DIVERGING DIAMOND INTERCHANGE

What is a Diverging Diamond interchange?

A Diverging Diamond Interchange allows two directions of traffic to temporarily cross to the left side of the road. It moves high volumes of traffic through an intersection without increasing the number of lanes and traffic signals. This movement provides easier access to an interstate.

How do motorists drive through a Diverging Diamond interchange?

If you look at an aerial picture of a Diverging Diamond interchange, you may think it could be a challenge driving through the intersection. But in reality, a Diverging Diamond interchange has pavement markings and traffic signals just like any intersection.

When driving through a Diverging Diamond interchange, motorists proceed through a traffic signal at the entrance to the interchange and simply follow their lane to the opposite side of the roadway. Motorists needing to access the interstate turn left on the on-ramp without having to stop for additional traffic signals or wait for oncoming traffic to pass. Motorists needing to drive straight through the intersection proceed through a second traffic signal and follow their lane back to the right side of the road. Pavement markings and signals direct motorists to where they need to go. Learn more at **https://youtu.be/HD-0QnUlLOQ**.

How do pedestrians and cyclists use a Diverging Diamond interchange?

Pedestrians use signalized pedestrian crossings and are then directed to a center pedestrian island in the middle of the road. Bicyclists can use a bike lane adjacent to the right lane or a median bike lane if one is provided.

What are the benefits of a Diverging Diamond interchange?

A Diverging Diamond interchange reduces congestion by allowing traffic to keep moving through an intersection. It also improves safety by allowing free-flowing turns when entering and exiting an interstate, eliminating the left turn against oncoming traffic and limiting the number of traffic signal phases. They are easy to navigate, and they eliminate last-minute lane changes.

The Diverging Diamond interchange provides better sight distance at turns, which results in fewer crashes.

Is a Diverging Diamond interchange cost effective?

Yes. For improvement projects, a Diverging Diamond interchange can often be built using the existing bridge structure and the existing right of way, eliminating the cost of building new structures and purchasing additional right of way. Because many of the existing interchange features remain intact, the Diverging Diamond interchange is often constructed in less time than it would take to construct a new interchange and with significantly less impact to motorists. When constructing a new interchange, a Diverging Diamond interchange usually requires the purchase of less right of way and the construction of fewer lanes and bridge structures than traditional interchange types.

Where else are Diverging Diamond interchanges used?

The United States' first Diverging Diamond interchange opened to traffic in 2009 at the intersection of I-44 and MO 13 in Springfield, Missouri. Missouri DOT was able to build the interchange in about six months, while maintaining traffic at the location throughout construction. Since then, Diverging Diamond interchanges have been built or been considered in numerous other states, including North Carolina, where there are a dozen in operation, as of October 2017. Eight others are either in the planning phase or under construction in Alamance, Cabarrus, Johnston, Mecklenburg, Randolph and Wake counties.

Diverging Diamond Interchanges in North Carolina

- U.S. 17 at N.C. 133 in Leland
- I-26 at N.C. 280 in Asheville
- I-85 at Poplar Tent Road in Concord
- I-85 at N.C. 73 in Concord
- U.S. 52 at Salem Creek Connector in Winston-Salem
- I-40 at Union Cross Road in Kernersville
- I-73 at High Point Road in Greensboro
- U.S. 21 at I-40 in Statesville
- I-77 at Catawba Avenue in Cornelius
- I-485 at Mallard Creek Road in Charlotte
- U.S. 52 at Salem Creek Connector in Archdale
- I-95 at U.S. 301 in Lumberton