

## PROJECT OVERVIEW REPORT

1. UTC Identifying Number  
69A3551847102
2. Center Identifying Number  
CAIT-UTC-REG35
3. Project Title  
NJDOT Flood Risk Visualization Tool
4. Principal Investigator & Contact Information  
Jon Carnegie  
Executive Director  
Rutgers Bloustein School, Voorhees Transportation Center  
33 Livingston Avenue  
New Brunswick, NJ, 08901
5. Rutgers/CAIT Project Manager  
Patrick Szary, Ph.D.
6. Customer Principal  
Elkins Green  
Director Division of Environmental Resources  
NJ Department of Transportation  
P.O. Box 600  
Trenton, NJ 08625-0600
7. Project Description  
New Jersey's transportation system, which comprises a vast array of infrastructure, is vulnerable to a range of extreme weather and climate-related hazards including: warming temperatures, temperature extremes, intense precipitation events, drought, rising sea levels, and storm surges. The impact of extreme weather and changing climate conditions on transportation infrastructure and assets will vary by mode and location but are likely to be very costly. The primary goal of this proposal is to work with NJDOT to develop a new visualization tool and enhanced capacity for NJDOT personnel to assess the flood vulnerability of its infrastructure and assets.
8. Implementation of Research Outcomes (or why not implemented)  
The intended outcome of the project will include new tools and workflows designed to better inform NJDOT asset management and project development decisions as well as operations and maintenance procedures. The integration of flood hazard vulnerability data into existing capital planning and asset

management processes will, over time, improve the overall durability and resilience of transportation infrastructure weather and climate hazards. To promote utilization of the NJDOT Flood Risk Visualization Tool and to make other audiences broadly aware of DOT's efforts to address resilience in transportation decision-making in New Jersey, the research team will conduct internal NJDOT training sessions to expose NJDOT personnel to the availability of the NJDOT Flood Risk Visualization Tool and how the tool can be used to incorporate flood resilience considerations as part of capital planning, project design, operations, maintenance and other decisions being made by the department. Furthermore, the team will find opportunities to present the research at professional conferences, trade association meetings, NJ League of Municipalities, etc.

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

10. Dates and Budget

Start date: 4/1/2020

End date: 6/30/2022

UTC (CAIT) Dollars: \$120,000

Cost Sharing: \$148,635

Total Dollars: \$268,635

11. Keywords

Flood risk, infrastructure resilience, vulnerability assessment, flood visualization, decision support tool, fluvial flooding, coastal flooding, sea-level rise, storm surge

12. Web Links (Reports and Project Website)

<https://cait.rutgers.edu/research/njdot-flood-risk-visualization-tool/>