

Section 4C.05 Warrant 4, Pedestrian Volume

Support:

The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

Standard:

The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that both of the following criteria are met:

- A. The pedestrian volume crossing the major street at an intersection or midblock location during an average day is 100 or more for each of any 4 hours or 190 or more during any 1 hour; and**
- B. There are fewer than 60 gaps per hour in the traffic stream of adequate length to allow pedestrians to cross during the same period when the pedestrian volume criterion is satisfied. Where there is a divided street having a median of sufficient width for pedestrians to wait, the requirement applies separately to each direction of vehicular traffic.**

The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 90 m (300 ft), unless the proposed traffic control signal will not restrict the progressive movement of traffic.

If this warrant is met and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads conforming to requirements set forth in Chapter 4E.

Guidance:

If this warrant is met and a traffic control signal is justified by an engineering study, then:

- A. If at an intersection, the traffic control signal should be traffic-actuated and should include pedestrian detectors.
- B. If at a nonintersection crossing, the traffic control signal should be pedestrian-actuated, parking and other sight obstructions should be prohibited for at least 30 m (100 ft) in advance of and at least 6.1 m (20 ft) beyond the crosswalk, and the installation should include suitable standard signs and pavement markings.
- C. Furthermore, if installed within a signal system, the traffic control signal should be coordinated.

Option:

The criterion for the pedestrian volume crossing the major roadway may be reduced as much as 50 percent if the average crossing speed of pedestrians is less than 1.2 m/sec (4 ft/sec).

A traffic control signal may not be needed at the study location if adjacent coordinated traffic control signals consistently provide gaps of adequate length for pedestrians to cross the street, even if the rate of gap occurrence is less than one per minute.



City of Lawrence, Kansas
Traffic Engineering Division
Traffic Signal Warrant Worksheet



Location: Arrowhead Drive & Peterson Road

Date: 19-20 August 2008

Time Period	Peterson Road									Arrowhead Drive									Grand Total	Warrant Met				
	EB			EB		WB			WB	Total		NB			NB		SB				SB	#1a	#1b	
12-01	8			8		53			53	61		1			1		2			2	64			
01-02	6			6		21			21	27		0			0		2			2	29			
02-03	3			3		8			8	11		1			1		0			0	12			
03-04	6			6		11			11	17		0			0		5			5	22			
04-05	11			11		1			1	12		0			0		5			5	17			
05-06	41			41		15			15	56		5			5		20			20	81			
06-07	111			111		49			49	160		8			8		52			52	220			
07-08	204			204		152			152	356		19			19		139			139	514	1		
08-09	144			144		130			130	274		12			12		68			68	354			
09-10	104			104		78			78	182		2			2		25			25	209			
10-11	96			96		100			100	196		10			10		36			36	242			
11-12	116			116		112			112	228		14			14		60			60	302			
12-01	146			146		141			141	287		8			8		30			30	325			
01-02	159			159		135			135	294		22			22		38			38	354			
02-03	121			121		128			128	249		7			7		41			41	297			
03-04	156			156		189			189	345		35			35		42			42	422			
04-05	145			145		216			216	361		22			22		48			48	431			
05-06	158			158		294			294	452		38			38		63			63	553			
06-07	130			130		172			172	302		27			27		68			68	397			
07-08	81			81		135			135	216		21			21		30			30	267			
08-09	99			99		115			115	214		16			16		35			35	265			
09-10	79			79		104			104	183		4			4		18			18	205			
10-11	67			67		57			57	124		8			8		7			7	139			
11-12	34			34		39			39	73		2			2		4			4	79			
Totals	0	2225	0	0	2225	0	2455	0	0	2455	4680	0	282	0	0	282	0	838	0	0	838	5800	1	0

The Manual on Uniform Traffic Control Devices Minimum Volume Requirements for 8 hours:

Warrant #1a: Main Street -- 350 Minor Street -- 105

Warrant #1b: Main Street -- 525 Minor Street -- 53

Speed Limit on Peterson Road = 40 mph

- no Warrant #7, Crash Experience, met
- no Warrant #2, Four Hour Volume, met
- no Warrant #3, Peak Hour Volume, met