

Special consideration must be given in evaluating a DDI when the nearest full access intersection is less than the minimum distance shown in Appendix F. The DDI typically operates essentially as a two-phase signal with only one direction of travel on the cross route allowed through the interchange at a time. When there is a signalized intersection in close proximity to the DDI, it may not be possible to coordinate both directions of travel along the cross route with the adjacent signal resulting in one direction of travel queuing in the small space between the intersections. When considering a DDI with a signalized intersection close to the interchange functional area, other interchange types should also be considered.*

Traffic projections require additional attention when evaluating the use of a DDI in a closely spaced signal system. When this is the case, a sensitivity analysis should be performed. A sensitivity analysis evaluates how changes in the traffic projections affect the results of the operational analysis (LOS or capacity). The sensitivity analysis will show if the proposed improvements only work under a limited number of traffic conditions or if the proposed improvements are flexible enough to satisfy a variety of future traffic conditions.

At this time, it does not appear that closely spaced right-in, right-out access or left-in accesses pose a greater challenge for DDIs compared to other interchange types. When evaluating non-signalized access points, additional care should be given so the access does not interfere with the operations of the right turns either onto or off the ramps. Spacing between the two crossover intersections should be sufficient enough to accommodate the through queue for the design year. As a rule of thumb spacing between the crossovers should be a minimum of 800 ft. Maximum queues based on microsimulation modeling should be used to verify the spacing between two crossover intersections.

Pedestrians

There are two basic ways to accommodate pedestrians at a DDI. They can be placed in the middle of the cross route between the crossovers (Figure 2-21) or kept on the outside perimeter (Figure 2-22). This decision can influence the number of signals and the capacity of the interchange. If pedestrians are kept to the outside perimeter as shown in Figure 2-22, then they do not have the ability to cross from one side of the street to the other.

Pedestrian crossings for a DDI may involve crosswalks and signal pedestrian control features at the junctions of the interchange. Depending on the pedestrian network in the vicinity of the interchange, it may not be necessary to have pedestrian walkways on both sides. Since the crossover junctions in a DDI operate on a two-phase signal control, pedestrians are directed to cross the minor roadway in two stages. Adequate pedestrian refuge should be provided between all stages of the crossing. Depending on the configuration, pedestrians may have higher or lower numbers of controlled and uncontrolled crossing locations at a DDI as compared to a traditional diamond interchange.

* Added 7/14