

U.S. Department of Transportation: Clearview Highway Improvement

The Clearview font allows agencies to meet the needs of older drivers, with regard to the legibility of guide signs, without an increase in the size and cost of the signs. In August 2004, the FHWA issued interim approval for the use of the Clearview font for positive contrast legends on guide signs.

Lead Agency:

U.S. Department of Transportation/Federal Highway Administration (FHWA)

Agency Mission:

Improve mobility on our Nation's highways through national leadership, innovation, and program delivery.

Principal Investigator:

Carl K. Andersen, Roadway Team Leader,
Office of Safety Research & Development,
Federal Highway Administration, HRDS-05,
6300 Georgetown Pike,
McLean, VA 22101

Partner Agency:

Texas Department of Transportation
Pennsylvania Department of Transportation

General Description:

The Clearview highway sign font was developed through a decade of research starting in the early 1990s. Clearview font letters were developed to address four issues with the legibility of standard highway sign alphabets:

- (1) upgrade highway signing word messages to accommodate the needs of older drivers without increasing the overall size of the signs;
- (2) improve word pattern recognition;
- (3) improve the speed and accuracy of destination recognition and the distance at which a sign can be read; and
- (4) control halation (glow that makes letters become unrecognizable blobs) that may occur on high brightness retroreflective materials for drivers with reduced contrast sensitivity.

The concept for an improved highway sign font was developed by Meeker & Associates, Inc., in response to the determination by the FHWA that guide signs using the standard highway sign alphabets would have to be increased in size to meet the needs of older

drivers. The initial research on Clearview was conducted at the Pennsylvania Transportation Institute (PTI). In two PTI studies, the use of an early version of Clearview Bold improved nighttime sign reading distances by up to 16 percent when compared to the E-modified road sign typeface. An initial study at the Texas Transportation Institute (TTI) found that there were significant differences in the legibility of full-size signs as compared to the smaller signs tested at PTI. Meeker & Associates, Inc. made refinements to the Clearview font that were used in additional joint FHWA/TxDOT studies conducted by TTI.

A TTI study on nighttime sign legibility as a function of retroreflective material and sign font found that the refined Clearview font provided an 11 to 12 percent increase in legibility distances for guide signs using Clearview. Both the Pennsylvania and Texas Departments of Transportation reviewed the research on the use of Clearview font for guide signs and requested that Clearview font be allowed for use on positive contrast guide signs.

Excellence: What makes this project exceptional?

This project is exceptional because the results allow agencies to meet the nighttime guide sign legibility needs of older drivers without a need to increase the physical size of the signs. Increasing the sign size would potentially have resulted in a need to redesign and replace sign support structures. In many cases, larger signs are not feasible, as the existing signs are already 12 feet in width.

Significance: How is this research relevant to older persons, populations and/or an aging society?

Development and evaluation of Clearview font demonstrated that the nighttime legibility requirements of older drivers could be met without the need to increase the size and cost of overhead guide signs. Without these results, it would have been difficult, if not impossible, for agencies to meet this need. The results are a significant improvement in the ability of the national highway signage system to meet the needs of older drivers, thereby improving their mobility and potentially improving safety by permitting all drivers to acquire information in a timely manner.

Effectiveness: What is the impact and/or application of this research to older persons?

The FHWA has issued interim approval for the use of Clearview font on positive contrast guide signs, which permits agencies to install signs that meet the nighttime visual requirements of older drivers.

Innovativeness: Why is this research exciting or newsworthy?

The development and evaluation of the Clearview font was a cooperative venture by a private company, two transportation institutes, two State Departments of Transportation, and the FHWA. Meeker & Associates, Inc. saw a national need that the company felt

uniquely capable of fulfilling, and initiated work with the Pennsylvania DOT and PTI. The results of the initial evaluations prompted the FHWA and Texas DOT to fund research at TTI to complete the evaluation of the first alternative highway sign font developed in the U.S. in the last 50 years.