

WARRANTS FOR INTERSECTION LIGHTING

LOCATION CHARACTERISTICS		This spreadsheet, to be used in conjunction with Transportation Association of Canada 2006 "Guide for the Design of Roadways", Ch. 10 "Intersections". (This Spreadsheet is derived from Figure 10-2)		
Area:	CKL	Please enter information in the cells with yellow background		

Intersection		Notes		Site Details	
Main Road:	Cedar Glen Rd	Based on August 2022 traffic count		Posted Speed (km/h):	Unposted
Minor Road:	Creek Side (Private Rd)			Date (dd/mm/yyyy):	8/5/2022

Item No.	Classification	Rating Factor (R)					Weight Subcategory (If Applicable)	Weight (W)	Rating (R)	Score (R x W)
GEOMETRIC FACTORS		0	1	2	3	4				
1	Channelization	None	Right and/or Left Turn Lanes on Minor Approach Only	Right Turn Lane(s) Only on Major Leg(s)	Left Turn lane(s) on Major Leg(s)	Left and Right Turn Lanes on All Legs	Raised and Operating Speed Less than 70 km/h on at Least One Channelized Approach or	15.00		0.00
							Raised and Operating Speed Less than 70 km/h or More on at Least One Channelized Approach	25.00		0.00
							Painted Only	5.00	0	0.00
2	Approach Sight Distance on the Most Constrained Approach (Relative to Recommended Minimum Intersection Sight Distance)	100% or More	75% to 99%	50% to 74%	25% to 49%	< 25%		10.00	0	0.00
3	Horizontal Curvature (Radius) at or Immediately Before Intersection on Any Leg for Posted Speed limit of:	110 km/hr:	Tangent	>1800m	1150 to 1800m	750 to 1150m	<750m	5.00	0	0.00
		90 or 100 km/h:	Tangent	>1400m	950 to 1400m	600 to 950m	<600m			
		70 or 80 km/h:	Tangent	>950m	550 to 950m	340 to 550m	<340m			
		60 km/h:	Tangent	>575m	320 to 575m	190 to 320m	<190m			
4	Angle of Intersection or Offset Intersection	90 Degree Angle	80 or 100 Degree Angle	—	70 or 110 Degree Angle	<70 or >110 Degree or Offset Intersection		5.00	0	0.00
5	Downhill Approach Grades at or Immediately Before Intersection on Any Leg	<3.0%	3.1 to 3.9% and Meets Design Guidelines for Type and Speed of Road	4.0 to 4.9% and Meets Design Guidelines for Type and Speed of Road	5.0 to 7.0% and Meets Design Guidelines for Type and Speed of Road	>7.0% OR Exceeds Maximum Gradient for Type and Speed of Road		3.00	0	0.00
6	Number of Legs	—	3	4	5	6 or More		3.00	1	3.00
Geometric Factors Subtotal:									3.00	

OPERATIONAL FACTORS										
If the Intersection is Signalized, Illumination is Warranted										
If the Intersection is NOT Signalized, Points should be Calculated on the Basis of EITHER the AADT or the Signalization Warrant Factor										
7	Either AADT(2-Way) (see note 1)									
	On Major Road AND on Minor Road	<1000	1000 to 2000	2000 to 3000	3000 to 5000	>5000		10.00	0	0.00
	OR	<500	500 to 1000	1000 to 1500	1500 to 2000	>2000		20.00	1	20.00
	Signalization Warrant (see note 1)	Intersection Not Signalized and Volume-Based Signal Warrant is Less than 20% Satisfied	Intersection Not Signalized and Volume-Based Signal Warrant is Less than 20% to 40% Satisfied	Intersection Not Signalized and Volume-Based Signal Warrant is Less than 40% to 60% Satisfied	Intersection Not Signalized and Volume-Based Signal Warrant is Less than 60% to 80% Satisfied	Intersection Not Signalized and Volume-Based Signal Warrant is Less than Over 80% Satisfied		30.00		0.00
8	Regular Nighttime Hourly Pedestrian Volume (see note 2)	No Pedestrians	Up to 10	10 to 30	30 to 50	Over 50		10.00	0	0.00
9	Intersection Roadway Classifications	No Primary Road Involved	Primary/Rural Major, Primary Rural Minor, or Primary/Designated Community Access	Primary/Secondary	Primary/Primary	Intersection Includes Divided Highway		5.00	0	0.00
10	Operating Speed or Posted Speed limit on Minor Road (see note 3)	50 km/h or Less	60 km/h	70 km/h	80 km/h	90 km/h or Over		5.00	3	15.00
11	Operating Speed or Posted Speed limit on Minor Road (see note 3)	50 km/h or Less	60 km/h	70 km/h	80 km/h	90 km/h or Over		5.00	0	0.00
Operational Factors Subtotal:									35.00	

ENVIRONMENTAL FACTORS										
12	Lighted Development Within 150m Radius of Intersection	—	In One Quadrant	In Two Quadrant	In Three Quadrant	In Four Quadrant		5.00	1	5.00
Environmental Factors Subtotal:									5.00	

COLLISION FACTORS									
13	Average Annual Nighttime Collision Frequency (see note 4) or Rate over Last Three Year (Only Collisions Potentially Attributable to Inadequate Lighting)	0 Collisions per Year	1 Collision Per Year	—	3 or More Collisions Per Year OR at Least 1.5 Collisions per Million Entering Vehicles per Year and an Average Ratio of Ann Night-to-day Collisions of at Least 1.5.	1 or 2 Collisions per Year	15.00	0	0.00
						3 or More Collisions per Year or Rate >= 1.5 Collisions/MEV	30.00		0.00
Collision Factors Subtotal:									0.00
Total Warrant Pts (all factors): * (see note 5)									43.00

1 If the intersection is not signalized, the user should choose EITHER the AADT factor OR the signalization factor. The points from either factor, but not both factors, may be used for the warrant point calculations.

2 The number of certain types of vulnerable pedestrians should be factored to reflect their increased need for visibility. The number of child pedestrians (ages 12 and under) should be multiplied by two, and the number of senior pedestrians (age 65 and over) should be multiplied by 1.5.

3 85th percentile nighttime speed should be used, if available. Otherwise the posted speed may be used.

4 Reported collisions, rounded to the nearest whole number.

5 A min score of 240 warrants full illumination, a min score of 120 warrants partial or delineation lighting, refer to TAC guidelines to see how score distribution affects lighting type