

Freight Technologies

Summary of the Issue

Freight Technologies offer some potentially significant benefits to the Commonwealth. The most significant include faster shipment processing, reduced delay, and reduced emissions. A potential secondary benefit is a reduced demand for truck drivers.

Weigh in Motion and Pre-Certification Technology

The weigh in motion (WIM) and pre-certification programs, currently maintained by the Department of Motor Vehicles (DMV) were initially started as an effort to handle more trucks at the weigh stations with fewer staff. WIM equipment works by screening out trucks that are well within the acceptable weight limit and allowing them to pass. Only the trucks above allowable weight limits are weighed at the static scales. Pre-certification allows carriers to communicate required information without stopping to show hard copies. Despite its benefits, pre-certification with PrePass or NorPass, the Commonwealth's accepted vendors, is not widely used. The program is not universally known and many shippers are concerned about the confidentiality of their information.

In order to address the concern that truckers can waste a lot of time stopping at all the weigh stations in the state, a weigh-in-advance program has been proposed. This program would have the truck weighed at the point of origin, for example at the port, and the weight would be electronically linked with other stations allowing the truck to travel without stopping again. Controls would need to be put in place to ensure the certified load is not breached. There is some concern among shippers that the technology could potentially be used to enforce weight distribution taxes or to provide information to competitors.

Information and Communication Technology

In general, information and communication technologies are designed to save time and money, reducing delays either in transit, handling, or storage retrieval. Traffic Information Systems (TIS) like 511 and Variable Message Signs (VMS) are some of VDOT's most significant contributions in this area. Yet, there is room for improvement. Providing accurate and timely information about traffic congestion, incidents, and weather-related delays to truckers and dispatchers will help improve travel time reliability and assist drivers in determining the best route to leave the region. Variable message signs could be posted at the port gates to provide this information.

Virginia International Terminals (VIT) employs Differential Global Positioning System (DGPS) technology to identify containers and to locate them on the terminal grounds. DGPS has significantly improved the speed of handling empty containers. It was first tested at PMT then added to NIT; it is expected to be added at NNMT.

On-Street Dispatch Systems (OSD) can reduce the volume of empty back-hauls (i.e., trips required to return empty containers to the port) by matching empty containers to trucks headed to the port to pick up a container. Such an operation has the potential to eliminate 400,000 truck trips per year. There is some concern within the trucking industry over a potential loss of revenue for companies who depend on the empty back-haul business. There are also some issues related to data confidentiality. Virginia Inland Terminals is currently piloting an on-line system for matching shippers with empty containers to shippers needing them.

Radio Frequency Identification (RFID) tags can store and transmit data. They can be used in several ways to increase efficiency and speed, such as having containers ready for pick up when a truck arrives at the port gate. To be successful and widely used within the industry, the radio frequency for RFIDs needs to be standardized at the federal level. Newer RFID transponders can accommodate multiple vendors, allowing one device to transmit weight information to weigh stations, communicate truck arrival time information to a port, and pay an electronic toll. Other types of electronic seals can store information about cargo and its owner and function like a lock, thus reducing tampering and pilferage.

Pollution Reduction Devices

Trucking companies are employing numerous pollution reduction devices to realize environmental benefits and reduced costs. Auxiliary power units reduce engine idle time, thereby reducing emissions and fuel usage. Some trucking companies are switching from traditional double tires to wide single tires that net a decrease in footprint which will reduce fuel usage and emissions. Control devices can be added to the truck's exhaust system to reduce the emission of particulate matter and other pollutants.

Virginia Freight Advisory Committee (VFAC) Recommendations

1. *Install a WIM station at the Sandston location (both east and west directions) by end of fiscal year 2008. This effort will be led by the Virginia Department of Motor Vehicles (DMV).*
2. *Request the Secretary of Transportation to identify the funding needed to implement the Sandston WIM station in fiscal year 2008. This effort will be led by DMV.*
3. *Continually evaluate weigh station operations to seek opportunities to add WIM sites and share the results with key decision makers. This effort will be led by DMV.*

4. *Establish a research task force to investigate what circumstances and controls are needed for a 'weigh-in-advance' program to succeed in the Commonwealth of Virginia. The involvement and participation of other states will be an integral part of making this recommendation viable. This effort will be led by VPA and DMV.*
5. *Conduct an evaluation of the On-Street Dispatch System to determine public-benefit, confidentiality issues, and information sharing protocol. This effort will be led by VPA.*
6. *Place a greater focus on communicating the availability and advantages of electronic passes to shippers/truckers because many truckers are not aware of the technology. This effort will be led by DMV.*
7. *Promote interoperability among transponder systems through organizations such as the Interstate 95 Corridor Coalition and the National Freight Roundtable. This parallels the concept of E-Z Pass that can be used on toll roads in other states. This effort will be led by DMV and VDOT.*
8. *Promote policies that prevent the use of proprietary information/data for secondary purposes beyond weight verification. This effort will be led by DMV.*
9. *Establish a task force to identify the ways to provide timely travel information to customers; such as, providing variable message signs at port gates that indicate traffic conditions on key routes. This effort will be led by VPA and VDOT.*
10. *Continue expansion of DGPS at the Ports of Virginia as planned. This effort will be led by VPA.*
11. *Encourage individual stakeholders to implement RFID technology as appropriate to improve their operations. This effort will be led by VPA.*
12. *Create a forum for industry and government partners to continue discussions regarding standardization of radio frequencies. This effort will be led by VPA.*
13. *Share information on best practices to reduce emissions with the trucking industry and seek any available federal funding for idling-reduction programs. This effort will be led by DMV.*

VTrans Technical Committee Recommendation

Support the VFAC recommendations.