Traffic Patterns Design Challenge Abstract

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Due to current and upcoming construction projects, the University of Maryland campus has been facing significant disruptions to the traffic flow. Based on one survey conducted by the Department of Transportation Services at UMD, we identify the main issues influenced by the disruptions are cut-through traffic on the main arterial, traffic congestion during rush hours, and people's frustrations when they are confused about transport options.

As defined in one study that most traffic problems in UMD are caused by the overflow of vehicles, we have three main suggestions to solve the issues mentioned above. First, adding more coverage of the inner-campus shuttle circulation and detaching it from the off-campus shuttle network. Second, limiting the number of vehicles entering campus by redesigning the permit system and adding more parking lots in the campus peripheral that connect to the inner-campus transit circulation. Third, designing an integrated mobile application that provides information on all transit methods, including parking, e-bikes, and off-campus shuttles. This app would work with IoT, like cameras and sensors, to analyze real-time data such as parking space availability and pedestrian volumes and make forecasts to suggest routing and transit options for students and faculty.