

# Mn/DOT

## INTERSTATE SAFETY REST AREA SPACING STUDY

*Analysis of Vehicle Crashes Related to Safety Rest Area Spacing*  
*Prepared by SRF Consulting Group, Inc., July 2007*

### Study Purpose and Background

- Replicate 1998 Michigan Study by Taylor and Sung using Minnesota data and conditions.
- Study the relationship between interstate rest area spacing and interstate crashes.
- Determine if a relationship exists between interstate crashes and the nighttime parking demand for Commercial Motor Vehicle (CMV) operators at Mn/DOT interstate rest areas.
- Investigate the influence of rest area spacing on single-vehicle truck crashes on Minnesota's rural interstate freeways using single-vehicle truck crashes as an indicator of drowsy driving-related crashes.
- Determine optimal spacing for Minnesota rest areas to reduce drowsy driving-related crashes.
- Conduct cost-savings analysis to determine potential savings resulting from projected lowered crash densities through provision of additional truck parking at interstate rest areas.

### Key Findings

- Single-vehicle truck crash densities increase during all times of the day at distances greater than 30 miles beyond a rest area. ( $R^2 = 0.70$ )
- Nighttime single-vehicle crash densities increase significantly beyond rest areas with high nighttime parking demand. ( $R^2 = 0.94$ )

### Conclusions

- Spacing Minnesota interstate rest areas at 30 miles or less will reduce drowsy driving-related crashes
- Increasing truck parking spaces at Minnesota interstate rest areas will reduce crashes and costs associated with crashes.
- Providing adequate rest area truck parking effectively reduces costs related to highway crashes as demonstrated by a cost savings ratio of 1.61.

### Next Steps

- Communicate research findings
- Use research to guide Mn/DOT actions
- Encourage development of Drowsy Driving Educational Campaign
- Integrate Findings into Rest Area Strategic Plan
- Use as catalyst to consider Truck Haven Concept