



HOUSTON ACTION RESEARCH TEAM



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Modeling Hurricane Harvey Flood Risk, Spring 2018

This HART, comprised of undergraduate students from political science, civil engineering, mathematics, and computer science, collaborated with the Steve Costello, Chief Resiliency Officer for the City of Houston, as well as the Research and Education for Able Communities under Hazards (REACH) group and the Severe Storm Prediction, Education, and Evacuation from Disasters (SSPEED) Center, to model flooding experienced by Houstonians during Hurricane Harvey. The team utilized survey reports of flooding during Harvey collected by the University of Houston's Hobby School of Public Affairs, as well as data on rainfall, elevation, drainage infrastructure, and other spatial characteristics to determine areas with the highest likelihood of flooding during a major storm. Through a series of parametric and nonparametric models, the team provided policy recommendations to Costello in order to increase city resilience to incidents of major flooding. In general, areas located farther from floodplains and watersheds, as well as areas with lower drain elevations and smaller pipe cross section areas were less likely to experience flooding.

