

RESEARCH NOTES

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WOODBURN PORT-OF-ENTRY AUTOMATION PROJECT: 1986-1993

In 1986, the Oregon State Highway Division (OSHD), in conjunction with the Public Utility Commission (PUC), and with the cooperation of the Federal Highway Administration (FHWA), undertook an experimental project at the Woodburn southbound Port-of-Entry (POE). The plan was to automate this POE to minimize the weighmaster and PUC tasks; improve weight, size, and safety enforcement; provide more data for planning and design purposes and save human resources and time for the State and the trucking industry. The weigh-in-motion (WIM) scale, automatic vehicle identification (AVI) system, and static scales, along with the PUC motor carrier database would be tied into a supervisory computer system which would control truck traffic and data. This report presents findings from five years of operations and describes the construction and automation of the Woodburn POE, including the physical plant, the hardware and software, system operation, data obtained, benefits, limitations, conclusions and recommendations.

CONCLUSIONS

The present WIM/AVI/SC automation system at the Woodburn POE has been amazingly successful, despite the fact that very few trucks have transponders. There have been both monetary and non-quantifiable benefits to ODOT, PUC, and the trucking industry. The result of this success has led to the automation of other POE's, excluding the WIM sorter system. WIM sorter system installation is planned for the future.

Based on ODOT experiences with Woodburn, mainline sorting has been installed at the new Umatilla POE in I-82 southbound lanes and at the Wilbur and Booth Ranch weigh stations located near Roseburg in the I-5 southbound and northbound lanes, respectively. These systems presently use variable message signs. The system at the Ashland POE on the I-5 northbound lanes will use mainline sorting with two-way communication on AVI systems to screen vehicles five miles from the POE.

The success of the Woodburn POE project has resulted in the weighmaster(s) developing an integrated tactical enforcement network plan utilizing the electronic hardware and software principles. In addition, a strategic/business plan for a statewide IVHS-CVO system has been completed.

SUMMARIES OF CURRENT TRANSPORTATION RESEARCH

The complete success of the automation system at the Woodburn POE and other POE's will depend upon all trucks carrying some kind of identification which can be automatically read. The trucks with transponders in the demonstration has shown that this system can work successfully. The WIM sorting system by itself has shown that it can successfully reduce truck volumes and improve POE truck movement as well as providing significant economic enhancements.

The system is incapable of measuring truck width or overall vehicle length. At present, no equipment is available which will measure these two parameters, which is a serious limitation of the automated system. Weighmaster(s) need the ability to enforce these two important parameters. There is a need to get manufacturers interested in developing such equipment.

Recently, the final report for this research project was published. If you want additional information regarding this project or a copy of the report, please contact:

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