West Virginia Division of Motor Vehicles
Electronic Skills Testing
Commercial Driver's Licensing Testing

2010 NASCIO Recognition Award Application
Digital Government: Government to Business

June 2, 2010

West Virginia dmv
Keeping West Virginia on the move.

Jennifer L. Floyd
Graphic Designer

Call • 304-926-3901
Fax • 304-558-1987
www.dmv.wv.gov

I. EXECUTIVE SUMMARY

The Commercial Driver License ("CDL") testing process has continually battled fraudulent abuse across the United States from 2000 to 2003. States have struggled with labor-intensive manual, paper-based testing systems in the past. In the Federal Motor Carrier Safety Administration's (FMCSA) routine review of West Virginia's CDL program, it indicated deficient areas necessitating enhancement to further deter fraud. In response to the review and due to budget restrictions, state program leaders decided to automate the CDL process into a fully electronic system. Throughout 2004 and 2005, the state's Division of Motor Vehicles ("DMV") explored various forms of automation, resulting in the launch of the **WVeCDL *("eCDL")*** program prototype in June 2006.

eCDL, through its prototype launch and implementation during 2007 and 2008, enabled the state to eliminate seven full-time equivalents ("FTEs") and five state fleet vehicles for an annual savings of approximately $250,000. These savings, along with funding from the FMCSA, provides for the research and analysis of new technologies in the mobile computing field, which allows the state to continually refine the CDL testing process.

The ***eCDL*** program utilizes GPS locator points to track the movement of the commercial vehicle during the skills or road portion of the test. This allows for off-site monitoring by tracking the movement through a pre-determined route designed to ensure all required skills are properly tested. Furthermore, the system notifies DMV personnel via email immediately of any deviations from the normal test course.

In addition to the cost savings provided by the ***eCDL system***, its effectiveness and significance is also illustrated by the elimination of fraud from the CDL testing/licensing process, which helps improve safety on United States roadways. Large commercial vehicles, oftentimes weighing 80,000 pounds, demand professional and safe drivers to ensure the safety of all drivers and passengers using the country's roadways.

West Virginia is the first state to implement such an initiative. Subsequently, several states and Canadian provinces have expressed interest in the ***eCDL*** program in order to help them meet uniform standards required by the United States and Canadian federal governments. Since this system complies with all federal standards, it can easily be transferred to any other state or jurisdiction.

II. BUSINESS PROBLEM & SOLUTION

A. Background

The Federal Motor Carrier Safety Administration (FMCSA) (see Section 49 of the Code of Federal Regulations) is required to monitor and conduct compliance reviews of all states' Commercial Driver License Program. In recent compliance reviews, the FMCSA noted monitoring deficiencies in West Virginia's third party testing program. The third party testing program trains and certifies non-state personnel to administer and report test results to regional Division of Motor Vehicle ("DMV") offices for issuance of a commercial driver's license ("CDL"). State-employed regional CDL Examiners ("ASAs") rely on test results provided by the third party examiners. Prior to the implementation of this system, examination forms and test results were paper-based, limiting confidence in the third party program's integrity. Based on a FMCSA compliance review, the DMV recommended the implementation of a stronger third party testing oversight program to satisfy federal requirements.

The lack of integration between the DMV written exam and skills tests was impeding the overall analysis into the efficacy of commercial driver's education program. The federal review also cited a lack of document control and other security measures necessary in maintaining the manual skills testing process. The inherent problems in handling paper created an environment susceptible to fraudulent activity. These shortfalls provided the impetus for the DMV to develop a digital solution to eliminate opportunities for fraud and increase the effectiveness of commercial driver's education.

Mark Holmes and Wilbur L. Thaxton II submitted a grant proposal to the FMCSA to fund a pilot project to establish the use of advanced technology to automate the CDL skills testing process in West Virginia. The West Virginia DMV received initial funding in the amount of $77,500 from the FMCSA and matched those funds with a 20% in-kind State match of $19,375.00 to be used for the deployment of laptop computers utilizing GPS tracking technology. Initial project success resulted in subsequent grants of an additional $485,000 and $505,000 for continued development in 2007 and 2008 respectively.

B. Methodology and Solution

The DMV designed the eCDL system but depended on the Rahall Transportation Institute (RTI) for technical expertise. In cooperation with the Rahall Transportation Institute, DMV employees collaborated with RTI system developers daily to continually enhance and upgrade the ***eCDL*** testing system. Throughout development and implementation, RTI programmers relied upon DMV employees for direction and insight into the total package envisioned by the West Virginia ***eCDL*** development team. Today, the development team continues to enhance the reliability and functionality of the system.

Now, the DMV equips third-party testers with laptops enhanced with digital communication capabilities for the full automation of CDL skills testing, which allows the DMV to satisfy the recommendations of past compliance reviews enabling the DMV to track and collect GPS data from remote locations as part of a fully integrated CDL skills test.

Initially the eCDL system was developed to automate the skills portion of the CDL exam. The initial phase of administering the skills test on a laptop computer with GPS capabilities virtually eliminated the use of paper forms and manual procedures, heightening testing integrity and streamlining the licensing process. Furthermore, federal reporting requirements are fulfilled automatically from the system's database. However, the DMV is now integrating the written portion of the test into a fully automated CDL testing program as well. A Request for Proposal will soon be released to provide for an advanced automated knowledge testing system that will be fully integrate with the automated skills testing (***eCDL***) system. The first step in the integration process includes programming the written version of the Commercial Drivers License Test on to remote mobile equipment to record written test results electronically. The results will then be transmitted via a wireless internet connection to the host application server, located at the Rahall Transportation Institute, where they are then uploaded to the knowledge testing system. This provides the ability for skills test monitoring, performance analysis, and reporting to state and federal entities.

Future plans include the integration of the test scores and each driver's record in the DMV database, which ensures compliance with federal regulations and enhances the integrity of the CDL testing processes. Currently, the system provides for laptop to server data transmission enabling a review of the skills test results and a graphic road test audit log from a secure web server.

Stakeholder Support Rahall Transportation Institute

The Director of the Rahall Transportation Institute ("RTI"), Bob Plymale, guides the Institute's partnership with the DMV. Through this partnership with Mr. Plymale and RTI, West Virginia is recognized as a leader in the application of eCDL technologies.

RTI provides document searches, hardware evaluations, and GPS software development for the project. By providing a secure data warehouse, RTI is allowing the DMV to utilize the most economical, efficient, and secure products necessary for project implementation. This approach reduces the need for additional development and maintenance costs incurred by state government resources. Relying on RTI expertise inevitably reduces the overall program cost to the state.

The DMV and RTI have now entered into a formal Memorandum of Understanding Agreement to specify additional contractual items concerning maintenance, ownership, and further developments related to this partnership. Further opportunities exist for this alliance to provide additional innovative and more efficient methods of providing West Virginians with world class transportation services.

Federal Motor Carrier Safety Administration

This initiative is fully endorsed by the FMCSA. In a letter from Field Administrator Robert Miller of the FMCSA Eastern Service Center, Miller expressed his satisfaction of the "functionality, usability, and security of the system." He further expressed FMCSA's belief that the West Virginia ***eCDL*** system has significant possibilities as both a deterrent to, and as an identifier of fraudulent activities. According to Mr. Miller:

> The system is an excellent example of innovation in the CDL program and the use of technology to assist in the monitoring of the program. We encourage West Virginia to expand the use of the system throughout the state and hope that you would share the information about this new system with your counterparts across the country.

American Association of Motor Vehicle Administrators

eCDL was showcased at the American Association of Motor Vehicle Administrators (AAMVA) Region II Conference in Jacksonville, Florida, in June 2007 and again in San Diego, California at the CDL Coordinator's meeting in January 2009, where it received much interest and positive feedback. Presentation materials can be viewed at http://www.aamva.org/Events/Materials/2009CDLCoordinatorsMtg.htm.

In 2010, the State of West Virginia will lead a collaborative effort with FMCSA and AAMVA to fully integrate the ***eCDL*** software with the Commercial Skills Testing Information Management System (***CSTIMS***) software being developed under contract by AAMVA. The integrated product will provide the complete solution to CDL skills testing. The State of West Virginia and AAMVA has seen interest in their individual efforts; however, interest in the integrated solution has soared.

III. Significance

West Virginia is the first state to develop and sustain a comprehensive effort to automate the CDL skills testing process. Other states have explored at varying levels of research and development, but none have undertaken the steps necessary to deploy the most up-to-date technology to an archaic process.

After the initial successes of ***eCDL***, several states and Canadian provinces have expressed interest in the ***eCDL*** program. Motor vehicle administrators responsible for commercial driver licensing and testing must submit to uniformed standards that the ***eCDL*** program addresses. Since the system is standards based, it is easily transferrable to other jurisdictions.

IV. Benefit

Benefits of ***eCDL*** include the elimination of seven full-time equivalents through attrition and five state fleet vehicles, resulting in an annual savings of approximately $250,000. Similar cost savings are expected in partnering jurisdictions.

These costs savings, in addition to funding from the FMCSA, enabled the exploration of new technologies in the mobile computing field, which has led to the refinement of user applications during the testing process as recommended by the skills testers.

In addition the cost savings provided by ***eCDL***, its effectiveness and significance is also illustrated by the elimination of fraud from the CDL testing/licensing process, which improves the safety on United States roadways. Large commercial vehicles, oftentimes weighing 80,000 pounds, demand professional and safe drivers to ensure the safety of all drivers and passengers using the country's roadways.