The Application of Higher Visibility Road Markings in Inclement Weather

Hilbig, Joshua (School: Farmington High School)

Many Utah citizens complain about “invisible” lines on the road; however, the Utah Department of Transportation has been working to fix this issue for many years. This project examines the difficulties of creating consistent visible road lines, as well as how current lines can be improved using a cost-benefit analysis. First, three sample lane lines were painted on a concrete block with white road marking paint to mimic current roads. Next, three identical green marked lines were painted parallel. One set had specific reflective glass beads and the other had white reflective glitter. These blocks were placed in front of a led headlight both in dry conditions and simulated inclement weather. The reflectivity index was calculated and recorded for each condition. The hypothesis for this experiment was that green lines with reflective glass beads would have the greatest reflectivity. The experimental results partially supported this, with the white paint and glass beads having the highest initial reflectivity from a quantitative perspective (partially disproving), but the reflectivity spectrum differed from the qualitative view where the green lines appeared brighter (partially proving).

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