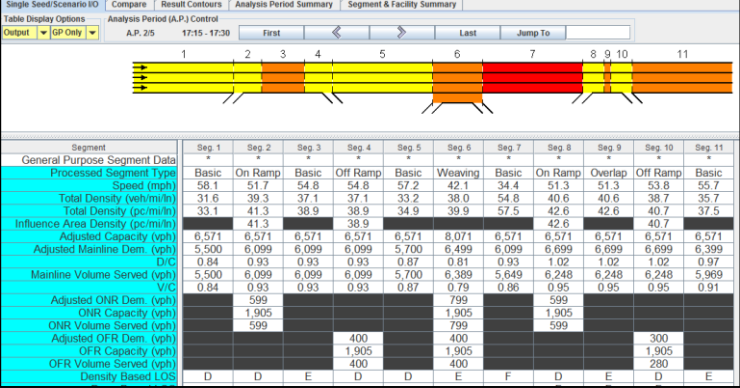


UTC Project Information	
Project Title	Dynamic Traffic Control Interventions for Enhanced Mobility and Economic Competitiveness
University	NC State University and Florida International University
Principal Investigator	Nagui M. Rouphail, Director, ITRE
PI Contact information	919-515-1154 (ph), 919-515-8898 (fx) rouphail@ncsu.edu
Funding Source(s) and Amounts Provided (by each agency/organization)	NCSU: \$81,800 FIU: \$67,500
Total Project Cost	\$148,500
Agency ID or Contract Number	2013-009
Start and End Dates	August 1, 2013 – (active)
<p>Brief Description of Research Project The methods for assessing the effectiveness of active traffic management (ATM) strategies aimed at improving mobility are currently rooted at a planning level approach rather than the operational levels of implementation. This research is intended to develop efficient methods that dynamically evaluate the current traffic system performance, guides the user with proposed interventions that can ameliorate the performance as needed, and implement and re-evaluate the effectiveness of the intervention(s) over time. To enable real progress in this arena, the focus will be on active traffic management techniques and their application on freeway facilities. In fact, this research is an early attempt at modeling “active” traffic management in near real-time by actually intervening at the right time and place to improve the system performance. The method will be implemented in an HCM-based FREEVAL-DSS Java platform.</p>	

<p>Describe Implementation of Research Outcomes (or why not implemented)</p>	<p>Research is still underway. The intent is to demonstrate the software in an interactive mode at the UTC Conference for the Southeastern Region in Alabama in March 2015. Further testing / prototyping of the software may be carried out at ITS Florida in May 2015</p>																																																																																																																																																																																																																								
<p>Place Any Photos Here</p>	 <p><i>Screenshot of a Freeway Facility Subject to Queuing Prior to ATM Implementation in FREEVAL-2015E</i></p> <table border="1"> <thead> <tr> <th>Segment</th> <th>Seg. 1</th> <th>Seg. 2</th> <th>Seg. 3</th> <th>Seg. 4</th> <th>Seg. 5</th> <th>Seg. 6</th> <th>Seg. 7</th> <th>Seg. 8</th> <th>Seg. 9</th> <th>Seg. 10</th> <th>Seg. 11</th> </tr> </thead> <tbody> <tr> <td>General Purpose Segment Data</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Processed Segment Type</td> <td>Basic</td> <td>On Ramp</td> <td>Basic</td> <td>Off Ramp</td> <td>Basic</td> <td>Weaving</td> <td>Basic</td> <td>On Ramp</td> <td>Overlap</td> <td>Off Ramp</td> <td>Basic</td> </tr> <tr> <td>Speed (mph)</td> <td>58.1</td> <td>51.7</td> <td>54.8</td> <td>54.8</td> <td>57.2</td> <td>42.1</td> <td>34.4</td> <td>51.3</td> <td>51.3</td> <td>53.8</td> <td>55.7</td> </tr> <tr> <td>Total Density (veh/mi)</td> <td>31.6</td> <td>39.3</td> <td>37.1</td> <td>37.1</td> <td>33.2</td> <td>38.0</td> <td>54.8</td> <td>40.6</td> <td>40.6</td> <td>38.7</td> <td>35.7</td> </tr> <tr> <td>Total Density (pc/mi)</td> <td>33.1</td> <td>41.3</td> <td>38.9</td> <td>38.9</td> <td>34.9</td> <td>39.9</td> <td>57.5</td> <td>42.6</td> <td>42.6</td> <td>40.7</td> <td>37.5</td> </tr> <tr> <td>Influence Area Density (pc/mi)</td> <td></td> <td>41.3</td> <td></td> <td>38.9</td> <td></td> <td></td> <td></td> <td>42.6</td> <td></td> <td>40.7</td> <td></td> </tr> <tr> <td>Adjusted Capacity (vph)</td> <td>6,571</td> <td>6,571</td> <td>6,571</td> <td>6,571</td> <td>6,571</td> <td>8,071</td> <td>6,571</td> <td>6,571</td> <td>6,571</td> <td>6,571</td> <td>6,571</td> </tr> <tr> <td>Adjusted Mainline Dem. (vph)</td> <td>5,500</td> <td>6,099</td> <td>6,099</td> <td>6,099</td> <td>5,700</td> <td>6,499</td> <td>6,099</td> <td>6,899</td> <td>6,899</td> <td>6,899</td> <td>6,399</td> </tr> <tr> <td>D/C</td> <td>0.84</td> <td>0.93</td> <td>0.93</td> <td>0.93</td> <td>0.87</td> <td>0.81</td> <td>0.93</td> <td>1.02</td> <td>1.02</td> <td>1.02</td> <td>0.97</td> </tr> <tr> <td>Mainline Volume Served (vph)</td> <td>5,500</td> <td>6,099</td> <td>6,099</td> <td>6,099</td> <td>5,700</td> <td>6,389</td> <td>5,649</td> <td>6,248</td> <td>6,248</td> <td>6,248</td> <td>5,969</td> </tr> <tr> <td>V/C</td> <td>0.84</td> <td>0.93</td> <td>0.93</td> <td>0.93</td> <td>0.87</td> <td>0.79</td> <td>0.86</td> <td>0.95</td> <td>0.95</td> <td>0.95</td> <td>0.91</td> </tr> <tr> <td>Adjusted ONR Dem. (vph)</td> <td></td> <td>599</td> <td></td> <td></td> <td></td> <td>799</td> <td></td> <td>599</td> <td></td> <td></td> <td></td> </tr> <tr> <td>ONR Capacity (vph)</td> <td></td> <td>1,905</td> <td></td> <td></td> <td></td> <td>1,905</td> <td></td> <td>1,905</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adjusted OFR Dem. (vph)</td> <td></td> <td>599</td> <td></td> <td></td> <td></td> <td>799</td> <td></td> <td>599</td> <td></td> <td></td> <td></td> </tr> <tr> <td>OFR Capacity (vph)</td> <td></td> <td></td> <td></td> <td>400</td> <td></td> <td>400</td> <td></td> <td></td> <td></td> <td>300</td> <td></td> </tr> <tr> <td>OFR Volume Served (vph)</td> <td></td> <td></td> <td></td> <td>400</td> <td></td> <td>400</td> <td></td> <td></td> <td></td> <td>280</td> <td></td> </tr> <tr> <td>Density Based LOS</td> <td>D</td> <td>D</td> <td>E</td> <td>D</td> <td>D</td> <td>E</td> <td>F</td> <td>D</td> <td>E</td> <td>D</td> <td>E</td> </tr> </tbody> </table>	Segment	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	General Purpose Segment Data												Processed Segment Type	Basic	On Ramp	Basic	Off Ramp	Basic	Weaving	Basic	On Ramp	Overlap	Off Ramp	Basic	Speed (mph)	58.1	51.7	54.8	54.8	57.2	42.1	34.4	51.3	51.3	53.8	55.7	Total Density (veh/mi)	31.6	39.3	37.1	37.1	33.2	38.0	54.8	40.6	40.6	38.7	35.7	Total Density (pc/mi)	33.1	41.3	38.9	38.9	34.9	39.9	57.5	42.6	42.6	40.7	37.5	Influence Area Density (pc/mi)		41.3		38.9				42.6		40.7		Adjusted Capacity (vph)	6,571	6,571	6,571	6,571	6,571	8,071	6,571	6,571	6,571	6,571	6,571	Adjusted Mainline Dem. (vph)	5,500	6,099	6,099	6,099	5,700	6,499	6,099	6,899	6,899	6,899	6,399	D/C	0.84	0.93	0.93	0.93	0.87	0.81	0.93	1.02	1.02	1.02	0.97	Mainline Volume Served (vph)	5,500	6,099	6,099	6,099	5,700	6,389	5,649	6,248	6,248	6,248	5,969	V/C	0.84	0.93	0.93	0.93	0.87	0.79	0.86	0.95	0.95	0.95	0.91	Adjusted ONR Dem. (vph)		599				799		599				ONR Capacity (vph)		1,905				1,905		1,905				Adjusted OFR Dem. (vph)		599				799		599				OFR Capacity (vph)				400		400				300		OFR Volume Served (vph)				400		400				280		Density Based LOS	D	D	E	D	D	E	F	D	E	D	E
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<p>Impact/Benefits of Implementation (actual, not anticipated)</p>	<p>Benefits of implementation will incur to TMC operators. They can use this software prototype on a real world facility to test ATM strategies and get quick feedback on their potential effectiveness under certain conditions.</p>																																																																																																																																																																																																																								
<p>Project Website</p>	<p>Abstract on STRIDE website: http://stride.ce.ufl.edu/rouphail-abstract</p> <p>Information on TRB/TRID: https://trid.trb.org/view/2013/P/1343136</p>																																																																																																																																																																																																																								