

Status of the Vehicle Detector Clearinghouse

NATMEC 2002 session 3 on
“Non-Traditional Sensors”

May 13, 2002

The Vehicle Detector Clearinghouse

- The Vehicle Detector Clearinghouse (VDC) is a multi-state, pooled fund project managed by the Southwest Technology Development Institute at New Mexico State University (NMSU)□, and sponsored in cooperation with the U.S. Department of Transportation FHWA.
- The contract is administered through the Research Division of the New Mexico State Highway and Transportation Department.

Problem Statement

- New vehicle detection and surveillance technologies are complex and expensive;
- No standardized testing methods are in place;
- Purchasers must usually conduct their own product testing - big investment of time and money;
- Tests quickly become outdated due to changing technologies and subtle model changes; and
- Purchasers encounter difficulty in adequately training staff in the installation, trouble-shooting, and operation of vehicle detection equipment.

VDC Mission

- Provide information to transportation agencies on the capabilities of commercially-available vehicle detectors by gathering, organizing, and sharing information concerning tests and test procedures in a timely, efficient, and cost-effective manner.
- The VDC acts as a catalyst for developing standard test protocols so that no matter who performed the tests, the results will become widely acceptable.

VDC Team

- Luz Elena Y. Mimbela, Project Manager, SWTDI
- John Hamrick, Project Consultant, Western and North Central U.S.
- Perry Kent, Project Consultant, Eastern and Southern U.S.
- Gabriella Cisneros (Gaby), VDC Webmaster
- Rudi Schoenmackers, Director, SWTDI

VDC Activities

- Maintain a VDC home page on the World Wide Web;
- Publish and mail out a VDC Newsletter;
- Participate actively in meetings of ASTM E17.52 Subcommittee on Traffic Monitoring Devices;
- Facilitate a communication network within the vehicle detector expert, manufacturer, and research community via VDC listserv.
- Provide technical assistance on traffic monitoring and surveillance topics.

VDC Web Site

URL address: <http://www.nmsu.edu/~traffic/>



... a state pooled-fund project in cooperation with the Federal Highway Administration



VDC Web Site Contents

What's New

- Meetings, conference announcements, and calls for papers;
- Reports, papers, and surveys available online;
- VDC highlights and updates - includes VDC Newsletter, ASTM E17.52 meeting minutes, etc.;
- VDC Listserv and discussion Group.

VDC Web Site Contents

Names, addresses, phone numbers

- State traffic monitoring contacts;
- Research and planning contacts;
- Technology transfer contacts;
- University transportation center contacts.

VDC Web Site Contents

Technical report abstracts searchable database

- Traffic monitoring conference proceedings;
- Vehicle classification;
- Weigh-in-motion (WIM);
- Other traffic monitoring.

VDC Web Site Contents

Vehicle detector equipment searchable databases

- Data collection;
- Products;
- Degree of satisfaction with vehicle detector equipment*

*Work in progress!

VDC Web Site Contents

Key links

- Federal and state DOTs;
- International counterparts;
- Research and testing centers;
- Standards development organizations;
- Transportation resources; and
- Vendors/Manufacturers of vehicle detector equipment.

VDC Newsletter

- Equipment database update;
- Degree of satisfaction survey;
- Standards development;
- VDC web site survey; and
- Other related items.

ASTM E17.52 Subcommittee Activities

- Act as Chair of E17.52 Subcommittee on Traffic Monitoring Devices;
- Other VDC team members are active members of E17.52;
- Developed the “Standard Practice for Using Pneumatic Tubing for Roadway Traffic Counters and Classifiers;”

ASTM E17.52 Subcommittee Activities

- Completed the revamp of “Standard Specification for Highway Weigh-in-Motion (WIM) Systems with User Requirements and Test Method;”
- Submitted for balloting “Standard Specification and Test Methods for Highway Traffic Monitoring Devices;”
- Working on the development of “Standard Practice for Using and Installing Piezoelectric Sensors;”

ASTM E17.52 Subcommittee Activities

- Working on the development of “Standard Practice for the Design and Installation of inductive loop sensors used for traffic monitoring data collection;”
- Working on the development of “Standard Practice for Estimating Vehicle Counts from Single Axle Counts;”

VDC Project - Detector Handbook

Summary Document of Vehicle Detection and Surveillance Technologies Used in Intelligent Transportation Systems

- Funded by the Federal Highway Administration's Intelligent Transportation Systems Joint Program Office;
- Developed to assist in the selection of vehicle detection and surveillance technologies that support traffic management and traveler information systems.

VDC Project - Detector Handbook

- Includes text, tables, and figures describing most commonly used vehicle detection and surveillance technologies in terms of principles of operation, application and uses, advantages and disadvantages, and some cost information;
- Organized by type of sensor technology;
- Includes specific vendor-supplied information on vehicle detection and surveillance technologies;
- Currently being updated.

VDC Project - Fiber Optic WIM Study

- Study funded by FHWA to determine the State-of-the-Art for fiber optic sensors in WIM system applications;
- Benefits of using fiber optic sensors include:
 - 1) immune to electromagnetic interferences,
 - 2) high bandwidth capability,
 - 3) lightweight,
 - 4) ability to withstand hostile environments, and
 - 5) may be lower in cost than conventional WIM once technology matures.

VDC Project - Fiber Optic WIM Study

- Initially we found only a handful of documented laboratory scale studies that were all research-oriented for this type of technology;
- Recently a field study by Blue Road Research (BRR) using Fiber Bragg Grating sensors for WIM system applications was initiated in Oregon;
- BRR Study findings, thus far have indicated positive results on the potential for use of Fiber Bragg Grating Sensors in WIM systems ;

VDC Project - Fiber Optic WIM Study

- Dr. Grossman and associates are working with IRD on the development of microbend fiber optic sensor technology for WIM system application;
- These microbend fiber optic sensors are commercially available for counting and classification applications ;

VDC Vision

- Conduct training in the use of ASTM testing standards for monitoring devices in cooperation with Local Technical Assistance Programs (LTAP);
- Test standards developed by ASTM E17.52 Subcommittee for practicality and also to obtain data for precision and bias statements;
- VDC Web Page revamp to include list of technical assistance requests and responses, “Vendors Corner,” etc.