RUTGERS
Center for Advanced Infrastructure and Transportation

PROJECT OVERVIEW REPORT

1. UTC Identifying Number
   69A3551847102

2. Center Identifying Number
   CAIT-UTC-REG78

3. Project Title
   Evaluation of the Effects of Superstructure Characteristics on the Performance of Bridge Decks under Traffic Loads

4. Principal Investigator & Contact Information
   Sharef Farrag, Ph.D.
   Postdoctoral Associate
   Rutgers University
   500 Barthalomew Rd.
   Piscataway, NJ 08854

5. Rutgers/CAIT Project Manager
   Patrick Szary, Ph.D.

6. Customer Principal
   Richard Dunne, National Director Bridge Preservation
   Greenman-Pedersen, Inc.
   520 US Highway 22, Suite 200
   Bridgewater, NJ 08807

7. Project Description
   The primary goals of this proposal are to assess the stresses and displacements exhibited by the deck under traffic loads; conduct a parametric study encompassing multiple deck and superstructural material and geometric aspects, reflecting varying bridge superstructure systems, and evaluate the extent to which varying bridge superstructure and deck aspects contribute to the deterioration of the bridge deck.

8. Implementation of Research Outcomes (or why not implemented)
   The intended outcome of the project is to reveal which type of bridges are more prone to mechanical/vibration damage as opposed to those that exhibit electrochemical deterioration.

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

RUTGERS
Center for Advanced Infrastructure and Transportation

10. Dates and Budget
    Start date: 7/1/2023
    End date: 6/30/2024
    UTC (CAIT) Dollars: $100,040
    Cost Sharing: $0
    Total Dollars: $100,040

11. Keywords
    FEM models, COMSOL Multi-physics, NDE evaluation, superstructural rigidity

12. Web Links (Reports and Project Website)
    https://cait.rutgers.edu/research/evaluation-of-the-effects-of-superstructure-characteristics-on-the-performance-of-bridge-decks-under-traffic-loads/