



## Traffic Signal Design Manual

ORIGINATOR Director, Bureau of Highway Operations		3-3-9
CHAPTER 3	Project Scoping Process & Geometric Design Considerations	
SECTION 3	Intersection Geometrics	
SUBJECT 9	Adjacent Access/Intersections	

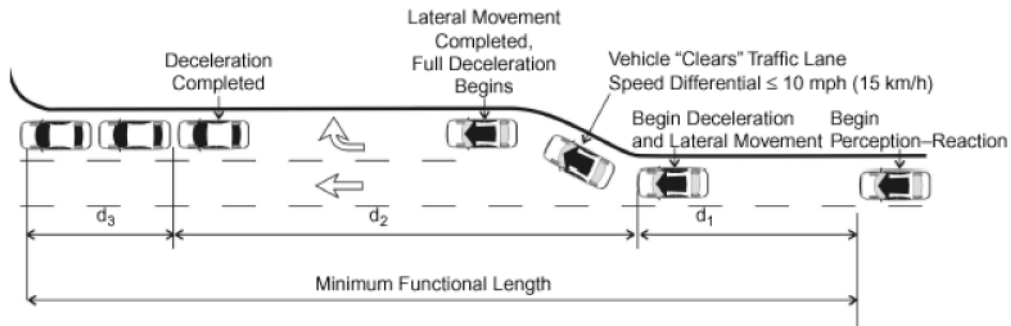
**\*THIS SECTION OFFERS INTERIM GUIDANCE ONLY\***

Access points located immediately near any intersection are generally problematic. Typically, vehicle turning movements at the intersection and the adjacent access further complicates driver decision making. This effect *may* cause safety problems. At a minimum, close access will affect operations.

Consideration *should* be given to the impacts of access points located immediately near signalized intersections. It *may* be necessary to close, move or restrict driveways so overall safety and operations can be effectively maintained at acceptable levels. In particular, the functional area of the intersection, as described below, *should* be considered relative to adjacent access. Typically, this functional area *should* include areas that experience routine queuing. Median openings in the intersection functional area *should* be avoided. According to FHWA's "Signalized Intersections: Informational Guide," (2004), the functional area has four parameters for which it is defined:

- Distance  $d1$ : Distance traveled during perception-reaction time as a driver approaches the intersection, assuming 1.5 seconds for urban and suburban conditions and 2.5 seconds for rural conditions.
- Distance  $d2$ : Deceleration distance while the driver maneuvers to a stop upstream of the intersection.
- Distance  $d3$ : Queue storage at the intersection.
- Distance immediately downstream of the intersection so that a driver can completely clear the intersection before needing to react to something downstream (stopping sight distance is often used for this).

Figure 1 illustrates the functional area distances. Refer to FDM Procedure 11-25-1 for additional information for determining the intersection distances for WisDOT projects.



**Figure 1**  
Elements of upstream functional intersection area

The Regional Access Management Coordinator *should* be consulted prior to making changes to access points. Guidance regarding access management concepts *may* be found in the *Traffic Impact Analysis (TIA) Guidelines Manual*, *Highway Access Management Reference Guide*, Administrative Rules Trans 233 and Trans 231, *State Highway Maintenance Manual* Chapter 91, *Facilities Development Manual* Chapters 7 and 11, *TRB Access Management Manual*, and NCHRP Report 348 *Access Management Guidelines for Activity Centers*.

Detection for signalized intersections *should* be placed—such that vehicles entering or exiting adjacent driveways do not activate loops and subsequently interfere with signal operations.