



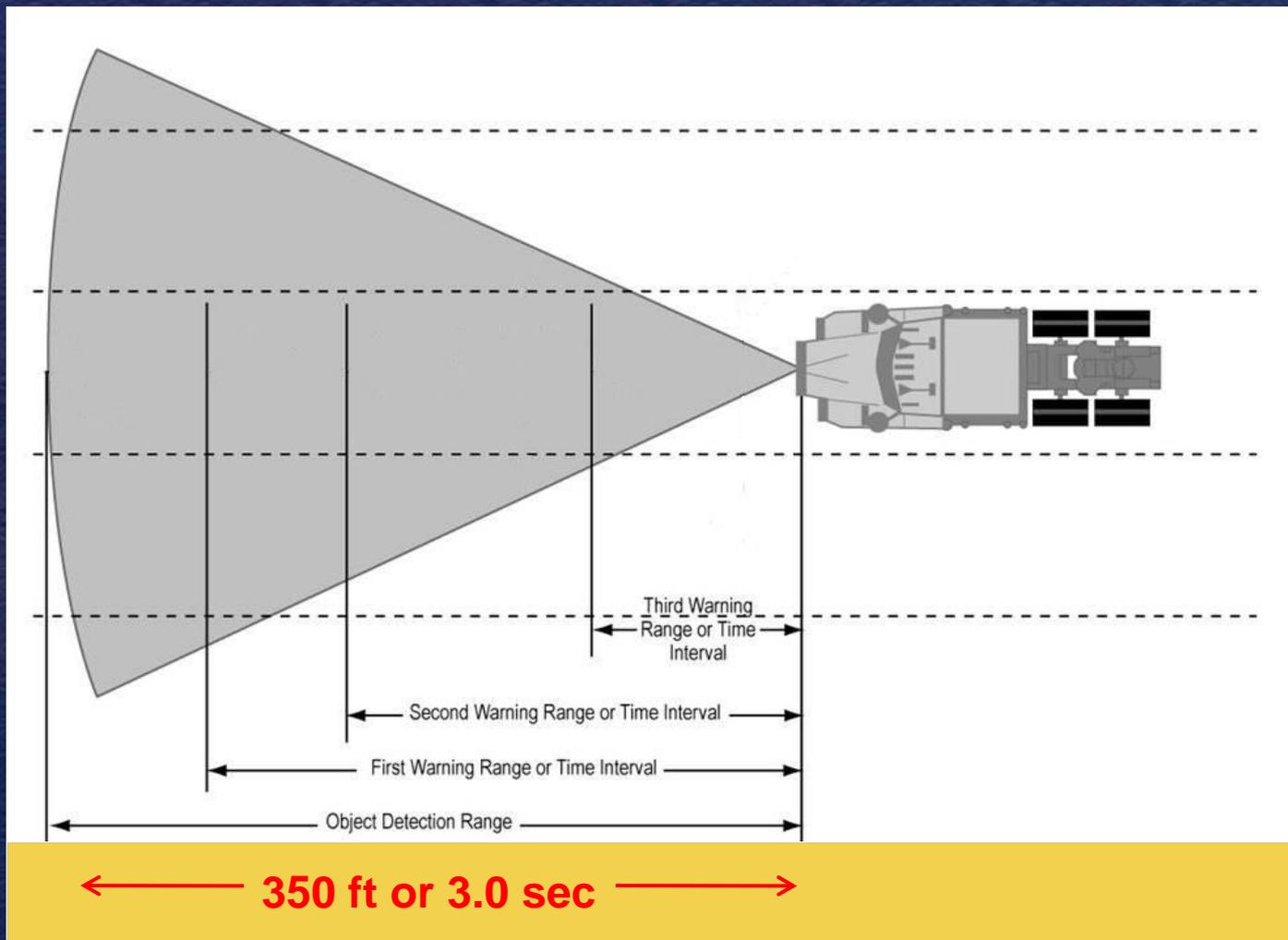
NTSB National Transportation Safety Board

Office of Highway Safety

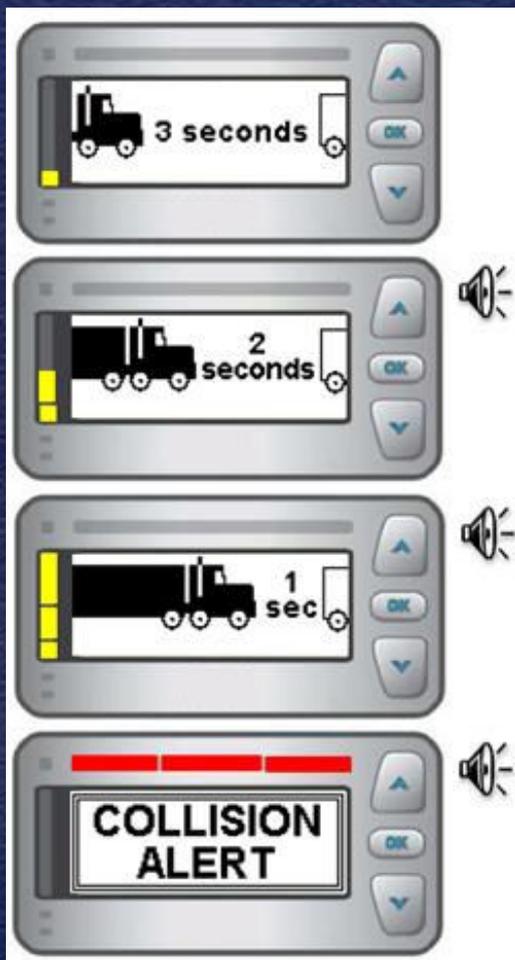
Forward Collision Warning Systems

Jennifer Morrison

Forward Collision Warning



Forward Collision Warning



- Forward Collision Warning Systems (FCWS) available for ALL commercial vehicles
 - Bendix
 - Meritor WABCO
 - Mobileye
- Cost range \$1,000 - \$2,000

Forward Collision Warning

- No federal regulations for collision warning systems
- FMCSA Voluntary Operational Requirements (July 2005)
- Government / Industry Research
 - 21% rear-end crash reduction
 - Prevention of 4,700 crashes; 2,500 injuries; and 96 fatalities per year

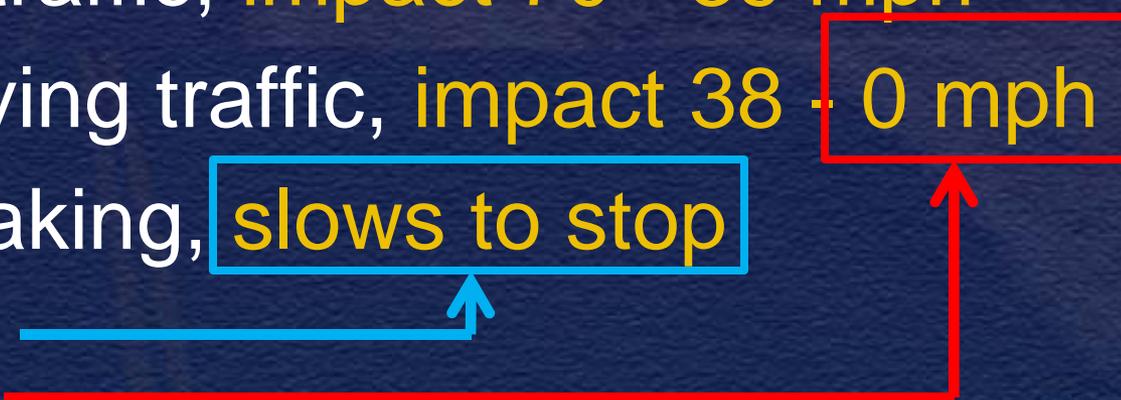
Impacting Vehicle

- 2008 Volvo Truck-Tractor

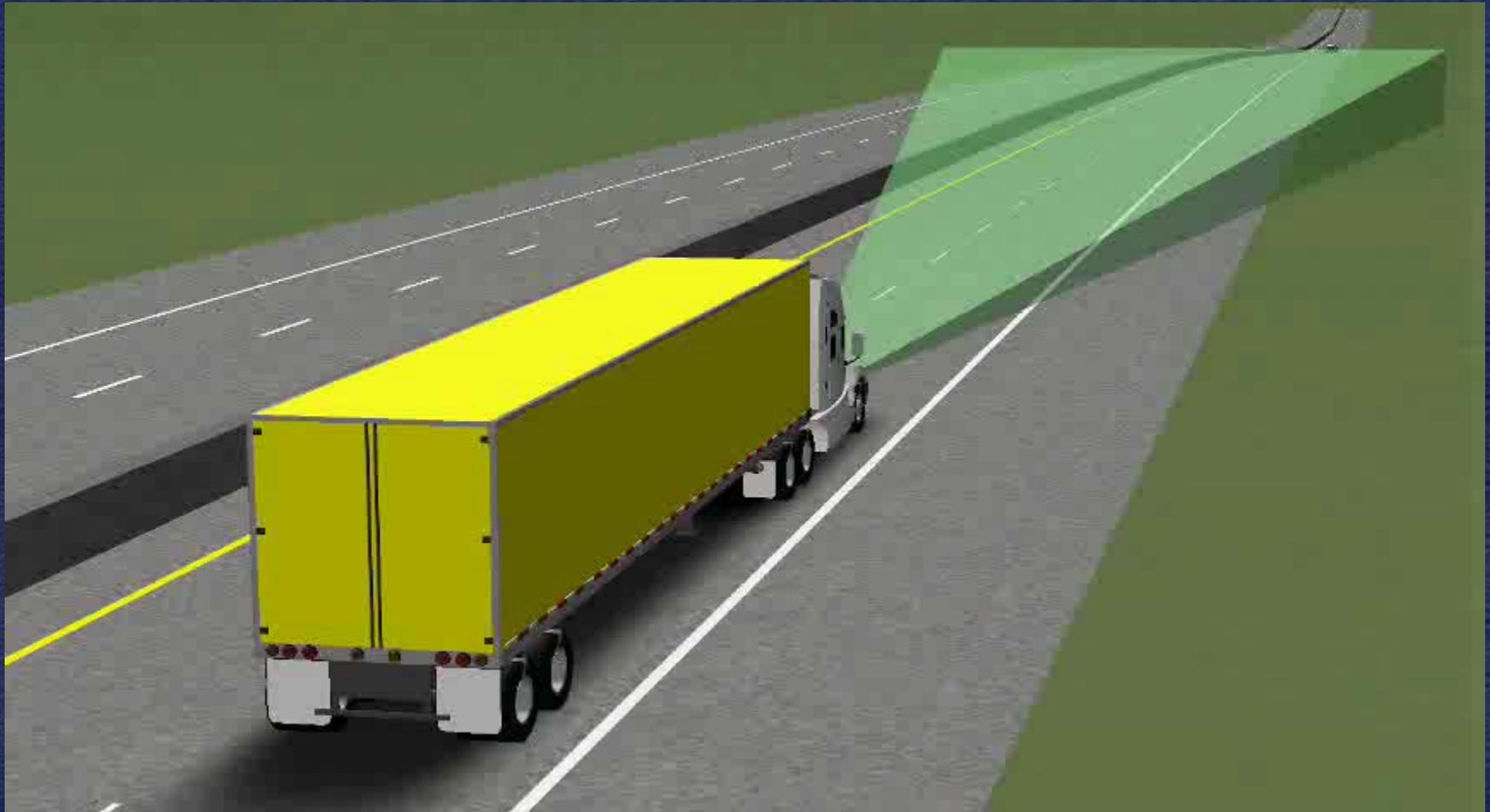


- Weight 40,400 lbs
- Speed 69 mph
- Antilock brakes & electronic stability control (ESC)
- Brakes adequate
- Sufficient roadway friction

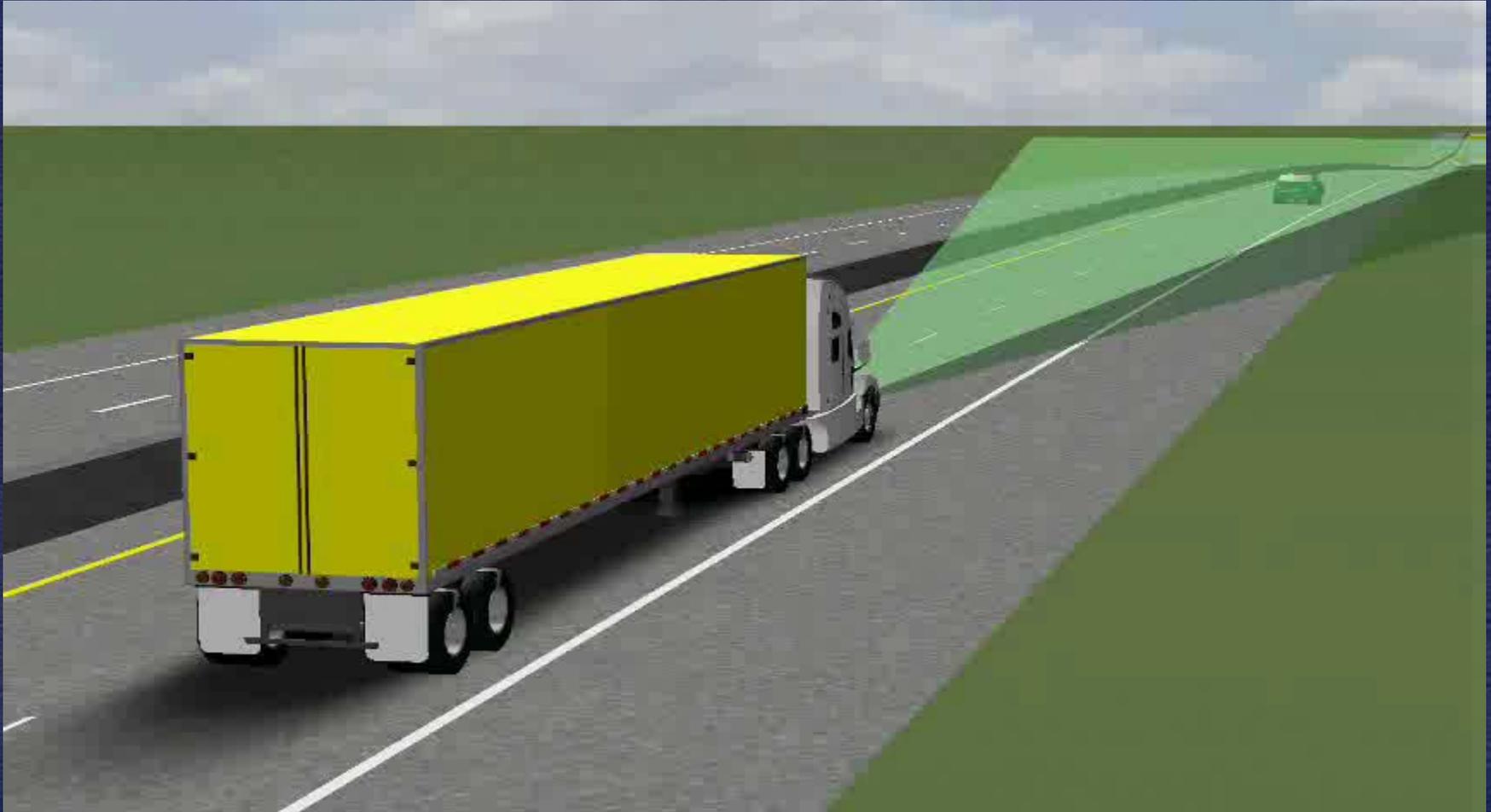
FCWS in Mitigating This Accident

- FCWS alert at 350 feet
 - Vehicle traveling at 103 feet / sec
 - 3.4 seconds to react and avoid
 - Scenarios with FCWS
 - #1 stopped traffic, impact 70 - 39 mph
 - #2 slow-moving traffic, impact 38 - 0 mph
 - #3 active braking, slows to stop
 - Animations
- 

Animation - Scenario 2



Animation - Scenario 3



NTSB Safety Recommendations

- H-01-6 and -7, from NTSB Special Investigation on Rear-end Collisions
 - To NHTSA, complete rulemaking and standards, then require collision warning systems and adaptive cruise control
- H-08-15, from Osseo, Wisconsin, report
 - To NHTSA, determine if collision warning systems with ESC and active braking will reduce accidents; if so, require them



NTSB