For more information contact: Jenni Hosey (573) 526-4493

Research Summary

Safety Impacts of Fluorescent Yellow-Green Signs on Pedestrians

Effective signage for pedestrians can help to improve pedestrian safety by increasing driver awareness of the presence of pedestrians. The 11th Edition of the Manual on Uniform Traffic Control Devices (MUTCD) from the Federal Highway Administration (FHWA) specifies the use of yellow sheeting for pedestrian or bicycle signs and fluorescent yellow-green (FYG) for school signs, with an option for the use of FYG sheeting for pedestrian or bicycle warning signs. MoDOT changed its standards around 2005 to use fluorescent yellow instead of the standard yellow color to improve the target value of its warning signs.

Several local agencies in Missouri have implemented the practice of using FYG for pedestrian warning signs. The current practice of the Missouri Department of Transportation (MoDOT) is to primarily use FYG only for school signs. However, MoDOT is considering changing its current pedestrian and bicyclist signs from FY to FYG if there is a documented safety benefit. Such a change would involve considerable cost and effort for MoDOT due to the large number of FY pedestrian and bicyclist signs on the state system.

The objective of this research study is to synthesize existing research and review the state of the practice regarding the use of FYG for pedestrian and bicyclist signs.

The research methodology includes a literature review, survey of departments of transportation (DOTs) and metropolitan planning organizations (MPOs), and follow up interviews with a subset of DOTs and MPOs. The review of existing literature encompassed research studies and DOT guidance, policies, and standards (e.g., state MUTCDs or MUTCD supplements, traffic manuals, and design manuals). Separate surveys were developed for state DOTs and MPOs.

"The results of this study suggest a need for additional research into the potential safety benefits of FYG signs."

Overall, the results from previous research studies are inconclusive regarding the use of FYG for pedestrian and bicyclist signs, and the research may be outdated. While some studies have shown increased stopping, slowing, and legibility distance with the use of FYG compared to standard yellow, other studies have not found any changes in speeds or driving behavior associated with the use of FYG for pedestrian and bicyclist signs. While previous research suggests benefits to using fluorescent colors, the prior research has not shown that one fluorescent color provides superior safety benefits to other fluorescent colors. The literature search did not identify any research studies on FYG signs completed within the past ten years or any

studies comparing FYG with FY for pedestrian and bicyclist signs.

Responding agencies have primarily switched to FYG for pedestrian and bicyclist signs. None of the responding agencies indicated that they switched to FYG based on an internal or external research study. Responding agencies have most often switched from yellow to FYG for pedestrian and bicyclist signs. The switch to FYG is often implemented using a phased approach.

The research study also identified challenges to the use of FYG for pedestrian and bicyclist signs. Examples of these challenges include the need for standards or policies for use, need for performance data, cost, maintenance considerations, stakeholder coordination, the time and effort required to replace the signs, and the need to prioritize other pedestrian and bicyclist safety countermeasures.

While a limited number of agencies have seen improved safety performance with the use of FYG, the research did not identify significant and conclusive evidence regarding potential safety benefits associated with the use of FYG for pedestrian and bicyclist signs. The results of this study suggest a need for additional research into the potential safety benefits of FYG signs.

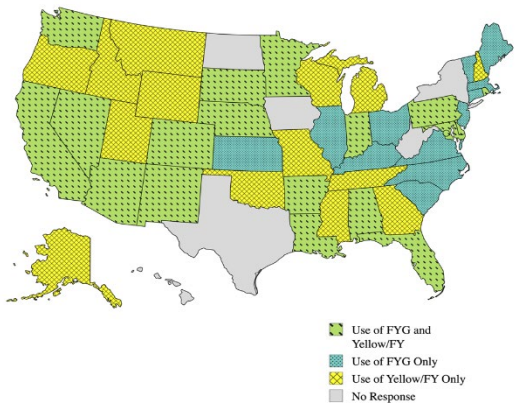

Figure 1: Map showing use of FYG for pedestrian signs by state DOT (map created with mapchart.net).

Project Information

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CONTACT INFORMATION:

Jenni Hosey, AICP, PMP
Senior Research Analyst
Missouri Dept. of Transportation
1617 Missouri Blvd.
Jefferson City, MO 65109
(573) 526-4493
Jennifer.J.Hosey@modot.mo.gov