

Technology in Rural Transportation



A recent study documented more than eighty proven, cost-effective, “low-tech” solutions to rural transportation needs, most developed or implemented by local transportation professionals. One of these solutions is outlined below:

Learn all about the simple solutions on the Internet at <http://inform.enterprise.prog.org>

The simple solutions report is available from Hau To at (503) 892-2533 or email: to@crc-corp.com

Low-Cost Visibility Sensor

Overall goal:

To accurately model visibility images provided via CCTV cameras to improve safety operations along roadway networks.

Technical approach:

This project is building on previous studies conducted to investigate detecting and categorizing reduced visibility conditions using data received through closed circuit television (CCTV) monitors. This is accomplished by analyzing the contrast or amount of white color present within an image. By comparing this contrast value against a predetermined set of limits, which have been established for various visibility threshold levels, appropriate warnings can be issued and preventative safety measures taken. By utilizing existing CCTV cameras, it is anticipated that low visibility conditions such as fog or snowstorms can be accurately tracked at a relatively low cost.

Current status:

Initial field testing is scheduled to begin in November, 1996. All equipment has been procured and deployed to the test site. Preliminary analysis of existing data from a previous study has identified a definite correlation between contrast levels and visibility levels.

Location / geographic scope:

The field test is taking place near Duluth, Minnesota. The system could potentially be deployed in any location where CCTV cameras are in use for another application.

Agencies involved:

The project is being lead by the Minnesota Department of Transportation (Mn/DOT) and the University of Minnesota-Duluth (UMD). Additional support is being provided by the Ontario Ministry of Transport (MTO) and the Aurora Consortium, a Federal pooled-fund study charged with the investigation and development of Road and Weather Information System (R/WIS) technologies.



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Cost information:

The preliminary testing and evaluation efforts approved by Mn/DOT have an estimated budget of approximately \$29,000.

Key contacts:

Edward J. Fleege, Minnesota DOT. (218) 723-4850, Ext. 3540

Have goals been achieved?

Further details will be available when the field study is completed.

Solution timeline:

As of 2001, the twenty-month project has been completed. Initial findings should be available shortly.

