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Merge Analysis

Analyst: Pavel Mlaker
Agency/Co.: UL FGG
Date performed: 11/12/2012
Analysis time period:
Freeway/Dir of Travel: A1 Malence-Kozarje
Junction: Lj. Rudnik
Jurisdiction:
Analysis Year:
Description: predhodna dolo

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	120.0	km/h
Volume on freeway	3400	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	40.0	km/h
Volume on ramp	800	vph
Length of first accel/decel lane	200	m
Length of second accel/decel lane		m

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1300	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	200	m

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3400	800	1300	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	944	222	361	v
Trucks and buses	3	3	3	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Grade	Grade	
Grade	%	4.00	%	4.00
Length	km	0.00	km	0.00
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.985	0.985	0.985	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3834	902	1466	pcph

Estimation of V12 Merge Areas

L = 74.28 (Equation 25-2 or 25-3)
 EQ
 P = 0.596 Using Equation 1
 FM
 $v_{12} = v_F (P_{FM}) = 2285$ pcph

Capacity Checks

	Actual	Maximum	LOS F?
v _{FO}	4736	7200	No
v _{R12}	3187	4600	No

Level of Service Determination (if not F)

Density, $D = 3.402 + 0.00456 v_R + 0.0048 v_{12} - 0.01278 L_A = 15.9$ pc/km/ln
 Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M = 0.383	
	S	
Space mean speed in ramp influence area,	S = 99.7	km/h
	R	
Space mean speed in outer lanes,	S = 113.9	km/h
	0	
Space mean speed for all vehicles,	S = 103.9	km/h
