**Diverge Analysis**

**Analyst:**
**Agency/Co.:**
**Date performed:** 02/11/2016
**Analysis time period:**
**Freeway/dir or travel:** D2
**Junction:** cierra
**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:** 2107 vph

### Off Ramp Data

- **Side of freeway:** Right
- **Number of lanes in ramp:** 2
- **Free-Flow speed on ramp:** 60.0 km/h
- **Volume on ramp:** 44 vph
- **Length of first accel/decel lane:** 30 m
- **Length of second accel/decel lane:** 30 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>2107</td>
<td>44</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>658</td>
<td>14</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                          2700        56                    pcph

Estimation of V12 Diverge Areas_________________________

\[ L = 0.00 \quad \text{(Equation 25-8 or 25-9)} \]

\[ P = 1.000 \quad \text{Using Equation 0} \]

\[ v = v + (v - v) P = 2700 \quad \text{pcph} \]

Capacity Checks_____________________________________

\[ \begin{array}{ccc}
\text{Actual} & \text{Maximum} & \text{LOS F?} \\
v_{12} & 2700 & 4500 & \text{No} \\
v_{12} & 2700 & 4400 & \text{No} \\
\end{array} \]

Level of Service Determination (if not F)_________________

\[ D = 2.642 + 0.0053 v - 0.0183 \quad L = 15.3 \quad \text{pc/km/ln} \]

Level of service for ramp-freeway junction areas of influence \( C \)

Speed Estimation_____________________________________

\[ \begin{array}{ccc}
\text{Intermediate speed variable,} & D = 0.408 \\
\text{Space mean speed in ramp influence area,} & S = 81 \quad \text{km/h} \\
\text{Space mean speed in outer lanes,} & S = \text{N/A} \quad \text{km/h} \\
\text{Space mean speed for all vehicles,} & S = 80.6 \quad \text{km/h} \\
\end{array} \]