Easing the Growing Pains of Traffic Expansion

While population growth and the ability to thrive are admirable qualities for virtually any city, they come with some challenges as city, county and state governments strive to keep up with that growth. The city of Columbia, Mo., was no different when it called on Burns & McDonnell to help redesign Scott Boulevard, or Missouri Route TT, a suburban arterial running north-south along on the city’s west side, to handle increased traffic due to population growth and city expansion.

A two-lane, rural route with rolling hills and light traffic, Scott Boulevard has spent much of its existence as a county road. But when the city of Columbia began to stretch its limits beginning in the 1970s, the population increase and expanded development to the west caused traffic demand that outpaced the capacity of the roadway.

Aside from the challenge of handling increased traffic, the design of the roadway came with its own set of challenges. The decades-old county route had a number of safety issues, including small to non-existent shoulders, deep ditches on each side and short sight distance due to rolling hills. In addition, numerous residential properties had direct access to the roadway, making merges into the traffic flow dangerous.

“In addition to the safety issues, the city’s primary water transmission main also runs parallel to the roadway,” says John Frerking, Burns & McDonnell’s client manager for the city of Columbia. “We had to be precise with the design for the new roadway to avoid the main. This included potholing along the pipeline alignment so we could mark the line’s exact horizontal location and depth.”

Ultimately, Burns & McDonnell proposed an offset of the roadway’s existing centerline alignment for a significant portion of the project to avoid the transmission main and remove most of the residential access.

In the spirit of mutual cooperation, the Missouri Department of Transportation (MoDOT), which previously was responsible for maintenance of Scott Boulevard, entered a relinquishment agreement with the city. MoDOT provided significant funding toward the redesign and construction, but once complete, Scott Boulevard maintenance becomes the responsibility of the city. That means the design had to meet both city and state criteria before it could be approved.

Now Scott Boulevard, a four-lane arterial with turning lanes, a bike lane and a median, is a safer, more pleasant route for Columbia motorists. Sight distance has been improved by leveling the terrain and moving access to residential properties off the main thoroughfare. The medians on the northern half of the roadway were designed to allow for future lane expansion if traffic demand continues to grow. Burns & McDonnell is completing design work for Phase II, a southern extension of the Scott Boulevard improvements, with construction set to begin in 2013. Phase III will be designed by city engineering staff, with Burns & McDonnell assisting on a bridge design.

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