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7. Author(s) Jerry V. Capozzi		8. Performing Organization Report No. ORADS-1-970901-OFS	
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16. Abstract <p>The work accomplished under this initiative is in direct relation to the development effort proposed by Spectra Research, Inc. (S*R) for an "Off-Road Axle Detection Sensor (ORADS)". The feasibility study was performed to investigate potential occlusions that may arise from the use of a laser-radar (LADAR) based sensor configuration. This feasibility study was suggested to determine any potential risk in the development.</p> <p>S*R was awarded a contract to perform video analysis work over a six month period. S*R performed video tests to visually inspect situations under which occlusion may occur during peak, unidirectional traffic flow on a highly populated, multiple lane interstate. The test site was selected by ODOT representatives, I-275 northbound at exit 46 during peak traffic times (4-6 p.m.). Data was collected for approximately one hour using two video cameras. Camera 1 was used to record on-coming traffic for lane and volume data. Camera 2 was positioned to act as the LADAR sensor to provide axle count and occlusion data.</p> <p>The results of this effort show that across a multiple lane roadway exhibiting high volume traffic flow, the aggregate probability of axle occlusion is 4.21%. These results were anticipated and conform to the error requirements (<10%) identified by ODOT officials. Recommendation is made for further funding of the ORADS Phase II development.</p>			
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