

Green Safety Lights on Winter Maintenance Vehicles

Green revolving or flashing lights are allowed for use on state and local vehicles in use during winter weather operations as a result of Delaware [Senate Bill 206](#), signed by the Governor September 26, 2024. As always, the details matter, so let's see what the bill actually allows and talk about what it does not.



The results of the bill are reflected in [§4356A](#) of Title 21 in the Delaware Code. Snow removal equipment owned and operated by the State or a municipality, while in use during winter weather operations, may operate green revolving or flashing lights. The law is specific to publicly owned vehicles and during winter maintenance activities only. Privately owned vehicles or contractor vehicles are not permitted by the bill to operate green lights.

The interest in use of green lights originated with concerns of crashes with snowplows and other winter maintenance equipment. In some states, this was a frequent occurrence and a contributing factor in some instances was the inability of trailing vehicles, which might be moving at twice the speed of the plow or greater, to detect the slower moving plow in low visibility conditions as they closed the gap.

§ 4356A. Use of revolving or flashing green light.

(a) A motor vehicle may be equipped with a green revolving or flashing light if the motor vehicle meets any of the following requirements:

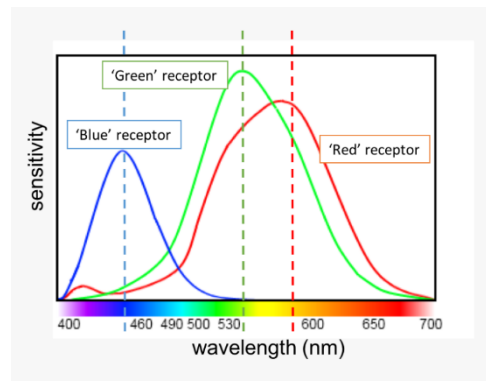
- (1) Is used by a fire department or police department.
- (2) Is designated or authorized as an emergency vehicle by the Secretary of the Department of Safety and Homeland Security and used by a federal, state, county, or municipal agency or public service corporation.
- (3) Is snow removal equipment that is owned and operated by the State or a municipality.

(b) A motor vehicle authorized under subsection (a) of this section to be equipped with a green revolving or flashing light may only use the light as follows:

- (1) When the motor vehicle is in service at an accident, fire, or disaster scene to signify a command post to which fire or police officials may report for instructions or orders.
- (2) If the motor vehicle is a hazardous material response vehicle traveling to an accident, fire, or disaster scene at the request of a fire department or police department.
- (3) If the motor vehicle is snow removal equipment that is owned and operated by the State or a municipality and is in use during winter weather operations.

Traditionally, and by law in most states, red and blue lights are reserved for fire and law enforcement vehicles, while public works agencies and contractors have used amber beacons and strobes. In 2008, the National Cooperative Highway Research Program (NCHRP) [Report 624](#), *Selection and Application of Warning Lights on Roadway Operations Equipment*, did a deep dive on the applicability of green lights. Subsequently, Michigan Department of Transportation (MDOT) and the Michigan State University [studied](#) the *Effectiveness of Green Strobes on Winter Maintenance Vehicles and Equipment* in August 2020.

Early work showed that we have greater sensitivity to the color green over a broad wavelength. The whole discussion of rods and cones in our eyes is beyond the



scope of this article, but the static and dynamic tests conducted by NCHRP and Michigan confirmed this concept.

Indeed, Michigan confirmed many of the NCHRP findings and they recommended several items from the collective work. They found that a combination of quad flashing amber lights and single flashing green lights worked best (quad green was found to create unacceptable glare). In fact, MDOT settled on a rather specific combination of amber, green, revolving beacon, single and quad flashing, high and low location lights for their trucks, which might be overkill for smaller agency vehicles. Moreover, they found that flash patterns and colors performed differently, and glare conditions varied at night versus daytime, and under different visibility conditions. Hence, programmable warning light configurations were also recommended.



Local agency vehicles are almost never dedicated to winter operations and the same is true, with occasional exceptions, for large agencies and departments of transportations. Since, in Delaware, green lights are permitted by law only for state and municipal vehicles and only during winter maintenance operations, their installation requires the ability to operate in amber mode outside of storm operations. This is a small concern, since most lighting systems these days include options for programmable control panels that enable several lighting and flash configurations.



Snow has been scarcer than normal in Delaware these last several years, so perhaps we're due for some this winter. If so, anticipate seeing more of these green lights on state and municipal winter maintenance vehicles. But remember, these are not for general use and not applicable under the Delaware Code for contractors and other private sector vehicles.

The Delaware T²/LTAP Center's Municipal Engineering Circuit Rider is intended to provide technical assistance and training to local agencies, so if you have technical assistance or training needs, contact Matt Carter at matheu@udel.edu or (302) 831-7236.

