RUTGERS
Center for Advanced Infrastructure and Transportation

PROJECT OVERVIEW REPORT

1. UTC Identifying Number
   DTRT13-G-UTC28

2. Center Identifying Number
   CAIT-UTC-NC49

3. Project Title
   Utilizing Unmanned Aircraft Systems for Infrastructure Management

4. Principal Investigator & Contact Information
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7. Project Description
   The objective of this study is to evaluate the effectiveness of utilizing UAS to inspect, inventory, and monitor interchange assets along the New Jersey roadway network. The team will use video and photographic data collected by UAS to perform preliminary inspections on multiple components of the interchange including: signage, roadway markings, barrier island, and asphalt condition. Along with data collected on the individual assets, the team will collect aerial imagery data of each interchange as a cohesive unit. These images will be processed and rendered into a three-dimensional model. This three dimensional environment could provide additional insight into the interchange as a whole, which may not have been noticeable with conventional two-dimensional images.

8. Implementation of Research Outcomes (or why not implemented)
   This project could result in a training program for engineers regarding the best practices of how to implement UAS into their interchange inspections. It could provide additional information regarding flight planning, image distances, sensor types, altitude, and safe distances necessary for a safe and productive inspection.

This research could lead to additional projects in identifying and developing best practices for other types of infrastructure assets. This could include utilizing UAS for traffic monitoring, highway inspections, bridge inspections, railway inspections, and other transportation assets.

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

10. Dates and Budget
    Start date: 7/1/2017
    End date: 6/30/2018
    UTC (CAIT) Dollars: $29,881
    Cost Sharing: $0.00
    Total Dollars: $29,881

11. Keywords
    Unmanned Aircraft Systems, UAS, Drones, Infrastructure Management

12. Web Links (Reports and Project Website)

    cait/research/utilizing-unmanned-aircraft-systems-infrastructure-management