

4D Schedule

EXPERIENCE



Turino has been able to provide 4D scheduling (BIM) as a cost effective service. Our clients are seeing that the costs saved are substantially more than the costs of creating a 4D schedule. Recent projects enhanced by Turino's 4D Schedules include:

Providence Viaduct Bridge 578

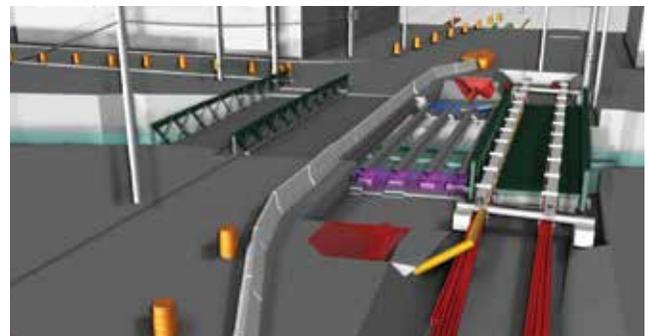
An \$80 million, three-year Highway/Bridge Reconstruction on Interstate I-95, this project is a traditional Design Bid Build Project that was advertised for bid this October, 31 2012. The Rhode Island Department of Transportation (RIDOT) team utilized 4D to assess an optimum completion date, phasing, and constructability. The 4D enhanced the use of CPM and provided a great tool to communicate and facilitate project decisions. The videos of the 4D Schedule were distributed to the contractors as part of the bid documents to help aid in the understanding of the project. It is estimated that the use of the 4D Schedule has already saved RIDOT over 10x the cost of services in design enhancements and additional savings in resolving potential design/constructability issues.



Providence Viaduct Bridge 578

Atwells Avenue Bridge

A \$4 million project consisting of multiple phases and traffic shifts, this project is a traditional Design Bid Build Project and is slated to be advertised for construction in 2013. As part of the 90% design submission RIDOT asked Turino to quickly develop a 4D schedule. Turino took the 2D AutoCAD drawings, converted them into a full 3D model. Simultaneously, Turino created a CPM Schedule of the proposed construction and linked it to the 3D model, creating a 4D schedule. The end result was project enhancements with estimated savings of over 10x the cost of services, shortened construction duration and fewer construction phases.

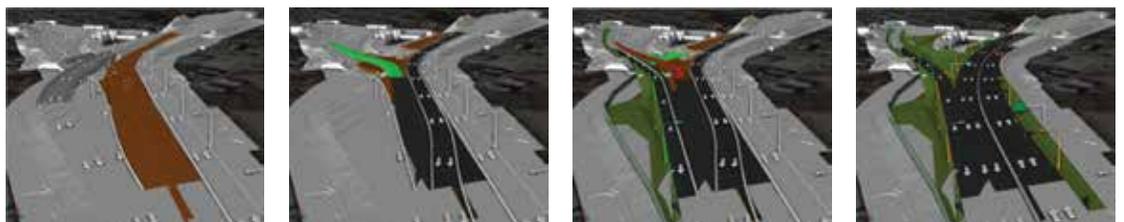


Atwells Avenue Bridge

Magnolia Street Bridge Demolition and Highway Relocation

This \$8 million project consists of multiple phases and traffic shifts and is a traditional Design Bid Build Project slated to be advertised for construction in 2013. As part of the 90% design submission RIDOT asked Turino to quickly develop a 4D schedule. Similar to the Atwells Avenue Bridge project, Turino took the 2D AutoCAD drawings and converted them into a full 3D model while simultaneously creating a CPM schedule of the proposed construction. It was then linked to the 3D model, creating a 4D schedule. RIDOT realized project modifications with estimated

savings of 15x the cost of services due to shortening the construction duration, using fewer construction phases, enhancing design and resolving constructability issues.



Magnolia Street Bridge Demolition and Highway Relocation



Apponaug Circulator Long-term Improvements

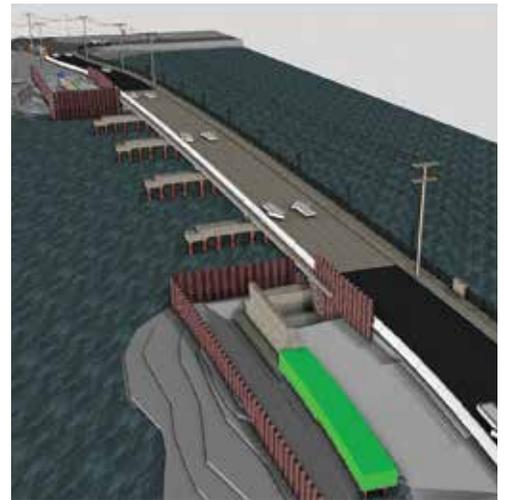
Estimated at \$29.3 million, this project consists of the reconstruction of centrally located roadways in and around the Warwick City Hall area between Apponaug Four Corners and Williams Corner. A new bypass roadway will reduce the traffic volume passing through the heart of historic Apponaug Village thereby creating the potential for redevelopment. Signalized intersections will be replaced with modern roundabouts designed to reduce vehicle speeds, maximize vehicle and pedestrian safety and improve the overall traffic flows. Turino will create the 4D schedule by combining the Contract Time Determination (CTD) and 3D project model to determine milestones, establish the contractual completion date, provide input within the development of the contract plans and specifications, as well as verify the quantity take-offs.



Apponaug Circulator Long-term Improvements

Replacement of Central Bridge No. 182

This \$20 million project consists of replacing the bridge carrying traffic on Massasoit Avenue over the Barrington River from Route 114 to Woodward Avenue. The Project is split into five construction phases in order to maintain one lane of traffic in each direction on the bridge, and account for the relocation of a gas line, water line, and overhead utility cables. The project will consist of new bridge abutments and substructure, the complete replacement of the superstructure, and full depth roadway reconstruction at the bridge approaches. There are potential environmental impacts due to the population of Diamond Back Terrapin turtles that exist within this location, as well as fish migratory periods which do not allow the contractor to disturb the river bottom for 4.5 months out of the year. Turino created a 4D model for this project which was presented by RIDOT to Barrington residents on February 4, 2013. The video provided residents with an easy-to-understand graphical representation of the project from start to finish, providing them with an idea of what to expect during the length of the project. Estimated completion date is set for September 2016.



Replacement of Central Bridge No. 182

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