



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

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TO: All Design, Operations, and District Personnel, and Consultants

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SUBJECT: Turn Lane Deceleration Length

REVISES: *Indiana Design Manual Figure 46-4J*

EFFECTIVE: Stage 1 submittal on or after September 1, 2018

The length of a turn lane should provide both the deceleration length needed for a turning vehicle to enter the turn lane and slow to a stop before the intersection as well as sufficient storage for the queue during the design hour.

Figure 46-4J, Deceleration Distance for Turn Lane, has been revised to include full-width deceleration lengths consistent with AASHTO *A Policy on Geometric Design of Highways and Streets* (Green Book), 2011, Table 10-5, Minimum Deceleration Lengths for Exit Terminals, for the stopped condition.

These values are lower than previous IDM values for speeds 40 mph and above, but higher than Green Book Table 9-22, Desirable Full Deceleration Lengths.

The revised figure is included for reference on the following page and has been incorporated into IDM Chapter 46 on-line.

Projects outside effective date may also use the revised values.

Design Speed (mph)	L_D , Full-Width Auxiliary Lane (ft)
60	530
55	480
50	435
45	385
40	320
35	280
30	235
25	200

Grade-Adjustment Factor for Downgrade, G_d				
$0 \leq G_d < 2$	$2 \leq G_d < 3$	$3 \leq G_d < 4$	$4 \leq G_d < 5$	$5 \leq G_d \leq 6$
1.00	1.10	1.20	1.28	1.35
Grade-Adjustment Factor for Upgrade, G_u				
$0 \leq G_u < 2$	$2 \leq G_u < 3$	$3 \leq G_u < 4$	$4 \leq G_u < 5$	$5 \leq G_u \leq 6$
1.00	0.95	0.90	0.85	0.80

Note: The grade-adjustment factor multiplied by the length L_D provided above will provide the deceleration-lane length adjusted for grade. The adjustment factor applies to each design speed.

DECELERATION DISTANCE FOR TURN LANE

Figure 46-4J