



# National Transportation Safety Board

## Enhancing Conspicuity

Jana Price, PhD

# Countermeasures to Improve Bicyclist Detection

- Conspicuity treatments
- Improving motor vehicle headlights
- Addressing large vehicle blind spots
- Collision avoidance systems
- Connected vehicle technologies

# Conspicuity Treatments

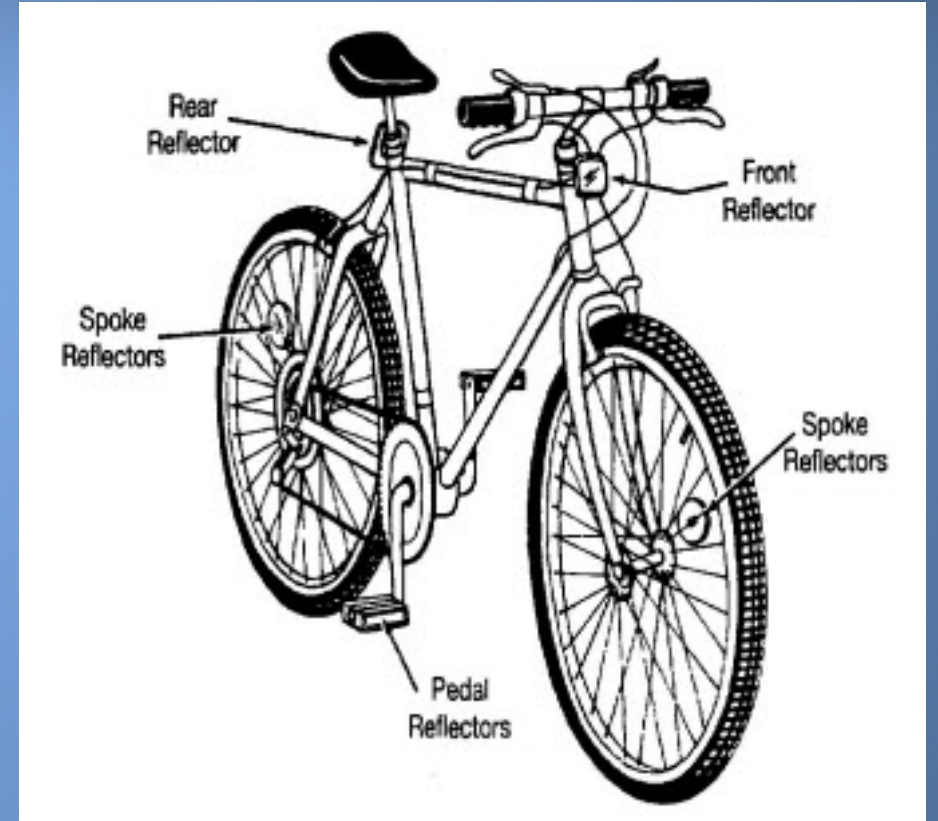
- Associated with improved bicyclist detection and reduced crash rates
- Usage rates are low, even when required or when bicyclists understand their value



Source: Lahrman and others 2018

# Bicycle Reflectors and Lights

- 1980 US Consumer Product Safety Commission (CPSC) regulations
- New lighting and reflective materials may increase bicycle conspicuity



Source: cpsc.gov

# Improving Motor Vehicle Headlights

- 2018 NTSB Special Investigation Report on *Pedestrian Safety*
- Recommendations H-18-39 and H-18-40

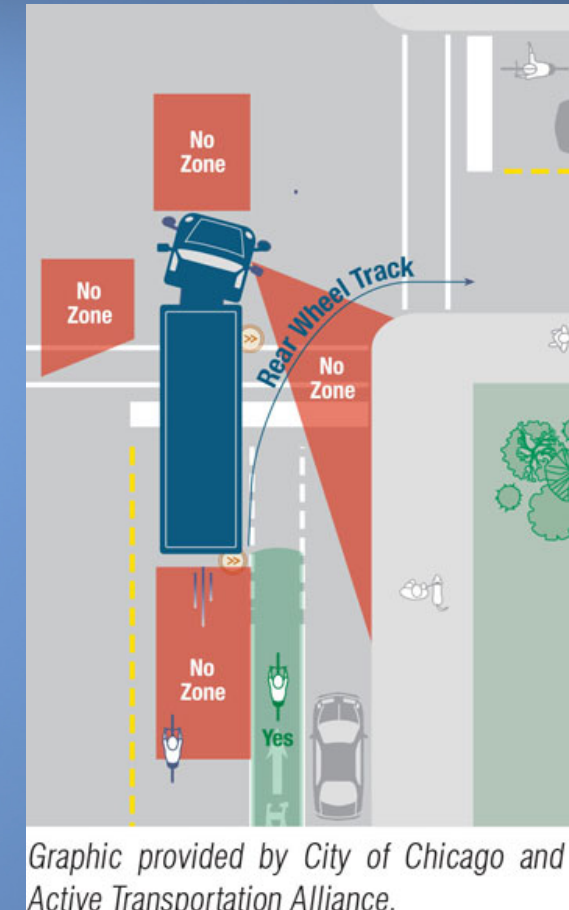
# Adaptive Headlight Systems



Source: Audi

# Addressing Large Vehicle Blind Spots

- Drivers of large vehicles have more difficulty detecting bicyclists due to larger blind spots
- Recommendations H-13-11, H-13-12, and H-14-1



# Collision Avoidance Systems

- Several NTSB recommendations since 1995
- On 2019–2020 Most Wanted List





# Collision Avoidance Systems

- New Car Assessment Program (NCAP)
- Recommendations H-15-6, H-15-7, and H-18-43
- Euro NCAP ratings incorporate vulnerable road users, including bicycle detection

# Connected Vehicle Technologies

- Would allow vehicles to communicate, detect conflicts, avoid crashes
- Recommendations H-13-30 and H-13-31
- 2017 NHTSA notice of proposed rulemaking

# Vehicle-to-Pedestrian (V2P) Research

- V2P systems foster communication between vehicles and pedestrians or bicyclists
- DOT research focus primarily on pedestrians



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