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Two-Way Two-Lane Highway Segment Analysis

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 Agency/Co. Parsons Brinckerhoff
 Date Performed 08/21/03
 Analysis Time Period
 Highway North Dearborn Rd
 From/To
 Jurisdiction
 Analysis Year 2030
 Description Existing Roads with Future Traffic Volumes

Input Data

Highway class	Class 1				
Shoulder width	0.5	ft	Peak-hour factor, PHF	0.86	
Lane width	10.0	ft	% Trucks and buses	2	%
Segment length	15.6	mi	% Recreational vehicles	4	%
Terrain type	Level		% No-passing zones	94	%
Grade: Length		mi	Access points/mi	25	/mi
Up/down		%			
Two-way hourly volume, v	117	veh/h			
Directional split	71 / 29	%			

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate, (note-1) vp	138	pc/h
Highest directional split proportion (note-2)	98	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	35	mi/h
Observed volume, Vf	0	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	-	mi/h
Adj. for lane and shoulder width, fLS	-	mi/h
Adj. for access points, fA	-	mi/h
Free-flow speed, FFS	35.0	mi/h
Adjustment for no-passing zones, fnp	2.2	mi/h
Average travel speed, ATS	31.7	mi/h

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Grade adjustment factor, fg	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fhv	0.998	
Two-way flow rate,(note-1) vp	136	pc/h
Highest directional split proportion (note-2)	97	
Base percent time-spent-following, BPTSF	11.3	%
Adj.for directional distribution and no-passing zones, fd/np	26.8	
Percent time-spent-following, PTSF	38.1	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.04	
Peak 15-min vehicle-miles of travel, VMT15	531	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1825	veh-mi
Peak 15-min total travel time, TT15	16.8	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.