

Complex Intersections

- Complex intersections have multiple nodes that should be considered as belonging to a single intersection. This scenario most often occurs where there are divided highways, turn-lanes with raised medians, and slightly offset intersecting minor approaches.
- One of the nodes belonging to a complex intersection is designated as the Principal Node, and its NodeID determines the IntersectionID, which is shared by all of the nodes belonging to that complex intersection. The Principal Node should, when possible, be the “most important” node in the intersection. A node is generally more “important” if it:
 - Intersects a primary direction route rather than a secondary direction route (e.g west-bound and south-bound routes)
 - Intersects a main-line route rather than a slip ramp (or other turn lane separated by a raised median)
 - Intersects a minor route with greater AADT than other nodes intersecting other minor routes (in the case of offset intersections)
 - Intersects the Major route if there isn't a node that intersects both the Major and Minor routes
 - Intersects the Major NodeLeg if the Major_Leg and Major_Leg_2 intersect different nodes (Does this hold if the Major_Leg is the downstream leg along the route?)
- All NodeLegs belonging to the Nodes of a complex intersection also carry the same IntersectionID as their nodes. However, only a subset of the legs are designated as Principal NodeLegs.
 - The Principal NodeLegs should be exterior to an imaginary polygon encompassing all of the complex intersection's nodes, excluding all other nodes.
 - Only one leg per “approach direction” should be designated as a Principal NodeLeg, prioritizing legs representing main-line routes (e.g. not a slip-ramp or channelized turn lane), and in the case of dual carriageways, only the approach leg on each side of the intersection (as determined by direction of travel)
- If two minor routes intersect the major route at slightly offset locations (indicated by having separate nodes), the configuration is a complex intersection if the distance along the major route between the inside edges of the minor routes is less than 33 ft (see “Figure 5” below). The Principal Node should be chosen as the node intersecting the minor route approach with the greatest AADT. (Or more traveled approach in absence of AADT)
 - Exceptions to the 33 ft cutoff distance for complex intersections are one-way channel lanes, which are generally included within complex intersections even when distances are much greater than the 20' shown in “Figure 6” below.
- If signalized stop control encompasses multiple nodes that do not meet the above intersection requirements, those nodes should be considered as belonging a single intersection (are there exceptions to this?)

NOTES:

Currently, Intersection and approach generalized attribute values are attributed to the Principal features of Complex Intersections, potentially overwriting Node-specific values.

Eventually the Principal features of Complex Intersections will be extracted into a separate table so that there will be no ambiguity between Node-specific and Intersection-generalized attribute values.

Figure 5 – Intersection (See 2.5.10)

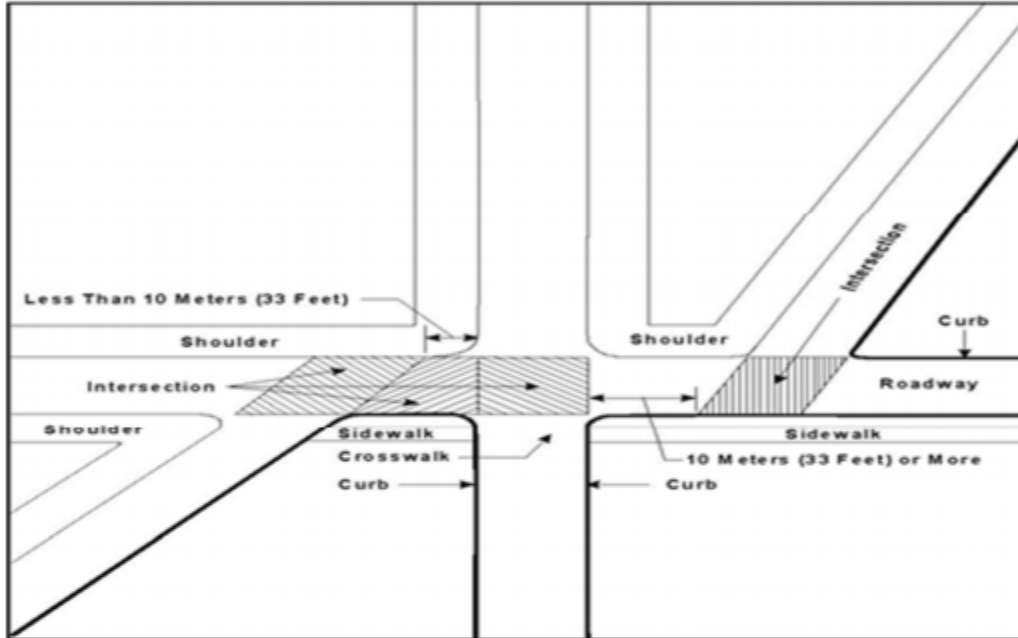


Figure 6 – Channelized Intersection (See 2.5.13)

