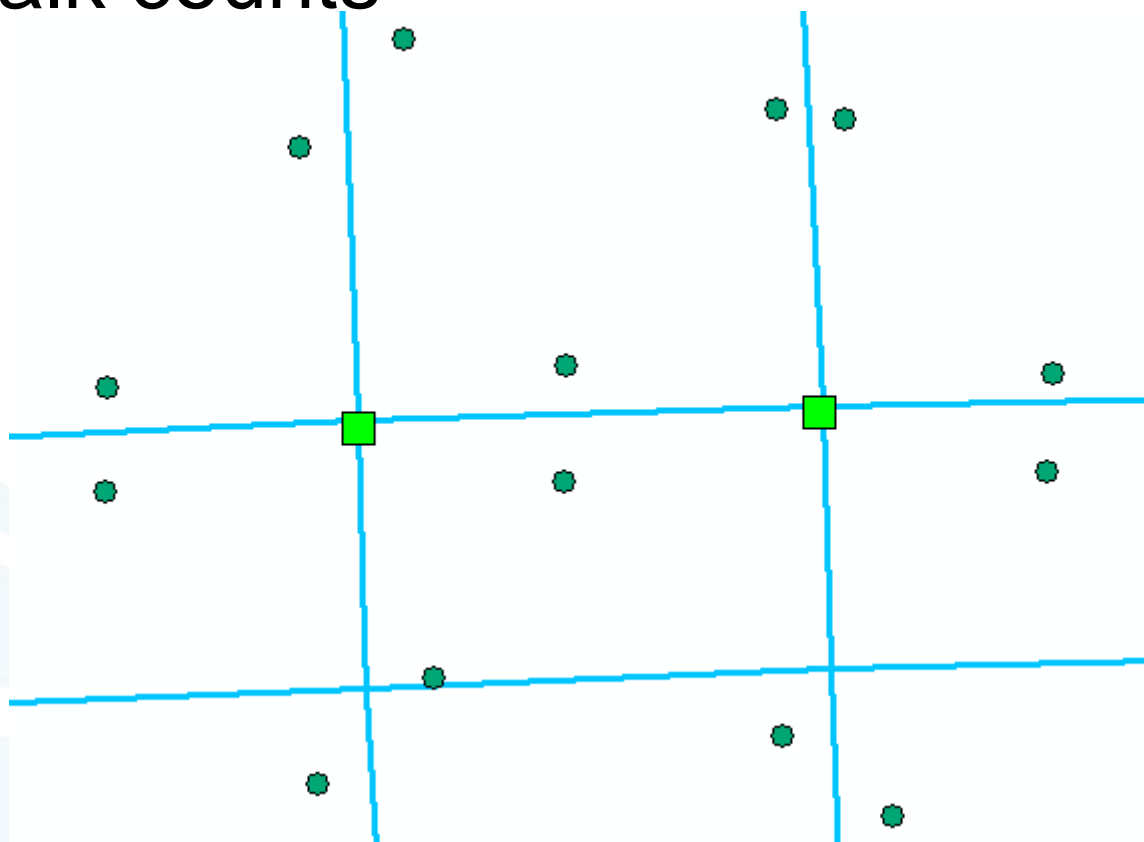
# Data Needs and Challenges

- Charlotte and Toronto – intersection crossing counts



# Data Needs and Challenges

- Chicago and Philadelphia – midblock sidewalk counts



# Data Needs and Challenges

- Rarity of Crashes
  - Ped crashes are rare
  - Low sample size
  - Requires more sites and/or more years of data

# What Can I Do?

- Low Number of Installations
  - Install new pedestrian countermeasures, even if only a few
- Lack of Records
  - Keep centralized records of pedestrian safety countermeasures, especially date of installation



# What Can I Do?

- Lack of Pedestrian Counts
  - Conduct counts at treatment locations (especially in before period)
  - Conduct counts at non treated locations
- Rarity of Crashes – ....

# Thank You

Daniel Carter

UNC Highway Safety Research Center

[daniel\\_carter@unc.edu](mailto:daniel_carter@unc.edu)

5<sup>th</sup> Urban Street Symposium

May 23, 2017