



Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Jamey Tesler, Secretary & CEO



2022 RESEARCH PROJECT STATEMENT

Research Topic:

BIM for Transit Infrastructure: A Feasibility and Gap Assessment with Current Practices and Systems at the MBTA

Research Budget and Timeline:

- \$75,000-\$100,000
- 12-15 months (of which final 3 months are for review)

Problem Statement and Objectives

Research is needed on the importance of data governance and integration. Starting from the conception of a project's data dictionary, through the asset provisioning and commissioning process for new infrastructure and data management, through the integration into computerized maintenance management systems, MBTA management of new projects and ongoing operations can be improved by implementing the Building Information Modeling (BIM) delivery methodology in the Capital Delivery department. Currently Consultant and Contractors are using differing BIM models in their work but the MBTA is not in receipt of those models. The project will conduct interviews with Consultants and Contractors and review the present day utility of the models and how to store them for future use. In addition, Owner/Operators including other state and regional agencies will be canvassed to evaluate best practices and learn about challenges encountered in implementing a BIM workflow integrated throughout infrastructure design, construction, operations, and maintenance areas.

Anticipated Outcomes and Deliverables

Outcomes: The results of this project will be used to inform the MBTA's creation and implementation of a BIM approach for its Capital Delivery process. It is anticipated that this project's results will be implemented directly into practice on upcoming projects with a trial project and trial contract language based on this study's recommendations.

Deliverables:

1. Literature review on the philosophy and methodology of BIM, and a review of BIM practices at other state and regional agencies (minimum of 3), to evaluate best practices and challenges with implementing a BIM program.
2. Interviews with a sample set of Consultants, Contractors and Owner/Operators such as MTA, WMATA, SEPTA, etc, and Maintenance Operations regarding using BIM with capital projects.
3. Recommendations on how the MBTA could specify the parameters of the data models to be collected and how to utilize BIM to better its Planning, Capital Delivery, Asset Management and Maintenance Operations needs and processes.
4. Development and analysis of project selection criteria for candidate projects for BIM implementation
5. Final presentation
6. Final report summarizing research activities, results, and recommendations.