

UTC Project Information	
Project Title	MPC-371 – Decision Support for Strategic Truck Safety and Weight Enforcement Planning
University	North Dakota State University
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Project Cost	\$ 64,000
Start and End Dates	January 1, 2012 – December 31, 2013
Project Duration	2 Years
Brief Description of Research Project	<p>Trucks are critical in rural-economy market connectivity in where natural resource based goods are delivered to processors and consumer markets. The role of trucks in oil development is evident in the rapidly expanding fleet that operates within and serves western North Dakota. A fixed capacity public road system, has greatly increased large truck-passenger vehicle interaction in the region. The associated increasing crash risk is evident in recent trends (Figures). Seventy percent of fatal and serious injury crashes occur on rural noninterstate roads.</p> <p>Two critical aspects in minimizing potential crash risk associated with the interaction are education and enforcement.</p>

	<p>Education can be offered through public information releases and media campaigns. These campaigns can be used to create greater awareness of the risks and needs for defensive driving. Coupling this education with enforcement is essential in providing sustainable traffic safety programs (Shults et. al 2004, Houston and Richardson 2006, Hedlund et. al 2008, and Nichols et. al 2008). Education efforts can be broad in nature such as encouraging drivers to respect right-of way rules, stay out of the “no-zone” and promoting seat belt use by all occupants. Enforcement, however, is more complex given that the influence is determined by law enforcements’ ability to appear ubiquitous given a fixed level of patrol resources. While data is always used in law enforcement planning, the ability to fully utilize multiple datasets and geospatial information may strengthen processes for shorter-term programs and longer-term strategies used to promote safety and responsibility in a dynamic truck market.</p> <p>Research Objectives: Provide quantitative and geospatial decision support material for the NDHP motor carrier unit to use in allocating limited resources for traffic safety, especially in a rapidly growing oil development region.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>Results identify three to seven statistically significant risk factors from among 13 selected for the models. These included: seat belt use, alcohol/drug involvement, head-on collision impact, rollover event, failure to yield/stop, weather, intersection, curve, and multiple-truck involvement. Seat belt use was a significant predictor for severe injury likelihood in all models. Failure to stop or yield, rollover event, multiple truck involvement, curves and intersections were associated with increased likelihood for severe-injury to truck drivers. Severe injury to other drivers in truck-involved crashes was associated with alcohol or drug involvement, head-on and sideswipe collisions, rollover events, weather, and distracted driving.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>A sustained increase in statewide traffic and truck traffic is likely. Consequently, identifying factors associated with greater likelihood for severe injuries in truck-involved crashes is important for prioritizing and mobilizing resources for improved traffic safety. Truck-focused traffic safety interventions such as driver education programs and enforcement efforts for truck drivers and drivers who interact with trucks on the state’s roads is critical to reducing severe driver injuries in the future. The results may also allow drivers and businesses to identify areas for safety performance improvement.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	<p>http://www.ugpti.org/resources/reports/details.php?id=845</p>