2010 Highway Capacity Manual (HCM)

Pedestrian Level of Service (LOS) at Uncontrolled Crossing Locations

Intersection and Mid-Block Crossings

Introduction:

The Worksheets provide a procedure for evaluating the Level of Service (LOS) at uncontrolled pedestrian crossings according to the methodology presented in Chapter 19 of the 2010 Highway Capacity Manual. Uncontrolled pedestrian crossings include: marked crossings at mid-block locations; marked crossings at intersections; and unmarked crossings at intersections, that are not controlled by a traffic control device such as signals and stop or yield signs.

Use of these Worksheets in Microsoft Excel results in an automated procedure. While this automated procedure has been checked for accuracy using multiple examples, no warranty is made by the developers as to the accuracy, completeness, or reliability of the equations and results. No responsibility is assumed for incorrect results or damages resulting from the use of these worksheets.

This process is not for use at signalized crossings and has not been verified to be accurate for unsignalized pedestrian crossings within a signalized corridor.

The equations and methodology presented through this process is contained within the 2010 Highway Capacity Manual (HCM). Any questions on the approach, assumptions, and limitations of the procedure or for verification of equations are directed to the 2010 HCM.

This material was developed by Bolton & Menk, Inc. in coordination with the Local Road Research Board (LRRB) for the use by practicioners. These Worksheets are made without charge and under no circumstances shall be sold by third parties for profit.

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178

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Intersection and Mid-Block Crossings

Crossing Location:	Variolite/161st Ave	Date:	5/4/2017
City, State:	Ramsey, Mn	Scenario:	
Reviewer(s):	Grant Riemer	Agency:	City of Ramsey
Project Number:		ID #:	

The following is the base information needed to complete the analysis.
If this is a one-stage crossing, use only Crossing 1.
If this is a two-stage crossing, each stage must be evaluated separately using Crossing 1 and Crossing 2.

Crossing 1:

Evaluation Inputs:

	defaults:		Input Table:	
L = crosswalk length (ft)			L =	52
S_p = average pedestrian walking speed (ft/s)	S_p =	3.5	S_p =	3.5
t_s = pedestrian start-up and end clearance time (s)	t_s =	3.0	t_s =	3
V = vehicular hourly volume (veh/hr)			V =	74
v_p = pedestrian flow rate (ped/s)	v_p =	0*	v_p =	3.00
v = vehicular flow rate (veh/s) = V/3600	v =	V/3600	v =	0.020
W_c = crosswalk width (ft)	W_c =	8.0	W_c =	10.0
N = number of through lanes crossed (Integer)	N =	INT(L/11)	N =	2

*no platooning observed

Crossing 2: (only used for two-stage crossings)

Evaluation Inputs:

	defaults:		Input Table:	
L = crosswalk length (ft)			L =	
S_p = average pedestrian walking speed (ft/s)	S_p =	3.5	S_p =	
t_s = pedestrian start-up and end clearance time (s)	t_s =	3.0	t_s =	
V = vehicular hourly volume (veh/hr)			V =	
v_p = pedestrian flow rate (ped/s)	v_p =	0*	v_p =	
v = vehicular flow rate (veh/s) = V/3600	v =	V/3600	v =	
W_c = crosswalk width (ft)	W_c =	8.0	W_c =	
N = number of through lanes crossed (Integer)	N =	INT(L/11)	N =	

*no platooning observed

Crossing Treatment Yield Rate

	Input Table:	
M_y = motorist yield rate (decimal)	M_y =	7%

Entering data into the tables above will populate the evaluation tables in Microsoft Excel.

Results:

Average Delay	4.3	sec/ped
LOS	A	