

Missouri Route 30 and Summit Drive, Fenton, MO

DISPLACED LEFT TURN INTERSECTION

THE PROBLEM

A large commercial development called Gravois Bluffs opened across from a residential area. The existing intersection had a low level of service due to the increased traffic, which limited the area's economic growth potential and hindered continued development on the corridor.

THE SOLUTION

The first Displaced Left Turn Intersection in Missouri was installed in 2007.

THE OUTCOME

Currently servicing up to 50,000 vehicles a day, this intersection design proved to have several benefits, including:

- Improved level of service.
- Accommodating economic development.
- Increased corridor capacity for future traffic volumes.
- Fewer and less severe crashes, most being property damage only.
- Decreased cost when compared to separating the two roads with an interchange.

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INTERSECTION LOCATION

38°30'14.5"N 90°27'25.0"W

Background

Missouri installed its first Displaced Left Turn (DLT), or Continuous Flow Intersection (CFI), in 2007 in the city of Fenton in St. Louis County. Located near the major intersection of Route 30 and Route 141, the intersection of Route 30 and Summit Drive needed to be rebuilt to accommodate increased residential traffic and growth in a nearby commercial area that was being developed.

Challenges

Due to the expected level of growth at this intersection, Missouri DOT (MoDOT) required a new facility to accommodate not only current needs but also future growth. The agency considered the DLT as an option for maintaining an acceptable level of service and projected that if the number of vehicles continued to grow by 25 percent at this intersection over the next 20 years, the DLT will reduce vehicle delay from 2 minutes to just 30 seconds.¹

“We were not getting the level of service we wanted, so we had a couple of people thinking outside the box ... [the DLT] turned out to be a great thing to help keep traffic moving.”

— Jeanne Olubogun, District Traffic Engineer, Missouri DOT

Approach

MoDOT reviewed several options for addressing delay at this busy location, including innovative intersection designs. The DLT proved to be the only design capable of handling the projected increase in traffic while maintaining the existing level of service.

Results

Partnering with the property owner of the nearby Gravois Bluffs commercial complex to finance construction, MoDOT was able to use the DLT as a way to maximize the main line green time while enabling left turns onto the side street to proceed at the same time. This



Left Turn Crossover at MO 13 and Summit Drive
Source: DLT Case Study Video FHWA-SA-14-055

functional improvement increased the green phase on MO 30 from 53 percent to 64 percent.²

In addition to this operational improvement, the DLT also proved to be a safe option. Once the facility had been constructed, there were very few crashes, and the ones that occurred were far less severe, with most being property damage only.

¹ Missouri DOT, “Continuous Flow Intersections” Web page. Available at: <https://www.modot.org/continuous-flow-intersections>
² Engineering Design Source, Inc., “Welcome” Web page. Available at: <http://engdesignsource.net/>