



MINIMUM WARRANTS FOR INSTALLATION OF TRAFFIC SIGNALS USING PROJECTED VOLUMES*

Project: Barett Lands Community Transportation Study

Date: 2013-08-26

Project # 34731

Location Leitrim Road
(Roadway)

at Kelly Farm Drive
(Intersecting Roadway)

Municipality City of Ottawa

Projected Volume Future (2025) Total Traffic

Peak Hour AM Peak Hour

WARRANT	DESCRIPTION	MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS				COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL		ENTIRE %
						Number	%	
1. VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	720	1080	655	91%	56%
	B. Vehicle volume along minor roads (Average Hour)	120	170	270	383	150	56%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	720	1080	505	70%	70%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	75	113	69	92%	

Projected Traffic Volumes:

Approach Volume Input (vph)			
Artery V1	Artery V2	Minor V3	Minor V4
573	437	300	0

Notes and Adjustment Factors:

- Vehicle volume warrants (1A) and (2A) for intersections of roadways having two or more moving lanes in one direction should be 25% higher than the values given above.
- Warrant values for free flow apply when the 85th percentile speed of artery traffic equals or exceeds 70 km/h or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000.
- Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.
- The lowest sectional percentage governs the entire warrant.
- For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).
- All flow values for Warrant 1 and Warrant 2 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.
- The crossing volumes are defined as:
 - Left-turns from both minor road approaches.
 - The heaviest through volume from the minor road.
 - 50% of the heavier left turn movement from major road when both of the following are met:
 - the left-turn volume >120 vph
 - the left-turn volume plus the opposing volume >720 vph
 - Pedestrians crossing the main road.

Adj. Factors
1
1.5
1.5
0

CONCLUSION: The intersection **does NOT** meet the minimum warrants for traffic control signals.

* Ontario Traffic Manual, Book 12, 2007, Ontario Ministry of Transportation.



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		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL		ENTIRE %
						Number	%	
1. VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	720	1080	755	105%	34%
	B. Vehicle volume along minor roads (Average Hour)	120	170	270	383	92	34%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	720	1080	664	92%	58%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	75	113	44	58%	

Projected Traffic Volumes:

Approach Volume Input (vph)			
Artery V1	Artery V2	Minor V3	Minor V4
615	712	183	0

Notes and Adjustment Factors:

- Vehicle volume warrants (1A) and (2A) for intersections of roadways having two or more moving lanes in one direction should be 25% higher than the values given above.
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- Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.
- The lowest sectional percentage governs the entire warrant.
- For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).
- All flow values for Warrant 1 and Warrant 2 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.
- The crossing volumes are defined as:
 - Left-turns from both minor road approaches.
 - The heaviest through volume from the minor road.

© 50% of the heavier left turn movement from major road when both of the following are met:

 - the left-turn volume >120 vph
 - the left-turn volume plus the opposing volume >720 vph
 - Pedestrians crossing the main road.

Adj. Factors
1
1.5
1.5
0

CONCLUSION: The intersection does NOT meet the minimum warrants for traffic control signals.

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MINIMUM WARRANTS FOR INSTALLATION OF TRAFFIC SIGNALS USING PROJECTED VOLUMES¹

Project: Barett Lands Community Transportation Study

Date: 2013-08-26

Project # 34731

Location Street 1
(Roadway)

at Kelly Farm Drive
(Intersecting Roadway)

Municipality City of Ottawa

Projected Volume Future (2025) Total Traffic

Peak Hour AM Peak Hour

WARRANT	DESCRIPTION	MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS				COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL		ENTIRE %
						Number	%	
1. VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	720	1080	185	17%	15%
	B. Vehicle volume along minor roads (Average Hour)	120	170	270	383	57	15%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	720	1080	129	12%	2%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	75	113	3	2%	

Projected Traffic Volumes:

Approach Volume Input (vph)			
Artery V1	Artery V2	Minor V3	Minor V4
63	194	113	0

Notes and Adjustment Factors:

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2. Warrant values for free flow apply when the 85th percentile speed of artery traffic equals or exceeds 70 km/h or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000.

3. Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.

4. The lowest sectional percentage governs the entire warrant.

5. For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).

6. All flow values for Warrant 1 and Warrant 2 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.

7. The crossing volumes are defined as:

(a) Left-turns from both minor road approaches.

(b) The heaviest through volume from the minor road.

© 50% of the heavier left turn movement from major road when both of the following are met:

(i) the left-turn volume >120 vph

(ii) the left-turn volume plus the opposing volume >720 vph

(d) Pedestrians crossing the main road.

Adj. Factors
1
1.5
1.5
0

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						Number	%	
1. VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	720	1080	192	18%	8%
	B. Vehicle volume along minor roads (Average Hour)	120	170	270	383	33	8%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	720	1080	160	15%	1%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	75	113	2	1%	

Projected Traffic Volumes:

Approach Volume Input (vph)			
Artery V1	Artery V2	Minor V3	Minor V4
193	126	65	0

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© 50% of the heavier left turn movement from major road when both of the following are met:

 - the left-turn volume >120 vph
 - the left-turn volume plus the opposing volume >720 vph

(d) Pedestrians crossing the main road.

Adj. Factors
1
1.5
1.5
0

CONCLUSION: The intersection does NOT meet the minimum warrants for traffic control signals.

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