

## PROJECT OVERVIEW REPORT

1. UTC Identifying Number  
69A3551847102
2. Center Identifying Number  
CAIT-UTC-REG48
3. Project Title  
Linking Physics-Based Deterioration Model to Field-Based Condition Assessments for Improving Asset Management
4. Principal Investigator & Contact Information  
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7. Project Description  
The main focus of the project is to establish a link between a physics-based corrosion model and condition rating assessments. This will empower the DOTs to rationally explore the long-term benefits of investments in innovative technologies, such as advanced materials and innovative construction methods. If the framework is implemented on a larger group of bridges, DOTs will be able to better allocate assets by prioritizing bridges for repair and maintenance according to their true vulnerability quantified by the physics-based deterioration models whose results can be directly utilized in structural analyses.
8. Implementation of Research Outcomes (or why not implemented)  
The proposed research will provide recommendations for implementing the results into the state bridge management system (BMS). Relevant documentation, along with the detailed report, will be provided to guide the adoption of the new recommendations. The findings of this project are expected to facilitate informed screening and classification of bridges for repair and

rehabilitation and explore alternative maintenance scenarios. To allow transfer of results into practice, existing deterioration curves and bridge details of DOTs will be used as input for the framework.

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

10. Dates and Budget

Start date: 2/1/2021

End date: 1/31/2022

UTC (CAIT) Dollars: \$68,821

Cost Sharing: \$70,794

Total Dollars: \$139,615

11. Keywords

Asset management, repair, service life, resiliency, corrosion, deterioration, loss of functionality

12. Web Links (Reports and Project Website)

<https://cait.rutgers.edu/research/linking-physics-based-deterioration-model-to-field-based-condition-assessments-for-improving-asset-management/>