



UNIVERSITY TRANSPORTATION CENTER RESEARCH BRIEF

PROJECT TITLE: Deteriorization of Green Conflict Paint for Bicycle Facilities

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INSTITUTION: SINGLE-INSTITUTION PROJECT

ESTIMATED COMPLETION DATE: AUGUST 2020

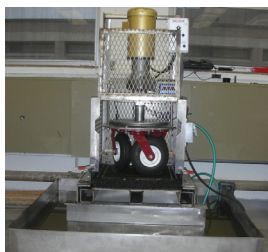
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Background

Throughout the country new types of bicycle infrastructure and pavement markings are being installed, such as “bike boxes”, “separated bike lanes”, and “sharrows”. These innovations are intended to improve safety for a growing number of cyclists. One recent innovation is the use of “green conflict” paint to improve bike lane visibility.

The MUTCD is awaiting research about material (water-based vs thermoplastic), design (pattern), chromaticity (color specification), and retroreflectivity specification. The performance of some pavement markings can be degraded significantly after a short time of service. New pavement markings may even have unknown performance until they are used on roads. Therefore, many cities are evaluating proper material type and pattern to ensure adequate performance and safe operations. Research is needed for various aspects of green conflict paint to examine its durability and optimal performance. Research is needed to verify whether or not dashing has the added benefit of providing better friction for motorists and bicyclists. If this is true, then perhaps solid paint should not be used near the stop bar or at any location where bicyclists are expected to stop suddenly. Friction should be tested under varying degrees of deterioration, weather conditions, and paint materials.



Research Project

Many cities in the Pacific Northwest are expanding their bicycle network to improve mobility. One recent innovation is the use of “green conflict” paint to improve bike lane visibility. The goal of this project is to evaluate the performance of green conflict paint under simulated deterioration and different operating conditions, including rain and snow. The relevant PacTrans theme is Improved Reliability across Modes: decision support tools for winter road maintenance and performance under extreme conditions.

We will test different green paint products (e.g., water-based and thermoplastic) under varying levels of simulated traffic and snow removal agitation. We will document at least seven measures of effectiveness (MOEs) including friction, texture, color, luminance, percent loss, and retroreflectivity. We will use a three-wheel simulator under different loadings to simulate varying levels of traffic. The MOEs will be assessed under simulated weather conditions wet, dry, and snowy (low temperature slush). Friction will be analyzed for solid design and dashes. Additionally, we will inspect the installation of green conflict paint in the field. The City of Moscow has scheduled installation at eight intersections along a one-mile section of a minor arterial.