

Displaced Left Turn (DLT) Intersections

Displaced Left Turn (DLT) intersections are crossover-type intersections that can be applied to high-volume signalized arterial intersections—especially those characterized by heavy left-turn volumes that conflict with heavy opposing through volumes.

Design Features

- Left-turning vehicular traffic crosses over to the other side of opposing through traffic at signalized intersections upstream of the main arterial intersection, which allows through movements and left turns to occur simultaneously at the main intersection.
- A pedestrian or bicyclist crossing the intersection will cross vehicle streams traveling in alternating directions.
- The DLT is designed primarily to minimize vehicular delay and promote “continuous flow,” which can lead to long cycle lengths with increased delay for pedestrians and bicyclists.
- Install overhead lighting to illuminate bikeway and pathway networks and in advance of all intersection crossings.

Benefits

- Most DLTs include channelizing features and medians to direct vehicle traffic. These also serve to provide refuge for pedestrians and bicyclists.
- If designed with pedestrians and bicyclists in mind, medians and raised channelization needed for vehicular separation can provide refuge and reduce the discomfort associated with longer crossings and the presence of higher speed traffic.
- Grade-separated pedestrian and bicyclist crossings may also be considered for DLT and other continuous flow intersection types.



All graphics source: FHWA



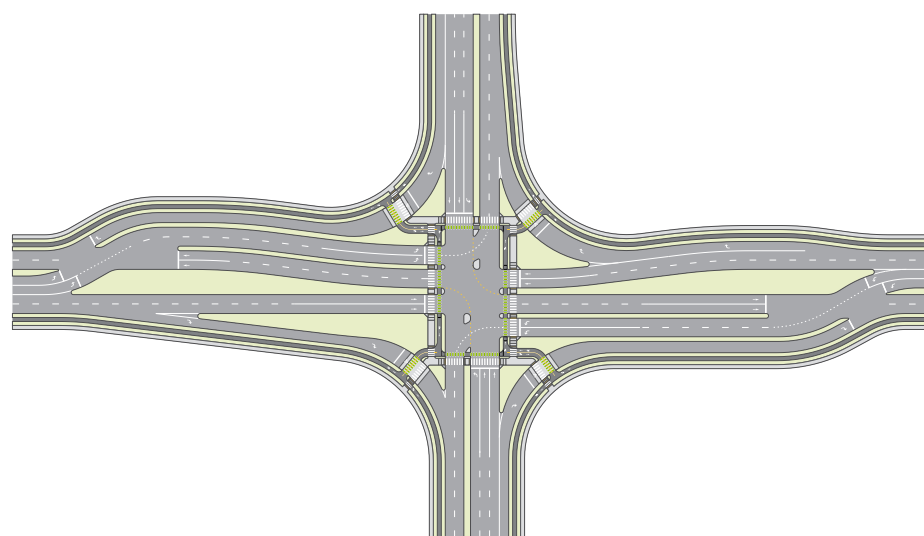
Intersection Types

SEPARATED BIKE LANE

This DLT design features separated bike lanes alongside sidewalks.

CONSIDERATIONS

- This design features channelized right turns, which provide refuge islands for pedestrians and bicyclists. High angle channelized right turns can encourage appropriate motor vehicle speeds, increased visibility, and driver yielding behavior.
- Raised crossings can be used at channelized right turns to encourage driver yielding and provide pedestrians and bicyclists with a continuous, accessible path of travel without grade changes.

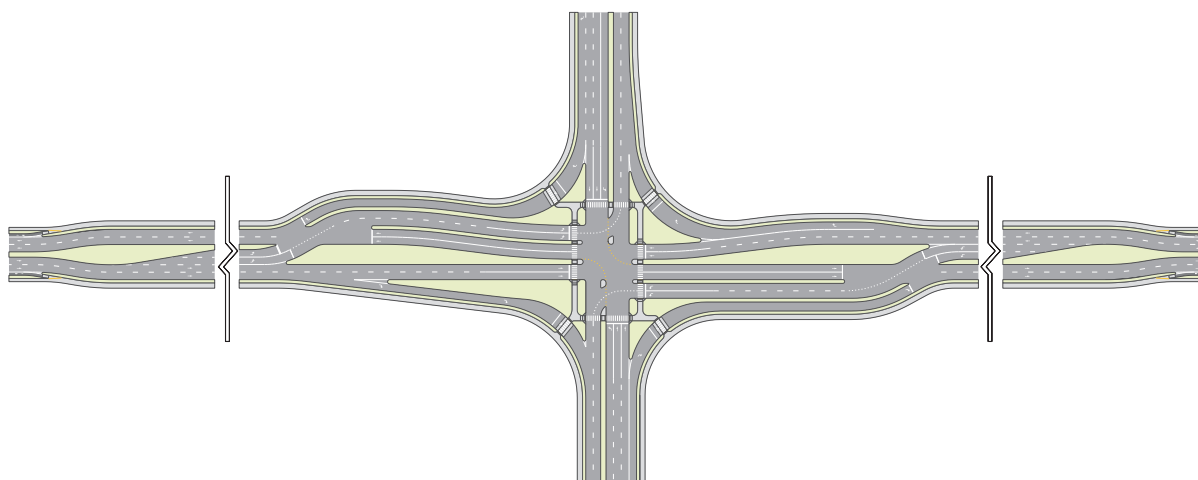


SIDEPATH

This design features upstream ramps to bring bicyclists out of the bike lane and up to a sidepath at sidewalk level. Both pedestrians and bicyclists then use this sidepath to travel through the intersection. Downstream of the intersection the bicyclists diverge to the bike lane using a similar ramp.

CONSIDERATIONS

- It is important to design the width of shared paths, crosswalks, medians, and queuing areas to accommodate groups of people of all abilities.
- Shared facilities may be appropriate even where only low volumes of bicyclists and pedestrians are expected to use the intersection under present and future conditions.



References

Steyn, H., Bugg, Z., Ray, B., Daleiden, A., Jenior, P., & Knudson, J. (2014). *Displaced Left Turn Informational Guide* [FHWA-SA-14-068]. Federal Highway Administration, Washington, DC. Retrieved from <https://safety.fhwa.dot.gov/intersection/crossover/fhwasa14068.pdf>.



For more information refer to *Improving Intersections for Pedestrians and Bicyclists Informational Guide* [FHWA-SA-22-017].