BICYCLE TRAFFIC SIGNALS

Bicycles have different operating characteristics than motor vehicles and may require a bicycle specific traffic signal. Bike signals have the same color signal heads as vehicle signals (green, yellow, and red) with the image of a bicycle stenciled on the lens. Bike signals can be used to provide leading bicycle intervals at intersections to separate bicyclists from conflicts with drivers, pedestrians, or transit vehicles. They are also typically used to accommodate more complex intersection operations with the use of bidirectional protected bicycle lanes.

USE

- Bike signals are generally required to support the operation of bicycle facilities that separate bicyclists from motor vehicle traffic with potential turning conflicts. Protected bicycle lanes, contraflow bicycle lanes, and two-way cycle tracks are examples of facilities where bike signals are often needed.
- Bike signals may be considered at intersections with conventional bicycle lanes or other types of facilities to improve intersection operations or to decrease vehicle or pedestrian conflicts at major crossings.
- Bike signals may be appropriate where shared use side paths cross a street and bicyclists and pedestrians require different clearance times.
- They may also be necessary at complex intersections that may otherwise be difficult to navigate, such as intersections with high numbers of crashes between bicycles and motor vehicles.

DESIGN

- Bike signals may be achieved through minor modification of existing signal equipment or with installation of a new traffic signal.
- The bicycle signal head shall be placed in a location clearly visible to oncoming bicycles.
- If not a regular part of the signal phasing, detection and/or actuation is required.

SPECIAL CONSIDERATIONS

- Engineering judgment should be used to establish the most appropriate controls on a site-specific basis. The following factors should be considered when determining intersection controls:
  - Vehicular, bicycle, and pedestrian traffic volumes on all approaches
  - Bicycle facilities and turning movements
  - Vehicle speeds
  - Sight distance available on each approach
  - Reported crash experience
- Bike signals may be needed to meet the needs of vulnerable users, such as at intersections near schools.

REFERENCES

- NACTO: Urban Bikeway Design Guide, Second Edition, 2014
  - Bicycle Signals http://nacto.org/publication/urban-bikeway-design-guide/bicycle-signals/
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  - Section 4.12.4: Traffic Signals
  - Section 4.12.5: Detection for Bicycles at Traffic Signals
- MMUTCD, 2011
  - Part 4 Highway Traffic Signals http://mdotcf.state.mi.us/public/tands/Details_Web/mmutcdpart4_2011.pdf
  - Part 9 Traffic Control for Bicycle Facilities: Chapter 9D. Signals http://mdotcf.state.mi.us/public/tands/Details_Web/mmutcdpart9_2011.pdf