

Phone:
E-mail:

Fax:

Diverge Analysis

Analyst: Pavel Mlaker
Agency/Co.: UL FGG
Date performed: 06/12/2012
Analysis time period:
Freeway/Dir of Travel: A1 Kozarje-Malence
Junction: Lj. Rudnik
Jurisdiction:
Analysis Year:
Description: Predhodna določitev hitrosti na rampi

Freeway Data

| | | |
|----------------------------|---------|------|
| Type of analysis | Diverge | |
| Number of lanes in freeway | 3 | |
| Free-flow speed on freeway | 120.0 | km/h |
| Volume on freeway | 4200 | vph |

Off Ramp Data

| | | |
|-----------------------------------|-------|------|
| Side of freeway | Right | |
| Number of lanes in ramp | 1 | |
| Free-Flow speed on ramp | 60.0 | km/h |
| Volume on ramp | 900 | 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 | 700 | vph |
| Position of adjacent ramp | Downstream | |
| Type of adjacent ramp | On | |
| Distance to adjacent ramp | 200 | m |

Conversion to pc/h Under Base Conditions

| Junction Components | Freeway | | Ramp | | Adjacent Ramp | |
|------------------------------|---------|----|-------|----|---------------|-----|
| Volume, V (vph) | 4200 | | 900 | | 700 | vph |
| Peak-hour factor, PHF | 0.90 | | 0.90 | | 0.90 | |
| Peak 15-min volume, v15 | 1167 | | 250 | | 194 | v |
| Trucks and buses | 0 | | 4 | | 0 | % |
| Recreational vehicles | 0 | | 0 | | 0 | % |
| Terrain type: | Level | | Grade | | Level | |
| Grade | 0.00 | % | 0.00 | % | 0.00 | % |
| Length | 0.00 | km | 0.00 | km | 0.00 | km |
| 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 | 1.000 | 0.980 | 1.000 | |
| Driver population factor, fP | 1.00 | 1.00 | 1.00 | |
| Flow rate, vp | 4667 | 1020 | 778 | pcph |

Estimation of V12 Diverge Areas

$L = 0.00$ (Equation 25-8 or 25-9)
 EQ
 $P = 0.596$ Using Equation 5
 FD
 $v_{12} = v_R + (v_F - v_R) P_{FD} = 3195$ pcph

Capacity Checks

| | Actual | Maximum | LOS F? |
|----------------------|--------|---------|--------|
| $v_{Fi} = v_F$ | 4667 | 7200 | No |
| v_{12} | 3195 | 4400 | No |
| $v_{FO} = v_F - v_R$ | 3647 | 7200 | No |
| v_R | 1020 | 2000 | No |

Level of Service Determination (if not F)

Density, $D = 2.642 + 0.0053 v_{12} - 0.0183 L_D = 15.9$ pc/km/ln
 Level of service for ramp-freeway junction areas of influence C

Speed Estimation

| | | |
|--|---------------|------|
| Intermediate speed variable, | $D = 0.495$ | |
| | S | |
| Space mean speed in ramp influence area, | $S_R = 93.8$ | km/h |
| | R | |
| Space mean speed in outer lanes, | $S_0 = 124.3$ | km/h |
| | 0 | |
| Space mean speed for all vehicles, | $S = 101.6$ | km/h |
