

House Transportation & Public Safety

Wednesday 9am RM: 017

Chair: Doug Green

My name is Jessica Mathews and I'm a proponent for HB 9. Cities and towns are doing what they can to accommodate and make safer spaces for more people choosing to get to their destinations not using cars. Demand-actuated traffic signals sense the presence of traffic before changing signal phases to optimize traffic flow. The main disadvantage of this system is that defects in the sensor system can cause it to fail to detect users waiting a red light. Defects can include: improper installation by the engineer or not properly calibrated for a lighter weight. Inductive loop sensors are the most commonly used detection systems. If properly configured and adjusted, inductive loop sensors can detect people riding bikes with metal rims however this is not a 100% guarantee. The way that inductive loop sensors work is when a conductive object (metal) enters the area over the loop, ideally, the signal detector circuit induces electrical currents. These low currents, ideally, are then detected in the signal controller cabinet initiating that a vehicle is present and change the signal.

As I stated, this is not always a guarantee. There are variables to consider that affect the introduction of a conductive object (metal) being detected to change the signal:

1. Size and shape of the conductive object
2. The orientation of the object with respect to the sensor loops
3. The positioning of the object over the sensor loops
4. Size and shape of the sensor loops

For example, North Carolina's DOT adopted a bicycle un-friendly standard loop design of 60 ft. Communities that design loop detectors for bike riders are usually 6-9 feet in length. The relatively small bicycle wheel will create a very, very small percentage of electrical currents resulting in a lower probability of the biker being detected and therefore having to break the law and proceed through the red light. If the loop size is more adequate to the size of the bicycle, the more likely the bicycle wheels will cover the detector loop and initiate signal actuation.

As a person who chooses and prefers my bike over my car, I've encountered multiple intersections where I am not detected – even including the ones that have the loop detectors designed to detect me. I'm someone who abides all the rules of the road and it's really frustrating to sit at a light for two or three full cycles and not be detected. I, therefore, have to safely proceed through the red light breaking the law. This only perpetuates the exhaustive, 'another damn bicyclist running a red light' commentary and not understanding the 'why.'

I found 9 states that have 'Safe-on-Red' or 'Dead Red' laws for bicyclists, mopeds, and motorcycles. They vary by state on how to address the issue, but they all include basic instructions on how one can legally proceed through a malfunctioning red light. Many of these state guidelines define 'unreasonable time period' as 120 seconds up to three minutes.

Illinois (2012) (625 ILCS 5/11-306)

Minnesota (2002) (Statute 169.06)

Missouri (2009) (Statute 304.285)

Nevada (2013) (Statute 484B.307)

Oregon (2015) (Statue ORS 811.260)

South Carolina (2008) (S.C. Code 56-5-970)

Tennessee (2003) (Tennessee Traffic Control Signals 55-8-110)

Virginia (2011) (Statute 46-2-833)

Wisconsin (2006) (Statute 346.37)

I see the sense of clarifying and having this type of law on the books until technology updates are made so that all traffic lights are able to recognize lightweight vehicles that contain enough metal to set off the sensors. I would even consider adding motorcycles and mopeds under this protection as many of those riders face the same issues