Diverge Analysis

Analyst:          
Agency/Co.:       
Date performed:   02/11/2016
Analysis time period:  
Freeway/dir or travel:  D3
Junction:         
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                           423            vph

Off Ramp Data

Side of freeway                             Left
Number of lanes in ramp                     2
Free-Flow speed on ramp                     90.0           km/h
Volume on ramp                               66            vph
Length of first accel/decel lane            103            m
Length of second accel/decel lane           103            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

Junction Components                    Freeway   Ramp   Adjacent
Volume, V (vph)                        423       66         vph
Peak-hour factor, PHF                  0.80      0.80
Peak 15-min volume, v15                132       21         v
Trucks and buses                       5         5          %
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                          542         85                    pcph

Estimation of V12 Diverge Areas

\[ L = 0.00 \text{ (Equation 25-8 or 25-9)} \]
\[ P = 1.000 \text{ Using Equation 0} \]
\[ v = v + (v - v) P = 542 \text{ pcph} \]
\[ 12 \text{ R F R FD} \]

Capacity Checks

<table>
<thead>
<tr>
<th>Actual</th>
<th>Maximum</th>
<th>LOS F?</th>
</tr>
</thead>
<tbody>
<tr>
<td>542</td>
<td>4500</td>
<td>No</td>
</tr>
<tr>
<td>542</td>
<td>4400</td>
<td>No</td>
</tr>
<tr>
<td>457</td>
<td>4500</td>
<td>No</td>
</tr>
<tr>
<td>85</td>
<td>4400</td>
<td>No</td>
</tr>
</tbody>
</table>

Level of Service Determination (if not F)

\[ D = 2.642 + 0.0053 v - 0.0183 \]
\[ L = -0.1 \text{ pc/km/ln} \]
\[ R 12 D \]

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

\[ D = 0.171 \]
\[ S = 86 \text{ km/h} \]
\[ S = N/A \text{ km/h} \]
\[ S = 86.1 \text{ km/h} \]