

Design Speed (km/h)	Desirable $L_D$ , Full-Width Auxiliary Lane (m)
110	285
100	245
90	205
80	165
70	130
60	100
50	70
40	60

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 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**