Diverge Analysis

Analyst: 
Agency/Co.: 
Date performed: 02/11/2016
Analysis time period: 
Freeway/dir or travel: D1
Junction: cierre
Jurisdiction: 
Analysis Year: 
Description: 

Freeway Data

Type of analysis: Diverge
Number of lanes in freeway: 2
Free-flow speed on freeway: 90.0 km/h
Volume on freeway: 2530 vph

Off Ramp Data

Side of freeway: Right
Number of lanes in ramp: 1
Free-Flow speed on ramp: 90.0 km/h
Volume on ramp: 2107 vph
Length of first accel/decel lane: 450 m
Length of second accel/decel lane: m

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist? No
Volume on adjacent ramp: vph
Position of adjacent ramp: 
Type of adjacent ramp: 
Distance to adjacent ramp: m

Conversion to pc/h Under Base Conditions

<table>
<thead>
<tr>
<th>Junction Components</th>
<th>Freeway</th>
<th>Ramp</th>
<th>Adjacent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume, V (vph)</td>
<td>2530</td>
<td>2107</td>
<td>vph</td>
</tr>
<tr>
<td>Peak-hour factor, PHF</td>
<td>0.80</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>Peak 15-min volume, v15</td>
<td>791</td>
<td>658</td>
<td>v</td>
</tr>
<tr>
<td>Trucks and buses</td>
<td>5</td>
<td>5</td>
<td>%</td>
</tr>
</tbody>
</table>
Recreational vehicles                  0           0                     
Terrain type:                          Level       Level       Level
Grade                             0.00    %   0.00    %           %
Length                            0.00    km  0.00    km          km
Trucks and buses PCE, ET               1.5         1.5
Recreational vehicle PCE, ER           1.2         1.2
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                        3242        2700                  pcph

Estimation of V12 Diverge Areas

\[ L = 0.00 \text{ (Equation 25-8 or 25-9)} \]
\[ EQ \]
\[ P = 1.000 \text{ Using Equation 0} \]
\[ FD \]
\[ v = v + (v - v) P = 3242 \text{ pcph} \]
\[ FD \]

Capacity Checks

\[
\begin{array}{ccc}
\text{v} & \text{Actual} & \text{Maximum} & \text{LOS F?} \\
\text{Fi F} & 3242 & 4500 & \text{No} \\
\text{v} & 3242 & 4400 & \text{No} \\
\text{12 F} & 542 & 4500 & \text{No} \\
\text{FO F} & 2700 & 2200 & \text{Yes} \\
\text{R} & & & \\
\end{array}
\]

Level of Service Determination (if not F)

Density, \[ D = 2.642 + 0.0053 v - 0.0183 L \]
\[ R \]
\[ 12 \]
\[ D = 11.6 \text{ pc/km/ln} \]

Level of service for ramp-freeway junction areas of influence \[ F \]

Speed Estimation

Intermediate speed variable, \[ D = 0.406 \]
Space mean speed in ramp influence area, \[ S = 81 \text{ km/h} \]
Space mean speed in outer lanes, \[ S = \text{N/A} \text{ km/h} \]
Space mean speed for all vehicles, \[ S = 80.7 \text{ km/h} \]