

CASE STUDY

Using Design-Build to Create a Smoother, Safer Connection for Arkansas Along the I-30 Corridor

One of the busiest corridors in Arkansas has undergone a major transformation, enhancing access into the downtown areas of Little Rock and North Little Rock. The 30 Crossing Project, a key component of the state's 10-year Connecting Arkansas Program (CAP), addresses long-standing congestion issues while improving roadway capacity and safety for travelers and freight carriers. Navigating densely populated downtown areas, the project is a vital link in Arkansas' transportation network, supporting both economic growth and enhanced mobility.



This ambitious infrastructure improvement effort is the first design-build transportation project for the Arkansas Department of Transportation (ARDOT), establishing a precedent for future large-scale transportation projects in the state. This expansive initiative included widening of an interstate highway, modifications to complex interchanges including Highway 10, local roadway improvements and the construction of a major crossing over the McClelland-Kerr Arkansas River Navigation System (MKARNS). By replacing a 3,360-foot bridge over the Arkansas River, reconstructing 4.7 miles of I-30 and I-40 and providing significant upgrades to a total of 15 bridges on Interstate 30, the project modernizes one of the most critical corridors in the state.

Challenge

Due to robust economic growth, the I-30 corridor through downtown Little Rock and North Little Rock faced increasing congestion and safety concerns. In recent years, the highway, which provided five interstate connections and a critical river crossing, struggled to handle growing traffic volumes, leading to delays, inefficient freight movement and safety risks for drivers.

Navigating the complex urban landscape required a construction strategy that balanced infrastructure improvements while maintaining access to the two downtown areas. Businesses, government offices and residential communities depended on the corridor for

Project Stats

Client

Arkansas Department of Transportation

Location

Little Rock, Arkansas

mobility, meaning that prolonged closures or major traffic shifts would have widespread economic and social consequences. The need for increased capacity and operational improvements was clear, but executing the project without creating further disruptions to daily commuters and businesses presented a significant challenge.

Solution

To address these challenges, ARDOT strategically selected a design-build model to complete this project, and partnered with the Kiewit-Massman Construction (KMC) Joint Venture (JV) and Burns & McDonnell to complete this first-of-its-kind transportation project. Burns & McDonnell served as designer of record for this JV team, leading bridge, roadway, drainage and traffic design. The partnership leveraged extensive experience in the use of design-build for first-time customers, innovative transportation infrastructure design and complex bridge construction to develop solutions that enhanced efficiency, minimized disruption and kept the project on schedule.

One of the key innovations offered by this design-build model was the use of an optimization and refinement period after award. This approach increased collaboration among the owner, engineers and construction teams, leading to refinements in the project scope and reduced project risks earlier in design. This collaboration not only minimized disruptions to traffic but also streamlined construction, improving cost efficiency and expediting delivery for 48 design packages in just 16 months.

To provide effective maintenance of traffic throughout construction, the team strategically divided work packages by geographically based zones, rather than by scopes of work. This methodology saw that construction sequencing aligned with real-time traffic management needs, reducing the number of lane shifts and allowing crews to work more safely and efficiently. By maintaining the existing number of lanes during peak travel times and maintaining uninterrupted access to the Arkansas River bridge, the team successfully mitigated disruptions to the 130,000 commuter and freight vehicles traveling the section of I-30 each day.

“I hear more compliments on the 30 Crossing Project than anything else we do in the state. There are a lot of people who go through there and they just can’t get over the size of the project and how they keep the traffic moving. It’s gotten a lot of notice around the state.”

PHILIP TALDO
Arkansas Highway Commission

The project team helped ARDOT staff navigate their first design-build project by streamlining project review and approval processes. Through the use of weekly push-prints, task force meetings and over-the-shoulder plan reviews, ARDOT review teams were closely engaged in the design and plan development. This, combined with structuring the work into smaller, more manageable packages, enabled ARDOT staff to efficiently review and approve designs, helping the project achieve substantial completion six months ahead of schedule.

Results

The 30 Crossing Project has delivered significant infrastructure improvements that will benefit Arkansas for decades to come. The project successfully improved 33.7 lane miles and replaced 15 bridges including the Arkansas River bridge. These enhancements resulted in a safer and more efficient transportation corridor for commuter and freight traffic and provided an improved navigation channel and maritime traffic along the MKARNS.

Beyond infrastructure improvements, the project has had a profound impact on urban revitalization efforts in Little Rock and North Little Rock. The reconstruction of the U.S. Highway 10 interchange has created a more efficient gateway into downtown Little Rock, diffusing traffic more effectively and providing new opportunities for greenspace and redevelopment. Pedestrian-friendly design elements have been incorporated into the project, improving walkability and enhancing connectivity between local businesses and residential areas.

The project emphasized collaboration, efficiency and innovation, as it successfully modernized one of the state’s most vital transportation corridors. Aligned with the DOT’s broader goals and Arkansas’ commitment to economic inclusion, the project also achieved 7.5% Disadvantaged Business Enterprise (DBE) participation, strengthening local and minority-owned businesses.

The 30 Crossing Project stands as a landmark achievement in Arkansas’ transportation infrastructure. The project serves as a model for future large-scale transportation initiatives, demonstrating the value of strategic design, careful planning and stakeholder collaboration.

About Burns & McDonnell



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