

PROJECT OVERVIEW REPORT

1. UTC Identifying Number
69A3551847102
2. Center Identifying Number
CAIT-UTC-REG34
3. Project Title
Assessing and Mitigating Transportation Infrastructure Vulnerability to Coastal Storm Events with the Convergence of Advanced Spatial Analysis, Infrastructure Modeling, and Storm Surge Simulations
4. Principal Investigator & Contact Information
Jie Gong, Ph.D.
Associate Professor
Rutgers, The State University
500 Bartholomew Road
Piscataway, NJ 08854
5. Rutgers/CAIT Project Manager
Patrick Szary, Ph.D.
6. Customer Principal
Michael Oppegaard, Emergency Management Coordinator
Monmouth County Sheriff's Office
2000 Kozloski Road
Freehold, NJ, 07728
7. Project Description
To protect the security of the public transportation infrastructure and the enormous amount of public assets, the proposed study intends to develop a decision support tool that can assist infrastructure stakeholders in making decisions at the day-to-day operation level (i.e. evacuation or shutting down of roads and bridges) to protect communities from impending flooding events as well as in making long-term decisions in mitigating future flood risks facing their current infrastructure assets and their future projects (in particular those related to storm surge and extreme rainfall events). The expected outcome of this study is new software applications that are built for infrastructure resilience centered investigations. The software applications will be cloud-based which will allow infrastructure stakeholders such as DOT personnel, floodplain managers, and OEM coordinators to access and use it without any local installations on their computers.

8. Implementation of Research Outcomes (or why not implemented)

The intended outcome of the project is new software applications that are built for infrastructure resilience centered investigations. The software applications will be cloud-based which will allow infrastructure stakeholders such as DOT personnel, floodplain managers, and OEM coordinators to access and use it without any local installations on their computers.

9. Impacts/Benefits of Implementation (actual, not anticipated)

To Be Determined

10. Dates and Budget

Start date: 2/1/2020

End date: 9/30/2020

UTC (CAIT) Dollars: \$80,000

Cost Sharing: \$0

Total Dollars: \$80,000

11. Keywords

Infrastructure Resilience, Flood Risk, Simulation, Storm Surge, Big Data

12. Web Links (Reports and Project Website)

<https://cait.rutgers.edu/research/assessing-and-mitigating-transportation-infrastructure-vulnerability-to-coastal-storm-events-with-the-convergence-of-advanced-spatial-analysis-infrastructure-modeling-and-storm-surge-simulations/>