

Appendix I – Lighting Warrants

Updated: February 13, 2023

(Fillable Forms will be provided by the Project Manager)

Intersection Roadway Lighting Warrant (adapted from TAC, 2000)

Intersection:
Municipality:

Geometric Factors								
Classification Factor	Rating					Weight		Score Weight x Ratings
	0	1	2	3	4			
Channelization	none	left turn lanes on major legs	left turn lanes on all legs, right turn lanes on major legs	left and right turn lanes on major legs	left and right turn lanes on all legs	raised & operating speed less than 60 km/hr on at least one channelized approach OR	15	
						raised & operating speed less than 60 km/hr on at least one channelized approach OR	20	
						painted only	5	
Approach sight distance on the most constrained approach (relative to recommended minimum SSD or intersection sight distance)	100% +	75% - 99%	50% - 74%	25% - 49%	< 25%	at unsignalized intersection	10	
						at signalized intersection	5	
Horizontal curvature (in degrees & radius) at or immediately before intersection on any leg	< 3.0° (580 m)	3.0° - 6.0° (290 m - 579 m)	6.1° - 8.0° (220 m - 289 m)	8.1° - 10.0° (175 m - 219 m)	>10.0° (175m) OR exceeds maximum curvature for the speed & superelevation of road	10		
Angle of intersection OR offset intersection	90° angle	80° or 100° angle	~~	70° or 100° angle	<70° or >100° OR offset intersection	5		
Downhill approach grades at or immediately before intersection on any leg	< 3.0°	3.1° - 3.9° & meets design guidelines for type & speed of road	4.0° - 4.9° & meets design guidelines for type & speed of road	5.0° - 7.0° & meets design guidelines for type & speed of road	< 7.0° OR exceeds maximum gradient for the type & speed of road	3		
Number of legs	3	4	5	6 or more	~~	3		
Number of approach lanes	~~	~~	~~	~~	> 1 lane required to stop or yield on any approach	2		
SUBTOTAL (Geometric Factors)								0

Intersection Roadway Lighting Warrant (adapted from TAC, 2000)

Intersection:
Municipality:

Operational Factors							
Classification Factor	Rating					Weight	Score Weight x Ratings
	0	1	2	3	4		
signalized intersection	Mandatory factor (75 points)					75	
Four way flasher	None	~~	~~	~~	Four way flasher present	5	
Stop control	No control	One stop sign	Two stop signs	~~	All way stop	10	
Intersecting roadway classifications	Regional Road with non-Regional Road	~~	~~	~~	Regional Road with Regional Road	5	
Operating speed on major road	40 km/hr or less	50 km/hr	55 km/hr	65 km/hr	70 km/hr or over	2	
Operating speed on minor road	41 km/hr or less	50 km/hr	55 km/hr	65 km/hr	71 km/hr or over	2	

Intersection Roadway Lighting Warrant (adapted from TAC, 2000)

Intersection:
Municipality:

Environmental Factors & Collision History							
Classification Factor	Rating					Weight	Score Weight x Ratings
	0	1	2	3	4		
Environmental Factors							
Adjacent lit section	Mandatory factor (75 points)					75	
Lighted development within 150m of intersection	~ ~	in one quadrant	in two quadrant	in three quadrant	in four quadrant	5	
SUBTOTAL (Environmental Factors)							0
Collision Factors							
Average annual night-time collision frequency OR rate over the last three years (only collisions attributed to lighting)	no recorded night time collisions	1 collision per year OR	2 collisions per year OR	~ ~	3 or more collisions per year OR at least 1.5 collisions per million entering vehicles per yr & average ratio of night to day collision of at least 1.5	1 or 2 collisions per year	15
						3 or more collisions per year OR rate ≥ 1.5 collisions/MEV	25
SUBTOTAL (Collision History)							0
Intersection Name:							

Total Points ≥ 200
75 < Total Points < 200
Total Points ≤ 75

Full Lighting warranted
Partial lighting warranted at key decision are, potential conflict points, and/or hazards
Lighting not warranted

Midblock Roadway Lighting Warrant (adapted from MTO Draft Directive 2000)

Municipality:

Midblock:

Geometric Factors						Weight	Score Weight x Ratings
Classification Factor	Rating						
	0	1	2	3	4		
Number of lanes	Two	~~~	Three	Four	Five	Centre turning lane not present - 10	
						If centre turning lane present - 100	
Lane Drop	Two lanes are merged into one lane					75	
Lane Width	> 3.50 metres	3.50 metres	3.25 metres	3.0 metres	< 3.0 metres	2	
Max horizontal curvature (in degrees & radius) along any portion of the road sement	<3.0° (580 m)	3.0° - 6.0° (290m - 579m)	6.1° - 8.0° (220m - 289m)	8.1° - 10.0° (175m - 219m)	> 10.0° (175m) or exceeds Max curvature for the speed & superelevation of road	10	
Max downhill approach grades at or immediately before intersection on any leg	<3.0°	3.1° - 3.9° and meets design guidelines for type & speed of road	4.0° - 4.9° and meets design guidelines for type & speed of road	5.0° - 7.0° and meets design guidelines for type & speed of road	> 7.0° or exceeds Max gradient for the type & speed of road	10	
Sight Distance	> 210 metres	151 - 210 metres	91 - 150 metres	60 - 90 metres	< 60 metres	1	
Median Width (m)	>15.0 m or barrier	~~~	10.0 - 15.0 metres	~~~	< 10.0 metres	1	
Bike Lanes	No bike path	~~~	~~~	~~~	Bike path provided	2	
Crosswalk	No crosswalk	~~~	Painted crosswalk	~~~	Painted crosswalk w/flasher	2	
Sidewalks	No sidewalks	>5.0 m from road	1.0-5.0m from road	~~~	sidewalk abutting road		

Midblock Roadway Lighting Warrant (adapted from MTO Draft Directive 2000)

Municipality:

Midblock:

Operational Factors

Classification Factor	Rating					Weight	Score Weight x Ratings
	0	1	2	3	4		
Level of Service (any dark hour)	A	B	C	D	E,F	5	
Median Openings or Driveway Entrance Per Km	> 3.0	3.0 - 5.0	5.1 - 8.0	8.1 - 10.0	> 10.0	5	
Operating Speed	< 50	60	70	80	> 80	5	
Parking	Parking Prohibited	Loading Zones Only	Off-peak Only	Permitted one side	Permitted both sides	2	
Pedestrian Traffic at Night (peds/km)	0 - 10	11 - 30	31 - 60	61 - 100	> 100	2	
SUBTOTAL (Operational Factors)							0

Environmental Factors

Classification Factor	Rating					Weight	Score Weight x Ratings
	0	1	2	3	4		
Adjacent road sections	> 2.0 Klm apart	~~~	500m - 2.0 Klm apart	~~~	< 500 m apart	50	
Type of land use	Undeveloped	Agricultural	Residential	Industrial Commercial	Strip Mall development	4	
Lighted development	No lighted development	0 - 40%	41 - 60%	61 - 80%	Essentially continuous	4	
Railroad Tracks	No railroad Tracks	~~~	Raidroad tracks with Flashing crossbars	~~~	Raidroad tracks with flashing crossbars & gates	if single tracks - 10	
						if multiple tracks - 20	
Overpass & Tunnels	<25m & no sidewalks provided	<25m & sidewalk provided	>25m & sidewalk provided	~~~~	> 125 m	25	
Bridges						5	
SUBTOTAL (Environmental Factors)							0

Midblock Roadway Lighting Warrant (adapted from MTO Draft Directive 2000)

Municipality:

Midblock:

Collision History							
Classification Factor	Rating					Weight	Score Weight x Ratings
	0	1	2	3	4		
Average annual night-time collision frequency or rate over the last three years (only collisions attributed to lighting)	No recorded night-time collisions	1 collision per year/km or	2 collisions per year/km or	~~~	3 or more collisions per year/km or at least 1.5 collisions per million vehicles per year & average ratio of night to day collision of at least 1.5	1 or 2 collisions per year/km	30
						3 or more collisions per year/km or rate ≥ 1.5 collision/MEV	50
SUBTOTAL (Collision History)							

Warranting Condition:

- Total Points ≥ 200
- 75 < Total Points < 200
- Total Points ≤ 75

- Full Lighting warranted
- Partial lighting warranted at key decision are, potential conflict points, and/or hazards
- Lighting not warranted