



# Design Optimization and Risk Mitigation for Collaborative Delivery Projects

## OVERVIEW

As the demand for infrastructure grows, so do development challenges, including disconnected workflows between project design, project delivery, and project management teams. This disconnect makes it increasingly difficult for transportation owners to deliver projects on schedule and on budget. With Bentley's cloud-based 3D/4D road and bridge solutions, you can increase coordination and collaboration throughout the project lifecycle, helping you create efficient and constructable project designs, establish enhanced risk mitigation, and increase delivery certainty.

## CONNECT YOUR DESIGN DELIVERY AND CONSTRUCTION PLANNING WORKFLOWS

Although technology has enabled designers, contractors, and owners to improve efficiency in their respective areas, data silos within these teams continue to prevent transportation owners from fully establishing real-time access to design, schedule, and construction data. For example, stakeholders often use siloed 2D paper-based linear workflows, causing decision-makers to overlook critical information. As a result, teams diligently focus on their specific area of expertise, only to discover at hold-points or interdisciplinary reviews that the overall project is plagued with clashes, mistakes, and constructability issues. Then it is back to square one, recreating the entire design. Had these issues been identified earlier, the teams would have saved significant time and effort.

## OPTIMIZE DESIGN, MITIGATE RISK, AND INCREASE DELIVERY CERTAINTY

Our road and bridge solutions provide an interactive, cloud-based 3D/4D environment that enables you to coordinate and collaborate with the entire project team in real time. The solutions start with the power of ProjectWise<sup>®</sup>, which provides automated workflows, standardized naming conventions, templated libraries, and meaningful data structure, all built on top of your DOT's custom workspaces. ProjectWise establishes an engineering data management framework for individual designers to quickly utilize within OpenRoads<sup>™</sup> Designer as they create their portion of the design. As the design process progresses, the data can be used to build an iModel – a digital representation of the real-world asset – within SYNCHRO<sup>™</sup>, which can produce a 4D simulation of the work sequence. Combining the iModel with SYNCHRO allows each discipline to advance their work and to easily identify and log issues for discussion and resolution. With this connected data environment, you will enhance collaboration with stakeholders throughout the project lifecycle, increase project transparency, quickly identify and mitigate risks, and continuously iterate toward an optimized design. The result is more projects delivered on time and on budget.

## BENEFITS

- ◆ Improve design quality and intent
- ◆ Streamline design and construction review processes
- ◆ Visualize and resolve conflicts before construction begins
- ◆ Reduce change orders and rework on projects
- ◆ Increase delivery certainty
- ◆ Establish a reliable cost and schedule framework
- ◆ Optimize project schedules while keeping the original design intent
- ◆ Anticipate impacts on traffic flows within time and spatial contexts
- ◆ Increase transparency to inform the public and meet regulations
- ◆ Improve safety planning to reduce jobsite accident and injuries
- ◆ Single source of truth engineering data management across a project or program of project

