All Way Stop Warrant Analysis

Intersection: RESERVE LANE AND SIERRA ROSE CIRCLE

	Approach to Intersection					
	RESERVE LANE		SIERRA ROSE CIRCLE			
TIME	**NB**	**SB**	**EB**	**WB**	**NB + SB**	**EB + WB**
3/11/2025						
12:00 PM	13	5		1	18	1
1:00 PM	5	5		2	10	2
2:00 PM	10	3		0	13	0
3:00 PM	16	17		2	33	2
4:00 PM	9	10		0	19	0
5:00 PM	11	5		0	16	0
6:00 PM	5	7		0	12	0
7:00 PM	5	8		1	13	1
8:00 PM	2	5		2	7	2
9:00 PM	2	6		1	8	1
10:00 PM	1	1		0	2	0
11:00 PM	0	1		0	1	0
12:00 AM	0	0		0	0	0
1:00 AM	0	0		0	0	0
2:00 AM	2	0		1	2	1
3:00 AM	0	0		0	0	0
4:00 AM	2	0		0	2	0
5:00 AM	0	0		0	0	0
6:00 AM	7	2		0	9	0
7:00 AM	13	8		5	21	5
8:00 AM	9	3		3	12	3
9:00 AM	13	5		3	18	3
10:00 AM	4	3		2	7	2
11:00 AM	6	4		0	10	0
3/12/2025						
12:00 AM	12	7		5	19	5
1:00 AM	8	8		2	16	2
2:00 AM	12	9		2	21	2
3:00 AM	9	8		3	17	3
4:00 AM	11	5		3	16	3
5:00 AM	3	10		5	13	5
6:00 AM	8	10		2	18	2
7:00 AM	4	4		1	8	1
8:00 AM	10	5		1	15	1
9:00 AM	5	3		0	8	0
10:00 AM	0	1		2	1	2
11:00 AM	2	1		0	3	0
					>300?	>200?
					YES	NO
TOTALS	**219**	**169**		**49**		

SUMMARY:

	ADT
RESERVE LANE	194
SIERRA ROSE CIRCLE	25

SIGNING FOR RIGHT-OF-WAY AT INTERSECTIONS

Section 2B.06 General Considerations

Support:

01 Unsignalized intersections represent the most common form of intersection right-of-way control. Selection of control type might be impacted by specific requirements of State law or local ordinances.

02 Roundabouts and traffic circles are circular intersection designs and are not traffic control devices. The decision to convert an intersection from a conventional intersection to a circular intersection is an engineering design decision and not a traffic control device decision. As such, criteria for conversion from a conventional intersection to a circular intersection are not included in the MUTCD.

Guidance:

03 *The type of traffic control used at an unsignalized intersection should be the least restrictive that provides appropriate levels of safety and efficiency for all road users.*

Support:

04 Some types of right-of-way control that can exist at an unsignalized intersection in order from the least restrictive to the most restrictive are the following:

A. No intersection control (see Section 2B.09): There are no right-of-way traffic control devices on any of the approaches to the intersection.
B. Yield control (see Section 2B.10): YIELD signs are placed on all approaches (for a circular intersection), on opposing approaches for a four-leg intersection, on a single approach for a three-leg intersection, or in the median of a divided highway. The YIELD signs are placed on the minor road.
C. Minor road stop control (see Section 2B.11): STOP signs are typically placed on opposing approaches (for a four-leg intersection) or on a single approach (for a three-leg intersection). The STOP signs are normally placed on the minor road. Section 2B.07 contains guidance on selecting the minor road.
D. All-way stop control (see Section 2B.12): STOP signs are placed on all approaches to the intersection.

Guidance:

05 *When selecting a form of intersection control, the following factors should be considered:*

A. Motor vehicle, bicycle, and pedestrian traffic volumes on all approaches; where the term units/day or units/hour is indicated, it should be the total of motor vehicle, bicycle, and pedestrian volume;
B. Driver yielding behavior with regard to all modes of conflicting traffic, including bicyclists and pedestrians;
C. Number and angle of approaches;
D. Approach speeds;
E. Sight distance available on each approach;
F. Reported crash experience; and
G. The presence of a grade crossing near the intersection.

Standard:

06 **YIELD or STOP signs shall not be used for speed control.**

Support:

07 Appropriate traffic calming or other speed control measures are available to control vehicle speeds, such as those that do not have the potential to diminish the effectiveness of traffic control devices when used for their specified purpose.

Standard:

08 **Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation, except in the following cases:**

A. If the signal indication for an approach is a flashing red at all times;
B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or
C. If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.

09 **STOP signs and YIELD signs shall not be installed on different approaches to the same unsignalized intersection if those approaches conflict with or oppose each other, except as provided for in Items A and B in Paragraph 3 of Section 2B.10.**

10 **Portable or part-time STOP or YIELD signs shall not be used except for emergency and temporary traffic control zone purposes.**

Guidance:

04 *The YIELD signs should be installed on opposing minor-street approaches (for a four-leg intersection) or on the minor-street approach (for a three-leg intersection). When two intersecting roadways have relatively equal volumes, speeds, and other characteristics, yield control should be installed on the approach that conflicts the most with established pedestrian crossing activity, school walking routes, or bicycle crossing activity.*

Standard:

05 **A YIELD sign shall be used to require road users to yield the right-of-way to other traffic at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.**

06 **YIELD signs shall not be placed on all of the approaches to an intersection, except at roundabouts.**

Section 2B.11 Minor Road Stop Control

Guidance:

01 *Stop control on the minor-road approach or approaches to an intersection should be considered when engineering judgment indicates that one or more of the following conditions exist:*

- *A. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway.*
- *B. Crash records indicate that:*
  - *1. For a four-leg intersection, there are three or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period. The crashes should be susceptible to correction by installation of minor-road stop control.*
  - *2. For a three-leg intersection, there are three or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period. The crashes should be susceptible to correction by installation of minor-road stop control.*
- *C. The intersection is of a lower functional classification road with a higher functional classification road.*
- *D. Conditions that previously supported the installation of all-way stop control no longer exist.*

02 *On low-volume rural roads, a STOP sign should be considered at an intersection where engineering judgment indicates that Item C in Paragraph 1 of this Section is applicable or where the intersection has inadequate sight distance for the operating vehicle speeds.*

Section 2B.12 All-Way Stop Control

Support:

01 The provisions in the following sections describe warrants for the recommended engineering study to determine all-way stop control. Warrants are not a substitute for engineering judgment. The fact that a warrant for a particular traffic control device is met is not conclusive justification to install or not install all-way stop control. Because each intersection will have unique characteristics that affect its operational performance or safety, it is the engineering study for a given intersection that is ultimately the basis for a decision to install or not install all-way stop control.

02 All-way stop controls at intersections with substantially differing approach volumes can reduce the effectiveness of these devices for all roadway users.

Guidance:

03 *The decision to establish all-way stop control at an unsignalized intersection should be based on an engineering study. The engineering study for all-way stop control should include an analysis of factors related to the existing operation and safety at the intersection, the potential to improve these conditions, and the applicable factors contained in the following all-way stop control warrants:*

- *A. All-Way Stop Control Warrant A: Crash Experience (see Section 2B.13)*
- *B. All-Way Stop Control Warrant B: Sight Distance (see Section 2B.14)*
- *C. All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection (see Section 2B.15)*
- *D. All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles) (see Section 2B.16)*
- *E. All-Way Stop Control Warrant E: Other Factors (see Section 2B.17)*

Option:

04 The decision to install all-way stop control on site roadways open to public travel may be based on engineering judgment.

Standard:

05 **The satisfaction of an all-way stop control warrant or warrants shall not in itself require the installation of all-way stop control at an unsignalized intersection.**

Section 2B.13 All-Way Stop Control Warrant A: Crash Experience

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that:

A. For a four-leg intersection, there are five or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.
B. For a three-leg intersection, there are four or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.

Section 2B.14 All-Way Stop Control Warrant B: Sight Distance

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that sight distance on the minor-road approaches controlled by a STOP sign is not adequate for a vehicle to turn onto or cross the major (uncontrolled) road.

Support:

02 At such a location, a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop.

Section 2B.15 All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection

Option:

01 All-way stop control may be installed at locations where all-way stop control is an interim measure that can be installed to control traffic while arrangements are being made for the installation of a traffic control signal (see Chapter 4C) at the intersection or for the installation of yield control at a circular intersection.

Section 2B.16 All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles)

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates:

A. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the major-street approaches is at least 300 units per hour for each of any 8 hours of a typical day; and
B. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the minor-street approaches is at least 200 units per hour for each of any of the same 8 hours.

02 If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants may be reduced to 70 percent of the values given in Items A and B in Paragraph 1 of this Section.

Section 2B.17 All-Way Stop Control Warrant E: Other Factors

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that all-way stop control is needed due to other factors not addressed in the other all-way stop control warrants. Such other factors may include, but are not limited to, the following:

A. The need to control left-turn conflicts,
B. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection, or
C. Where pedestrian and/or bicyclist movements support the installation of all-way stop control.

Section 2B.18 STOP Sign or YIELD Sign Placement

Standard:

01 **The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.35) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.35) shall be installed in advance of the YIELD sign.**

02 **The STOP or YIELD sign shall be located as close as practicable to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.**

03 **STOP signs and YIELD signs shall not be mounted on the same post.**