I-79 Roll Over Detection System Project
PennDOT Engineering District 11

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Roll Over Crashes

In Pennsylvania

- 40,420 Overturned Vehicle Crashes (last 5-years, 2012-2016 data)
- Resulting in 1300 FATALITIES
Roll Over Crashes

21 ROLLOVER CRASHES DURING THE LAST FIVE YEARS (2012-2016)
I-79 S-Bend Area Crash Analysis Summary

**Southbound Crash Analysis:**
- 28% of the crashes in this area involve trucks.
- 36% of the crashes are related to driving too fast for conditions.
- 4% of the crashes were due to driver over/under compensating for the curve in the roadway.

**Northbound Crash Analysis:**
- 18% of the crashes in this area involve trucks.
- 32% of the crashes are related to driving too fast for conditions.
- 9% of the crashes were due to driver over/under compensating for the curve in the roadway.

**There were two fatal crashes, and one major injury crash.**
Roll Over Crashes

Often result vehicle and roadway damage....
Roll Over Crashes

Often result in fatalities or injuries….
Roll Over Crashes

Often result in traffic delays....
Roll Over Detection System Project

- Automatic warning system on I-79 to help drivers take preventative action prior to entering the curve

- Based on its size and speed, system to alert drivers that vehicle may roll over if speed is not reduced

- When system signal is activated, a driver will reduce speed and proceed with caution through curves

- Reduces the likelihood of rollover crash

- System sends alert signal to TMC
The system consists of dedicated thermal cameras and video analytics software placed along the road to identify a given truck and its speed and size.
Roll Over Detection System Project

Full color DMS (dynamic message signs) will be installed in advance of and through the S-bends
When software detects truck speed that may cause a rollover, software processes information and transmits signal to activate dynamic message signs ‘TRUCKS SLOW DOWN’

(Truck’s speed is greater than the threshold speed)
An alarm will notify the Traffic Management Center staff of a possible truck rollover. Additionally, the video analytics can activate an alarm for:
- stopped vehicles
- wrong way vehicles
- congestion
- pedestrians

Providing faster response to incidents that happen in this area.
Analytic detection includes four categories
- Large Truck (Tractor-trailer)
- Small Truck (Box truck, single-axle)
- Passenger Vehicle
- Motorcycle
Roll Over Detection System Project

Benefits

- Reduce rollover crashes
- Low maintenance costs
- Reduce run off the road crashes
- Faster incident response time
Roll Over Detection System Project

Project Timeline

Allocated HSIP Funds
• February 2016

Design/Build Contract Awarded
• August 2017

Construction
• Present Time

Construction Complete
• July 2018

Crash Reduction
• 2018 & Beyond