Center for Advanced Multimodal Mobility Solutions and Education

UTC Project Information – CAMMSE @ UNC Charlotte	
Project Title	Estimation of Pedestrian Compliance at Signalized Intersections Considering Demographic and Geographic Factors
University	The University of Connecticut
Principal Investigator	John N. Ivan and Amy Burnicki
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Funding Sources and Amount Provided (by each agency or organization)	The University of North Carolina at Charlotte: $60,000 The University of Connecticut: $30,007
Total Project Cost	$90,007
Agency ID or Contract Number	
Start and End Dates	10/01/2020 – 09/30/2022
Brief Description of Research Project	Increasing the share of walking as a travel mode is a goal for many urban areas for improving environmental sustainability. However, economic and social sustainability could degrade if the increased pedestrian traffic is not compliant with traffic signal indications. The objective of this project is to estimate models to predict pedestrian compliance at traffic signals as a function of traffic, demographic, geospatial and road design factors. We will seek to associate observed pedestrian compliance with traffic signal phasing with census-reported population data, data describing the nearby land development pattern and data describing crosswalk

	site and roadway characteristics, along with pedestrian and vehicle traffic counts. Pedestrian and vehicle counts, along with the compliance observations, will be gathered from the archives of a recent project conducted by the lead principal investigator in which pedestrian and vehicle interactions were observed at a total of 42 signalized intersections. Parcel-level land use data have been acquired for each municipality where a pedestrian crossing was observed. Population data will be acquired at the census block level from the 2010 decennial Census. Crosswalk site characteristics, including type of traffic control design and crossing distance, were observed at each crossing and are available in the project archives. Network topologies available from State agencies and the Census Bureau will be used to describe the connectedness of the street network surrounding each pedestrian crossing location. The result will be information about how pedestrian signal compliance relates to pedestrian and vehicle traffic counts over a range of land development, demographic, crosswalk and roadway conditions. These models will support the CAMMSE theme areas of "generate innovations in multi-modal planning and modeling for high-growth regions" and "Develop data modeling and analytical tools to optimize passenger and freight movements".
Describe Implementation of Research Outcomes (or why not implemented)	

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Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links • *Reports* • *Project website*	https://cammse.uncc.edu/sites/cammse.uncc.edu/files/media/CAMMSE-UNCC-2021-UTC-Project-Information-04-Ivan-Burnicki.pdf https://cammse.uncc.edu/sites/cammse.uncc.edu/files/media/CAMMSE-UNCC-2021-04-and-2022-11-UTC-Project-Report-Ivan-Final.pdf