I-69 at SR 1/Dupont Road: Diverging Diamond Interchange
Original Interchange at I-69 at SR1/DuPont Rd
Research shows that compared to a normal diamond interchange, the DDI:
- Reduces intersection delay 15% - 60%
- Increases intersection through traffic 10% - 30%
- Increases intersection capacity 15% - 25%

Simple two phase signal operation
Increased capacity for the left-turning movements to/from the ramps.
Left-turn vehicles only go through one signal
Traffic is better spread out entering a freeway
Oversized loads can make left turns to freeway
U-turns from/to freeway are easier
DDI Advantages – Cost Savings

- The increased capacity and unique configuration of the DDI provides the potential to reduce the number of lanes on the crossroad, eliminating the need to widen the bridge.

- Small footprint of the DDI minimizes the right-of-way needed for the interchange compared to other traditional interchange types.
  - Within interchange area
  - On arterial approaches
DDI Disadvantages

- Not intended for heavy through movements, but can be accommodated.
- Can’t travel from off-ramp to on-ramp.
- Nearby intersections need modeled with interchange.
- DDI violates driver expectations by placing traffic left of center.

Myths:

- Not suitable for high-speed arterials.
- DDI’s are confusing to drive through.
How Traffic Flows

Signal Phases for DDI

Legend
- Blue: Signal Phase 1
- Red: Signal Phase 2
- Green: Continuous Free-Flow Movement
INDOT’S GOALS

21st Century, One INDOT Results

- On-time and On-budget
- Take Care of What We Have
- Customer Satisfaction
  - Improve internal and external customer satisfaction.
  - Take an outside in view to ensure the highest level of customer service.
Public Information

I-69 and SR 1/DuPont Road Diverging Diamond Interchange

An Educational Guide
PLAN AHEAD DURING CONSTRUCTION

Construction of a diverging diamond interchange at I-69 and Dupont Road is expected to start this month and continue through mid-November. Although both east- and westbound lanes will remain open during construction, delays — especially during peak hours — are anticipated. Drivers traveling to Dupont Hospital are encouraged to consider utilizing alternate routes, such as Auburn, Coldwater and Union Chapel roads.

For additional information, visit TheDupontDifference.com.
Construction on Dupont/ SR1 to begin April 14

Many of you cross I-69 on Dupont Road to travel to church services and activities. Many of you also follow this route to school and work. Please be aware that beginning this weekend, a work zone will be set up around the entire Dupont/SR1 interchange at I-69. Then on Monday, April 14, the speed limit will be reduced to 35 mph on SR 1/Dupont Road, from the Dupont Commerce Court entrance to Parkview Plaza. The northbound I-69 off ramp to Dupont Road will also be restricted.

- [You can read more about this project at the Indiana Department of Transportation.](https://www.in.gov/indot/)
- [You can also read a summary of the plans at the Journal Gazette.](https://www.journalgazette.com/)

CEDAR CREEK CHURCH

make friends. find family.
Design Considerations

- **Design Speed**
  - 25-40 mph
  - Design reverse curves to allow for 25 mph for through traffic

- **Crossover Geometrics**
  - 35-55 degrees
    - *The higher the better*
  - Curve Radii should be 150’ to 300’
  - Eyebrow (sight line)

- **Lane Width**
  - Width can vary from 12’ up to 18’
  - WB-67 typically needs 14’ lanes for side-by-side through movements to navigate the reverse curves

- **On-ramps**
  - Signalized Stop control to avoid crashes due to possible driver confusion.
Crossover Design

55 degrees, 15’ lanes
Crossover Design
Crossover Design
Design Challenges

- Pedestrian Protection/Concrete Railing vs. Sight Distance in Median
- Signal Design
- Maintenance of Traffic
Pedestrian Walkway and Railing
Pedestrian Walkway and Railing
Signal Head Placement

- 3-Head Signals on Mast Arm
- 3-Head Signal on Pedestal
Signal Head Placement
Signal Head Placement
2 Weekend Closures
Construction Issues

- Guardrail at Bridge corners
- Ornamental Railing
- Maintenance of Traffic
Plan View Model
Lessons Learned

Missouri’s Experience with a Diverging Diamond Interchange

Lessons Learned

Missouri DOT - 2010

DDI Guideline
A UDOT Guide to Diverging Diamond Interchanges

June 2014

Utah DOT - 2014
Judy Hampson

I drive over this twice a day, and it's a HUGE improvement over the previous configuration. Traffic flows much, much better. I love it!

November 5, 2014 at 12:26pm · Like · 2

Gary Pulis

I've driven this confusing piece of engineering crap. There will be fatal crashes here......many of them.

November 5, 2014 at 12:26pm · Like · 7