CASE STUDY

Bayonne Bridge Navigational Clearance Program

Staten Island, New York

CHALLENGE

When the Bayonne Bridge, which connects Bayonne, New Jersey, and Staten Island, New York, needed to be raised to accommodate larger, Panamax container ships, the Port Authority of New York and New Jersey implemented a novel solution. To meet the increased height of the ships, they decided to raise the roadway 64 feet within the existing arch span and build new approaches, while maintaining navigational and vehicular traffic. The steel main span was reframed and strengthened so the new roadway could be built above the existing roadway until it could be demolished. In order to construct the approaches, 796 pieces of precast concrete had to be fabricated, delivered, and installed. This type of complex project, raising the height of the roadbed without removing the steel arch truss and keeping water and highway traffic flowing, was a first of its kind.

SOLUTION

MBP provided scheduling, project controls, cost estimating, and dispute resolution services for this project which utilized innovative techniques and required staged construction to keep traffic flowing in both directions with minimal disruption.

MBP was able to use data from the critical path method (CPM) schedule, fabrication shop productivity reports, and live field-installation data in order to report on the project status. MBP joined this data into reports that helped to predict the project completion dates as well as interim milestones. The data observed in the field and identified potential bottle necks and calculated completion dates based on the predicted scenarios.

The team worked with the Port Authority and the contractor to actively mitigate delays found by reviewing the monthly CPM schedule. The over 8,000-activity schedule was constantly analyzed for actualized data and predictive logic accuracy to help ensure the legitimacy of upcoming events and forecasted completion dates. During reoccurring meetings, the project team would continually identify high-risk tasks, calculate their potential impacts, and develop a solution that could be implemented to mitigate any impacts.

MBP also assisted the Port Authority in helping to resolve a dispute over approximately $400 million and almost two years of delay. Due to major necessary design changes, the contractor's time frame to complete the project was severely impacted. Early in the construction phase, constructibility issues were identified on both the new approaches and the mainspan requiring alternate designs and construction methods. MBP analyzed the design changes and assisted in ensuring the schedule changes and impacts were correct. In addition, MBP was able to review the CPM schedule and costs associated with the changes to help negotiate an adjustment for the contractor.

RESULT

Throughout the course of the project, MBP worked with the owner and contractor to assess, mitigate, and negotiate multiple delays. This scheduling and cost review of the submitted claims resulted in an average of 25% cost avoidance resulting from unforeseen issues and delay claims. The bridge and raised roadway resulted in tremendous economic benefit to the region and entire the east coast.

> *"The project is very unique and we've had a tremendous amount of challenges. We've had the good fortune to have MBP be our schedule team here to support all of our efforts. They've been able to keep us on point to identify critical tasks that the project team needed to keep their eye on. They've been a asset to me, to the project, and the Port Authority. They really appreciate everything that the MBP team has brought to the Bayonne team. Thank you."*

- Marc Matalon, Resident Engineer, GPI