


Considering Unlighted Crosswalks

Response to Transportation Commission Question

June 2020



The question to be answered:

Is no crosswalk better than a
crosswalk without illumination?

Important
considerations:

When are people walking?

When are crashes happening?

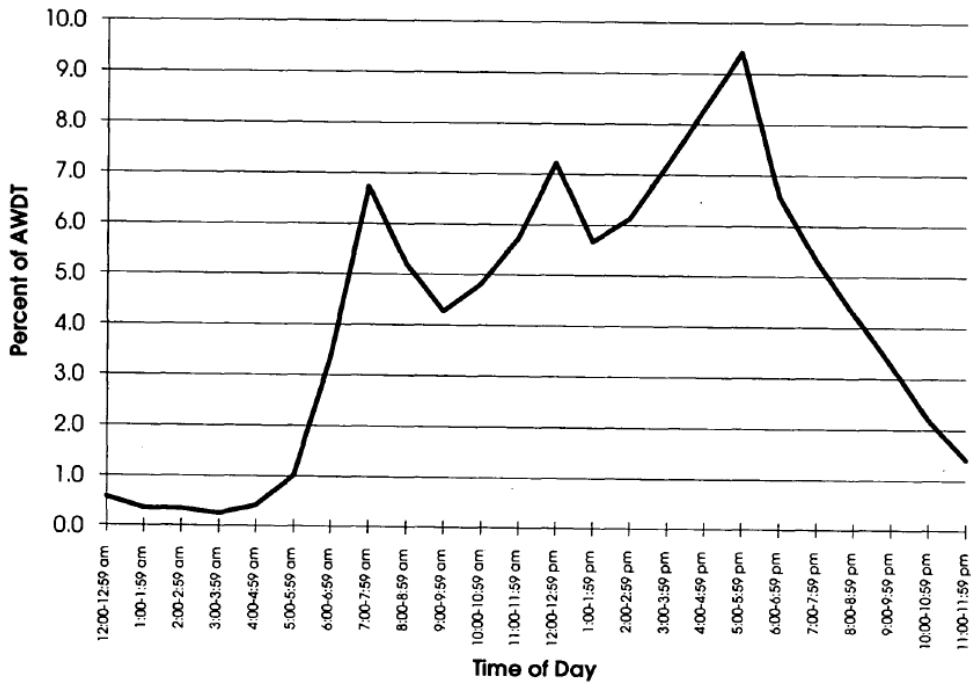
What does the data show us?

How do we best serve all
pedestrians?

When are people walking?

Critical hours for data collection:

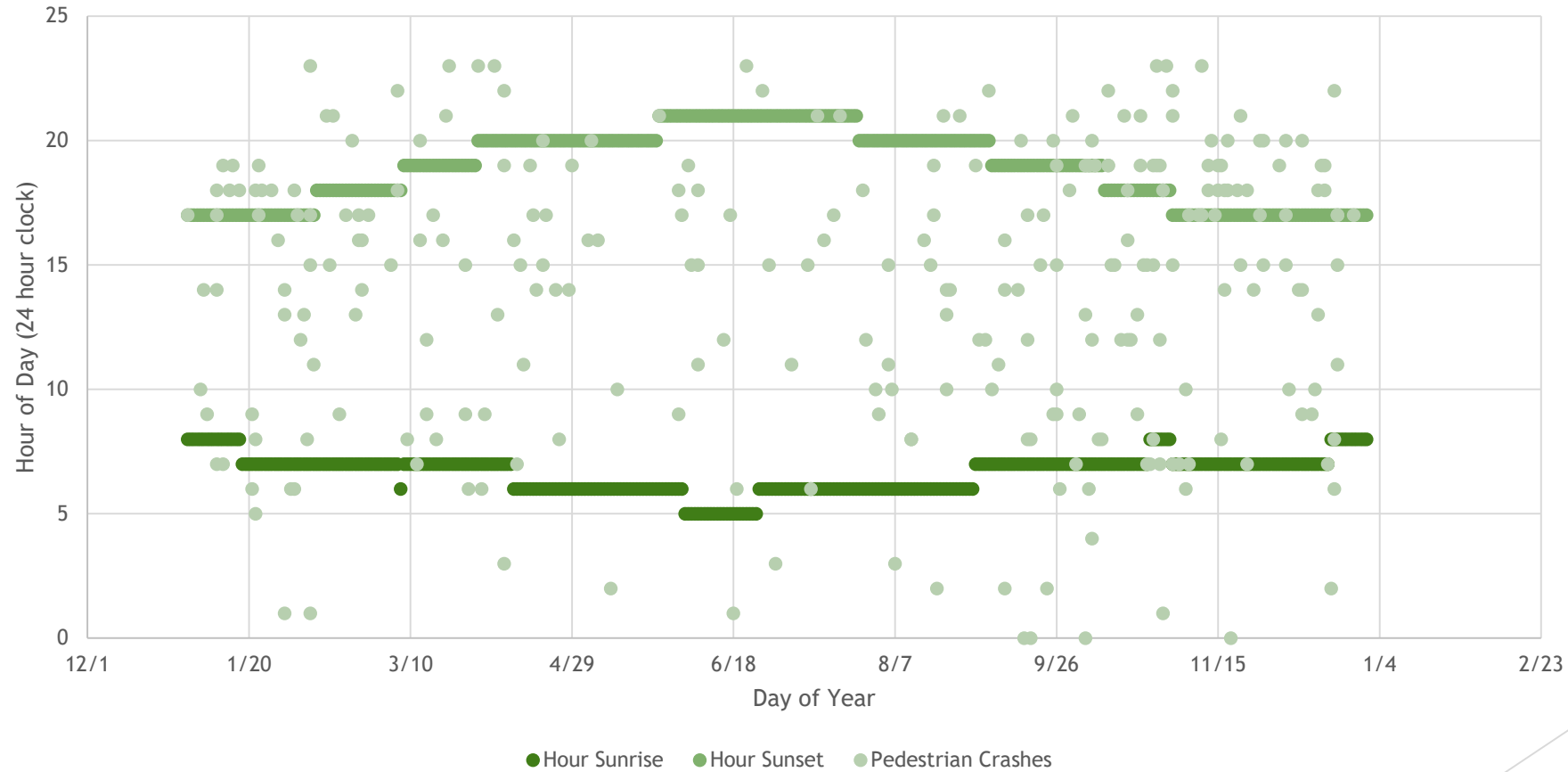
- ▶ 7:45-9:15 AM
- ▶ 11:45 AM-1:15 PM
- ▶ 5:00-6:30 PM



<http://onlinepubs.trb.org/Onlinepubs/trr/1994/1443/1443-004.pdf>

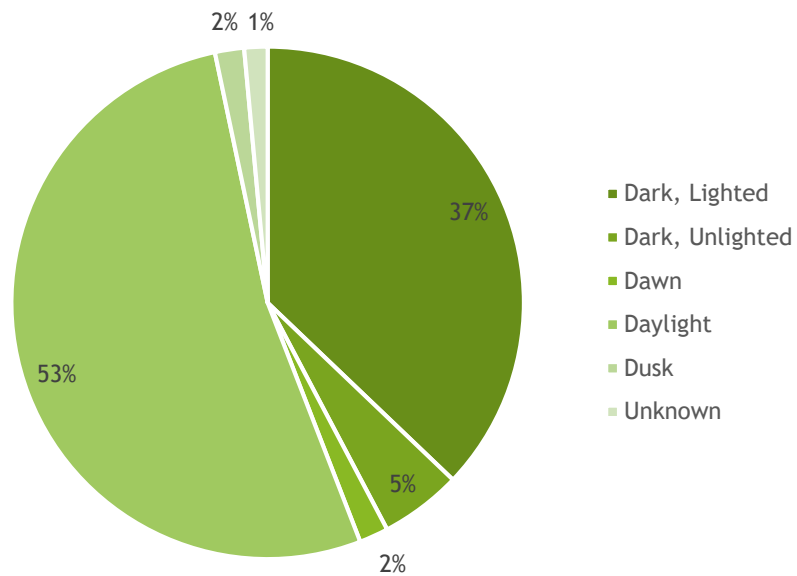
When are crashes happening?

2014-2018 Pedestrian Crashes vs. Sunrise/Sunset



When are crashes happening?

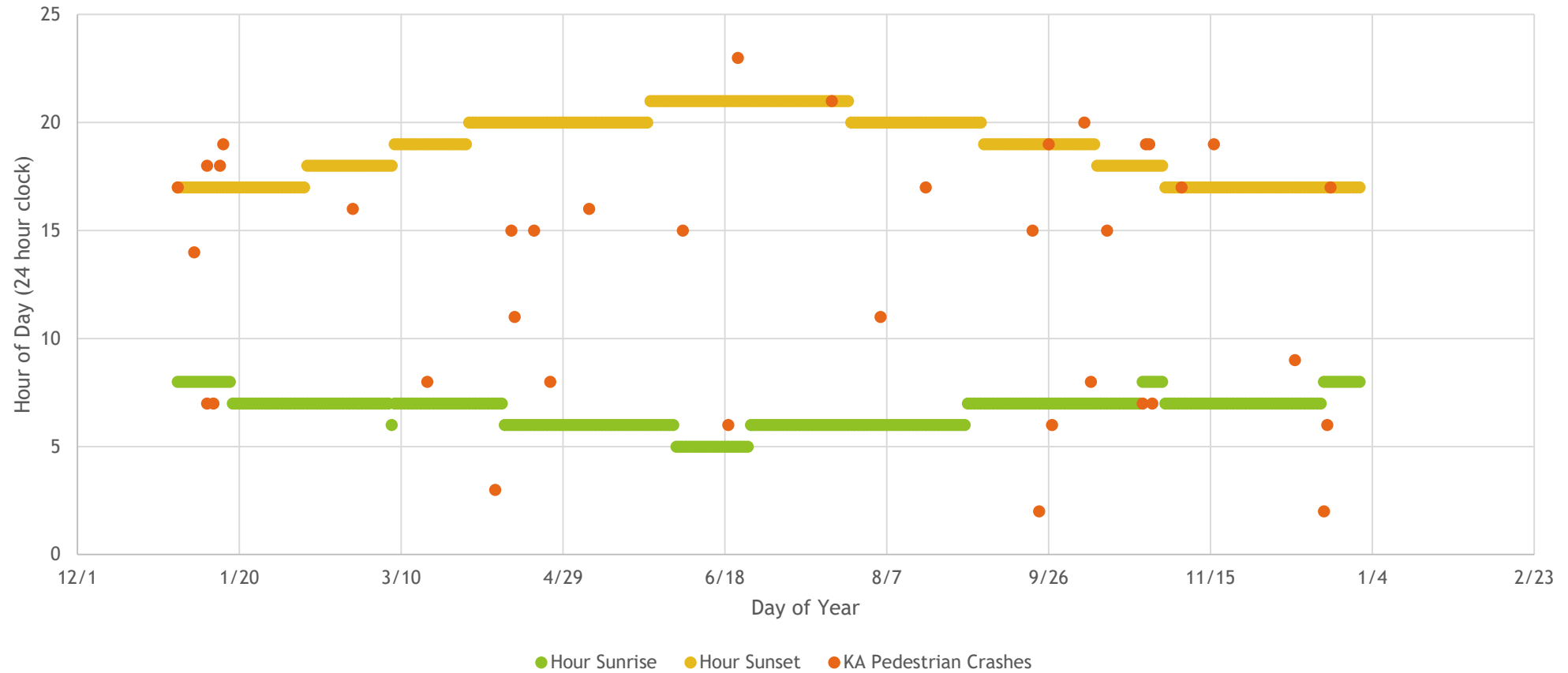
Distribution of Crashse by Lighting



- ▶ Dawn: 2%
- ▶ Daylight: 53%
- ▶ Dusk: 2%
- ▶ Dark: 42%
 - ▶ Lighted: 37%
 - ▶ Unlighted: 5%
- ▶ Unknown: 1%

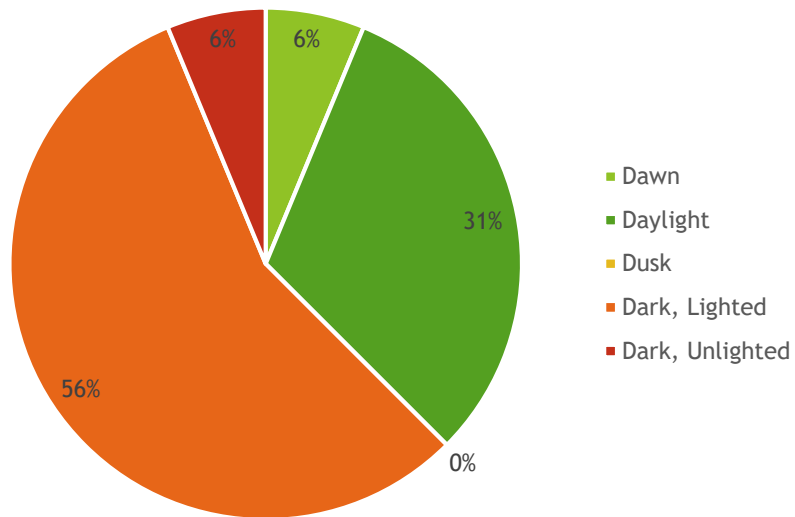
When are crashes happening?

2014-2018 KA Pedestrian Crashes vs. Sunrise/Sunset



When are crashes happening?

Distribution of KA Crashes by Lighting



- ▶ Dawn: 6%
- ▶ Daylight: 31%
- ▶ Dusk: 0%
- ▶ Dark: 63%
 - ▶ Lighted: 56%
 - ▶ Unlighted: 6%
- ▶ Unknown: 1%

What does the data tell us?

- ▶ A significant portion of our pedestrian crashes, 46%, occur outside of daylight hours.
- ▶ 49% of “Dark” crashes involved a hazardous action by the driver
- ▶ “Dark” crashes resulted in the following injuries:
 - K: 1%
 - A: 15%
 - B: 40%
 - C: 23%
 - PDO: 21%

How do we best serve all pedestrians?

Continue to implement proven safety countermeasures.

Example: Crosswalk Visibility Enhancements (FHWA STEPS program)

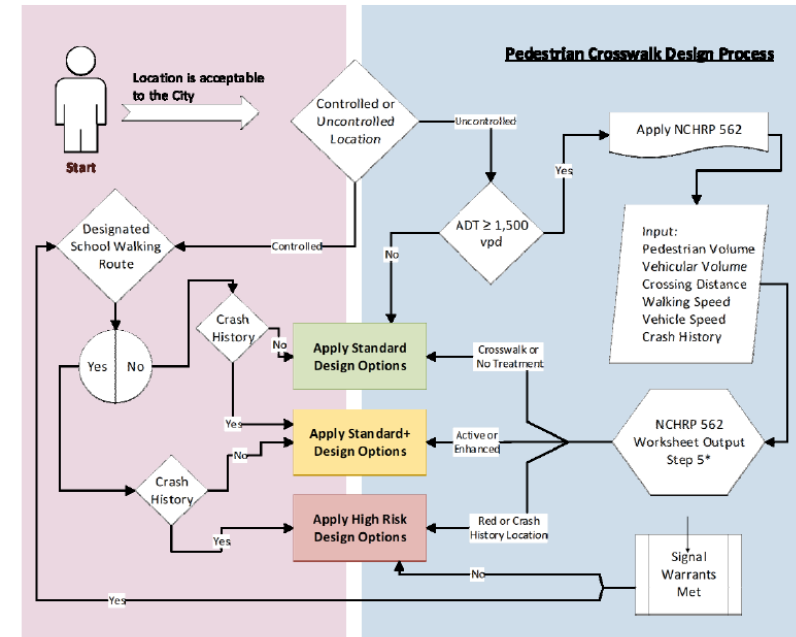
- ▶ High-visibility crosswalk markings
- ▶ Parking restriction on crosswalk approach
- ▶ Overhead lighting
- ▶ Advance Stop Here For Pedestrians sign and stop line
- ▶ In-Street Pedestrian Crossing sign
- ▶ Curb extension
- ▶ Raised crosswalk
- ▶ Pedestrian refuge island
- ▶ Pedestrian Hybrid Beacon (PHB)
- ▶ Road Diet
- ▶ Rectangular Rapid-Flashing Beacon (RRFB)

How do we best serve all pedestrians?

- ▶ Continue with crosswalk evaluation cycles.
- ▶ Implement the crosswalk design guidelines.
- ▶ Continue with street lighting evaluation cycles.
- ▶ Implement prioritized lighting to provide positive contrast lighting on major streets.

Crosswalk Design Guidelines: Overview

City of Ann Arbor



Data Needs:

Pedestrian Volume, hourly
 Vehicular Volume, hourly,
 Crossing Distance
 Walking Speed
 Vehicular Speed
 Crash History

Special Considerations:

Sensitive population?
 Adjacent School?
 Published school walk route?

Notes:

If adjacent to a school or on published school walking route map, design to results plus one level.

Evaluation of street lighting conditions is a concurrent process. Street light installation is managed through the street light Asset Management Team.

Street Lighting:

Street lighting is considered through the Street Light Asset Management Team. New crossings installed on collector streets and higher classification will have positive contrast lighting as part of the design and in collaboration with the lighting team.

Is it better to
leave an
uncontrolled
crosswalk
unmarked unless
lighted?

Illumination is one tool in the engineering toolbox. It is an important tool that complements without replacing the other tools.

Research has little to say on this exact question because lighting is considered a complement to other tools in the engineering toolbox.

Other features such as high visibility pavement markings and signs work during the daylight and dark hours. Lighting only improves conditions during the dark hours.