

Project #10206 - Impact of Distracted Driving on Congestion

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Distracted driving has become an epidemic in the United States, particularly among young drivers. Despite the plethora of studies that have demonstrated a link between distracted driving and diminished safety, few studies have examined the association of distracted driving and another critically important transportation related issue: congestion. This project seeks to fill the research gap by examining the driving behavior of 75 individuals between 16 and 25 years of age operating a virtual driving simulator with driving conditions varying across three levels of service as outlined in the Highway Capacity Manual (free flow, stable flow, and unstable flow) and three levels of distraction (cell phone conversation, text messaging, and undistracted). We predict that engagement in any distracting condition (cell phone conversation or text messaging) will evoke driving behavior that may lead to reduced traffic flow (e.g., fewer lane changes, slower driving speed, increased number of MVCs and close calls), and expect this effect to be greatest during text messaging. The study will also examine several individual differences as factors to predict risky driving behavior under varying traffic and distraction conditions. We predict that those who are high sensation seekers will display riskier behavior (e.g., smaller gap acceptances when turning and changing lanes, smaller intervals to lead vehicles) when in the highest congestion condition (i.e., unstable flow) than those who are low sensation seekers. Results may enhance modeling simulation work completed by transportation engineers by providing a clearer account of distracted driver behavior.

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