UTC Project Information	
Project Title	Optimal Charging Station Planning to Adapt Mass Adoption of Electric Vehicles under Both Normal and Evacuation Scenarios (Project B6)
University	Team: University of Florida and Florida International University
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Funding Source(s) and Amounts Provided (by each agency or organization)	STRIDE: $90,000
Total Project Cost	$90,000
Agency ID or Contract Number	69A3551747104
Start and End Dates	February 1, 2022 to May 31, 2023
Brief Description of Research Project	Recently, the climate change effect is quickly moving up the agenda of Government and companies to promote the mass adoption of EVs. To move toward this goal, state of the art shows that the critical obstacle is insufficient EV charger infrastructure. Accordingly, many state and local agencies (e.g., state DOTs, counties, and cities), and companies (e.g., Tesla), are planning to install fast-charging infrastructure (e.g., Direct Current Fast Charger (DCFC)). However, charging stations and the roads around them will easily become congested resources in the transportation network due to relatively long charging time (>20 minutes). This STRIDE project will develop an optimal roadside DCFC charging station installation (location and capacity) plan by integrating optimization, simulation, queue theory, link flow dynamics, and machine learning approaches to mitigate charging station queueing and nearby traffic congestion. The resulted modeling and algorithms will enable adaptive roadside DCFC installation plan fitting the massive EV usage under both normal and evacuation scenarios. We will use the Florida State highway system as the testbed and build simulation studies through Florida Statewide Model FLSWM to evaluate the performance of our approaches. We expect our approaches can help both transportation electrification and resilience in USA.
Describe Implementation of Research Outcomes (or why not implemented)	Not available yet.

Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	Not available yet.
Web Links • Reports • Project website	https://stride.ce.ufl.edu/project-b6/