# UTC Project Information

<table>
<thead>
<tr>
<th><strong>Project Title</strong></th>
<th>Estimating the Crash Reduction and Vehicle Dynamic Effects of Flashing LED Stop Signs</th>
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<tr>
<td><strong>University</strong></td>
<td>University of Minnesota</td>
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<tr>
<td><strong>Principal Investigator</strong></td>
<td>Gary Davis</td>
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| **PI Contact Information** | [drtrips@umn.edu](mailto:drtrips@umn.edu)  
612-625-2598 |
| **Funding Source(s) and Amounts Provided (by each agency or organization)** | ITS Institute SAFETEA-LU Grad School Match: $37,333  
Minnesota Department of Transportation: $37,333  
Local Road Research Board: $37,333 |
| **Total Project Cost** | $111,999 |
| **Agency ID or Contract Number** | UTC Grant Number: DTRT13-G-UTC35  
MnDOT contract 89261 work order 195  
CTS# 2011003 |
| **Start and End Dates** | 06/01/2010 – 02/28/2014 |
| **Brief Description of Research Project** | Final report abstract:  
A flashing LED stop sign is essentially a normal octagonal stop sign with light emitted diodes (LED) on the stop sign’s corners. A hierarchical Bayes observational before/after study found an estimated reduction of about 41.5% in right-angle crashes, but with 95% confidence this reduction could be anywhere between 0% and 70.8%. In a field study, portable video equipment was used to record vehicle approaches at an intersection before and after installation of flashing LED stop signs. After installing the flashing stop signs, there was no change in the relative proportion of clear stops to clear non-stops when minor approach drivers did not face opposing traffic, but the relative proportion of clear stops increased for drivers who did encounter opposing traffic. Random samples of 60 minor approach vehicles were selected before and after installation of flashing LED stop signs and speeds for these vehicles when about 500 feet from the intersection, and average deceleration rates over the final 500 feet, were estimated using trajectory-based methods. Average approach speeds tended to be highest in June, somewhat lower in July, and lower yet in September and November, with September and November having roughly equal average speeds. The average deceleration rates showed a similar pattern. |

Last updated (5/14/2018)
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<th><strong>Describe Implementation of Research Outcomes (or why not implemented)</strong></th>
<th>Nothing to report.</th>
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<td><strong>Place Any Photos Here</strong></td>
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<td><strong>Impacts/Benefits of Implementation (actual, not anticipated)</strong></td>
<td>Nothing to report.</td>
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| **Web Links** | http://www.cts.umn.edu/Research/ProjectDetail.html?id=2011003  
http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2330 |