

UTC Project Information	
Project Title	MPC-423 – Impact of Energy Sector Growth on Perceived Transportation Safety in the Seventeen County Oil Region of Western North Dakota: A Longitudinal Analysis
University	University of Wyoming
Principal Investigator	Rhonda Young
PI Contact Information	Department of Civil and Architectural Engineering University of Wyoming Phone: (307) 766-2184 Email: rkyoung@uwyo.edu
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Project Duration	1 Year
Brief Description of Research Project	<p>Western North Dakota is a rapidly evolving region in the United States. This evolution is especially prominent in a 17-county region where oil extraction methods have improved production economics. Road usage in this area has changed immensely due to the growing energy sector. Roads once used only for local access and agricultural purposes are now being used at high volumes to serve expanding oil and gas production. This has led to an increase in traffic volume, an increase in the number of overweight and oversized vehicles on the road, and a number of roads being in poor condition with others deteriorating rapidly. Poor road conditions, a growing population, greater vehicle miles traveled, and higher average annual daily traffic all are contributing factors that make the roads dangerous for users. Thus, there is a need to study not only how residents perceive road conditions, safety on roadways, and passenger vehicle-large truck interaction, but also to measure the success of safety campaigns, driver behavior on said roads, and the rates with which drivers avoid roadways impacted by oil development.</p> <p>Present research with regard to the impacts oil development in western North Dakota has had on transportation is limited. Research concerning how the growing energy sector affects driver behaviors and attitudes is almost non-existent. The Upper Great Plains Transportation Institute (UGPTI) (2010) studied the conditions of paved and unpaved roads affected by oil development in western North Dakota, but the study did not address driver views or behaviors. A follow-up study is forthcoming. In the same report, UGPTI (2010) analyzed truck traffic in 15 western North Dakota oil counties, but did not have an element containing responses from drivers in the region. Another UGPTI report</p>

	<p>(2012) addressed crash events in oil counties from 2007 to 2011, but obtained information from crash reports rather than from drivers directly.</p> <p>At a broader scale, studies in other regions have addressed the changes oil development brings to communities. Prowse et al (2009) assert that oil development in Northern Canada has created noticeable changes to infrastructure and transportation, although the focus of the study addresses future responses due to climate change rather than a growing energy sector. Again, no attention is given directly to drivers. Laska et al (2005) reveal that increases in oil development in Coastal Louisiana threaten various transportation modes such as road networks, ports, and airports, though none of the analysis is based on direct responses from local transportation users. Affolter (1976) indicates that oil extraction in the North Sea has created more noise, safety hazards, increased traffic volumes, an altered landscape, construction camps, and changes to infrastructure in localized parts of the United Kingdom. These changes are similar to that which is being experienced in western North Dakota, though the focus of his research is on planning rather than driver indicators. Clearly, there is a knowledge gap in terms of how rapid development surrounding growing energy sectors impacts driver views and behaviors as reported by drivers.</p> <p>Kubas and Vachal (2012) addressed this gap in a seminal study that analyzes how oil development changes driving conditions as perceived by drivers. The study utilized a survey questionnaire of a random sample of western North Dakotans to better understand the impacts said development has had on driver perceptions and behaviors. Because the region is dynamic, growing, and constantly changing, there is a need to continually monitor driver attitudes and behaviors. As such, the initial study by Kubas and Vachal should be viewed as a baseline to compare changes in driver perceptions over time. This proposed follow-up study will promote a better understanding of the long-term impacts rapid growth has on transportation safety perceptions.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	<p>https://www.ugpti.org/resources/reports/details.php?id=775 https://www.ugpti.org/resources/reports/details.php?id=823</p>