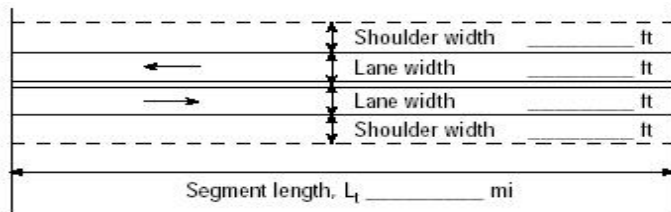


Appendix 5 HCS Analysis Worksheets

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|---|------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Lotus to N Shingle |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway <input type="checkbox"/> Class III highway Terrain <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.89 No-passing zone 100% % Trucks and Buses, P _T 2% % Recreational vehicles, P _R 0% Access points mi 1/mi | |
| Analysis direction vol., V _d | 449veh/h | | |
| Opposing direction vol., V _o | 218veh/h | | |
| Shoulder width ft | 1.0 | | |
| Lane Width ft | 11.0 | | |
| Segment Length mi | 0.6 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.8 | 2.2 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.984 | 0.977 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 0.95 | 0.79 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 540 | 317 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 55 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 3.8 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 58.5 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} 48.1 mi/h | |
| | | Percent free flow speed, PFFS 82.1 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.2 | 1.7 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.996 | 0.986 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 0.96 | 0.82 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 528 | 303 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 49.4 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 36.4 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 72.5 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | D | | |
| Volume to capacity ratio, v/c | 0.37 | | |

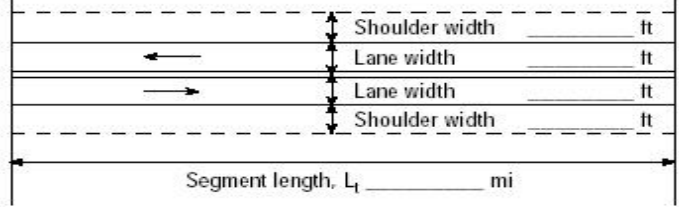
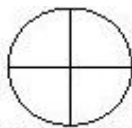
| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1428 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 82.1 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 504.5 |
| Effective width, W_v (Eq. 15-29) ft | 12.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.42 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.84 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | N Shingle to Lotus |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

| | |
|--|---|
|  <p>Shoulder width _____ ft</p> <p>Lane width _____ ft</p> <p>Lane width _____ ft</p> <p>Shoulder width _____ ft</p> <p>Segment length, L_1 _____ mi</p> | <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway </div> <div style="text-align: center;"> <input checked="" type="checkbox"/> Class II highway </div> </div> <p>Terrain <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling</p> <p>Grade Length _____ mi Up/down</p> <p>Peak-hour factor, PHF 0.72</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 2%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 1/mi</p> |
| <p>Analysis direction vol., V_d 218veh/h</p> <p>Oposing direction vol., V_o 449veh/h</p> <p>Shoulder width ft 1.0</p> <p>Lane Width ft 11.0</p> <p>Segment Length mi 0.6</p> | <div style="text-align: center;">  Show North Arrow </div> |

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 2.1 | 1.7 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.978 | 0.986 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 0.83 | 0.97 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 373 | 652 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|---|
| Mean speed of sample ³ , S_{FM} 50 | Base free-flow speed ⁴ , BFFS _____ mi/h |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) _____ mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) _____ mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 1.8 mi/h | Free-flow speed, FFS ($FFS = BFFS * f_{LS} * f_A$) 51.7 mi/h |
| | Average travel speed, $ATS_d = FFS * 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 42.0 mi/h |
| | Percent free flow speed, PFFS 81.2 % |

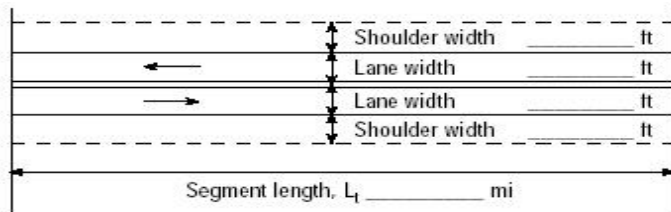

Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.6 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.988 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 0.85 | 0.97 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 360 | 643 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 43.7 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 32.5 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 55.4 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.22 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1626 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1666 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 81.2 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 302.8 |
| Effective width, W_v (Eq. 15-29) ft | 12.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.42 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.59 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|---|------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | N Shingle to Ponderosa |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway <input checked="" type="checkbox"/> Class II highway </div> <div style="width: 45%;"> <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling </div> </div> <div style="margin-top: 10px;"> <p>Terrain</p> <p>Grade Length mi Up/down</p> <p>Peak-hour factor, PHF 0.89</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 1%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 1/mi</p> </div> <div style="margin-top: 10px; text-align: center;">  <p>Show North Arrow</p> </div> | |
| Analysis direction vol., V _d | 196veh/h | | |
| Opposing direction vol., V _o | 195veh/h | | |
| Shoulder width ft | 1.0 | | |
| Lane Width ft | 11.0 | | |
| Segment Length mi | 0.5 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 2.3 | 2.3 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.987 | 0.987 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 0.77 | 0.77 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 290 | 288 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 44 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width ⁴ , f _{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 3.4 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) | 45.5 mi/h |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} | 37.6 mi/h |
| | | Percent free flow speed, PFFS | 82.6 % |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.7 | 1.7 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.993 | 0.993 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 0.81 | 0.81 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 274 | 272 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{-av_d}) | | 30.4 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 59.2 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 60.1 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.19 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1418 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 82.6 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 220.2 |
| Effective width, W_v (Eq. 15-29) ft | 12.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.17 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.15 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Ponderosa to N Shingle |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.75
 No-passing zone 100%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points *mi* 1/mi

Show North Arrow

Analysis direction vol., V_d 195veh/h

Oposing direction vol., V_o 196veh/h

Shoulder width ft 1.0

Lane Width ft 11.0

Segment Length mi 0.5

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|--|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 2.2 | 2.2 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.988 | 0.988 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 0.80 | 0.80 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 329 | 331 |
| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S_{FM} 44 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> | |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) <i>mi/h</i> | |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> | |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 3.1 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 45.5 <i>mi/h</i> | |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 37.3 <i>mi/h</i> | |
| | Percent free flow speed, PFFS 81.8 % | |

Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.7 | 1.7 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.993 | 0.993 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 0.83 | 0.83 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 315 | 317 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 35.2 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 55.1 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 62.7 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.22 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1412 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1453 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 81.8 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 260.0 |
| Effective width, W_v (Eq. 15-29) ft | 12.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.17 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.24 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|---------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Ponderosa to Cameron Park |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.81

No-passing zone 100%

% Trucks and Buses, P_T 1%

% Recreational vehicles, P_R 0%

Access points *mi* 3/mi

| | |
|--------------------------------|----------|
| Analysis direction vol., V_d | 341veh/h |
| Opposing direction vol., V_o | 276veh/h |
| Shoulder width ft | 1.0 |
| Lane Width ft | 12.0 |
| Segment Length mi | 3.0 |

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.3 | 1.4 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.997 | 0.996 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 422 | 342 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|--|
| Mean speed of sample ³ , S_{FM} 52 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width, ⁴ f_{LS} (Exhibit 15-7) <i>mi/h</i> |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 3.2 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 54.7 <i>mi/h</i> |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 45.6 <i>mi/h</i> |
| | Percent free flow speed, PFFS 83.4 % |

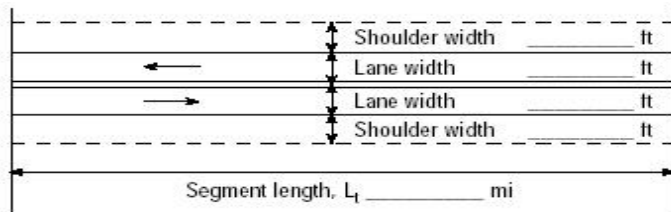

Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.999 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 421 | 341 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 43.9 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 46.1 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 69.4 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.25 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1698 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 83.4 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 421.0 |
| Effective width, W_v (Eq. 15-29) ft | 13.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.47 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|--|------------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Cameron Park Dr to Ponderosa |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway <input checked="" type="checkbox"/> Class II highway </div> <div style="width: 45%;"> <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling </div> </div> <div style="margin-top: 10px;"> <p>Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling</p> <p>Grade Length mi Up/down</p> <p>Peak-hour factor, PHF 0.66</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 1%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 3/mi</p> </div> <div style="margin-top: 10px; text-align: center;">  <p>Show North Arrow</p> </div> | |
| Analysis direction vol., V _d | 276veh/h | | |
| Opposing direction vol., V _o | 341veh/h | | |
| Shoulder width ft | 1.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 3.0 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.3 | 1.2 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.997 | 0.998 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 419 | 518 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 44 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 2.2 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 46.1 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} 36.7 mi/h | |
| | | Percent free flow speed, PFFS 79.5 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 418 | 517 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 45.7 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 40.2 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 63.7 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.25 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1697 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 79.5 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 418.2 |
| Effective width, Wv (Eq. 15-29) ft | 13.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.46 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Cameron Park Dr to Bass Lake |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down _____

Peak-hour factor, PHF _____ 0.73

No-passing zone _____ 100%

% Trucks and Buses, P_T _____ 1%

% Recreational vehicles, P_R _____ 0%

Access points mi _____ 2/mi

Analysis direction vol., V_d 603veh/h

Oposing direction vol., V_o 392veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 0.7

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.1 | 1.2 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.999 | 0.998 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 827 | 538 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|---|---|
| Mean speed of sample ³ , S_{FM} 47 | Base free-flow speed ⁴ , BFFS mi/h |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.2 mi/h | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 51.7 mi/h |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + v_{o,ATS}) - f_{np,ATS}$ 38.9 mi/h |
| | Percent free flow speed, PFFS 75.3 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 826 | 537 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 68.7 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 27.9 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + v_{o,PTSF})$ | 85.6 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.49 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1697 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 75.3 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 826.0 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.15 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|-----------|---|------------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Bass Lake to Cameron Park Dr |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
| | | <input type="checkbox"/> Class I highway <input type="checkbox"/> Class II highway <input checked="" type="checkbox"/> Class III highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.72 No-passing zone 100% % Trucks and Buses, P _T 1% % Recreational vehicles, P _R 0% Access points mi 2/mi | |
| Analysis direction vol., V _d | 392veh/h | | |
| Opposing direction vol., V _o | 603veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 0.7 | | |
| Average Travel Speed | | | |
| | | Analysis Direction (d) | Opposing Direction (o) |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | | 1.2 | 1.1 |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, f _{HV,ATS} = 1 / (1 + P _T (E _T -1) + P _R (E _R -1)) | | 0.998 | 0.999 |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | | 1.00 | 1.00 |
| Demand flow rate ² , v _i (pc/h) v _i = V _i / (PHF * f _{g,ATS} * f _{HV,ATS}) | | 546 | 838 |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 46 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width ⁴ , f _{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, FFS = S _{FM} + 0.00776(v / f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 1.2 mi/h | Free-flow speed, FFS (FFS = BFFS * f _{LS} * f _A) | 49.0 mi/h |
| | | Average travel speed, ATS _d = FFS * 0.00776(v _{d,ATS} + V _{o,ATS}) - f _{np,ATS} | 37.1 mi/h |
| | | Percent free flow speed, PFFS | 75.6 % |
| Percent Time-Spent-Following | | | |
| | | Analysis Direction (d) | Opposing Direction (o) |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, f _{HV} = 1 / (1 + P _T (E _T -1) + P _R (E _R -1)) | | 1.000 | 1.000 |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | | 1.00 | 1.00 |
| Directional flow rate ² , v _i (pc/h) v _i = V _i / (PHF * f _{HV,PTSF} * f _{g,PTSF}) | | 544 | 837 |
| Base percent time-spent-following ⁴ , BPTSF _d (%) = 100(1 - e ^{-av_d}) | | 58.0 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 27.4 | |
| Percent time-spent-following, PTSF _d (%) = BPTSF _d + f _{np,PTSF} * (v _{d,PTSF} / v _{d,PTSF} + V _{o,PTSF}) | | 68.8 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | | C | |
| Volume to capacity ratio, v/c | | 0.32 | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1698 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 75.6 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 544.4 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 1.94 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|--------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Bass Lake to Deer Valley |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.90
 No-passing zone 100%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points _____ mi 2/mi

Show North Arrow

Analysis direction vol., V_d 570veh/h

Opposing direction vol., V_o 307veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 1.4

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.7 | 2.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.993 | 0.989 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 0.97 | 0.86 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 658 | 401 |

| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
|---|----------|---|-----------|
| Mean speed of sample ³ , S_{FM} | 61 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | | Adj. for access points ⁴ , f_A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) | 2.9 mi/h | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) | 65.5 mi/h |
| | | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ | 54.3 mi/h |
| | | Percent free flow speed, PFFS | 83.0 % |

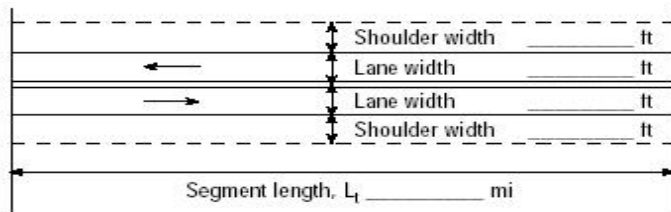

Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.6 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.994 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 0.98 | 0.87 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 646 | 394 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 58.1 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 33.0 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 78.6 | |

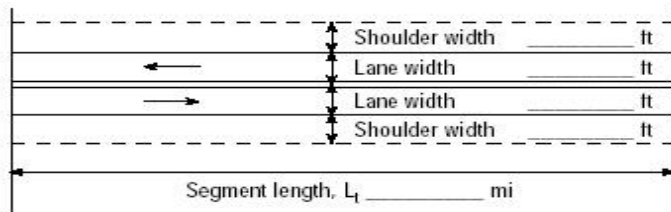

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | D |
| Volume to capacity ratio, v/c | 0.42 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1521 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 83.0 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 633.3 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.40 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|--|--------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Deer Valley to Bass Lake |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway <input checked="" type="checkbox"/> Class II highway </div> <div style="width: 45%;"> <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling </div> </div> <div style="margin-top: 10px;"> <p>Grade Length mi _____</p> <p>Peak-hour factor, PHF 0.61</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 1%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 2/mi</p> </div> <div style="margin-top: 10px; text-align: center;">  <p>Show North Arrow</p> </div> | |
| Analysis direction vol., V _d | 307veh/h | | |
| Opposing direction vol., V _o | 570veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 1.4 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.8 | 1.3 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.992 | 0.997 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 0.95 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 534 | 937 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 58 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width ⁴ , f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 1.3 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 60.4 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} + V _{o,ATS}) - f _{np,ATS} 47.7 mi/h | |
| | | Percent free flow speed, PFFS 79.0 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.2 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.998 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 0.96 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 525 | 934 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{-av_d}) | | 58.1 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 23.9 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 66.7 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.31 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1695 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 79.0 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 503.3 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.28 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|---|------------------------|--|------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Deer Valley to Malcolm |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway <input checked="" type="checkbox"/> Class II highway </div> <div style="width: 45%;"> <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling </div> </div> <div style="margin-top: 10px;"> <p>Grade Length mi Up/down</p> <p>Peak-hour factor, PHF 0.92</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 0%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 2/mi</p> </div> <div style="margin-top: 10px; text-align: center;">  <p>Show North Arrow</p> </div> | |
| Analysis direction vol., V _d | 581veh/h | | |
| Opposing direction vol., V _o | 305veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 1.0 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.7 | 2.1 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 0.97 | 0.85 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 651 | 390 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 48 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 2.8 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) | 52.5 mi/h |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} | 41.6 mi/h |
| | | Percent free flow speed, PFFS | 79.3 % |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.6 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 0.98 | 0.87 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 644 | 381 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 57.2 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 33.0 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} (v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 77.9 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | D | | |
| Volume to capacity ratio, v/c | 0.43 | | |

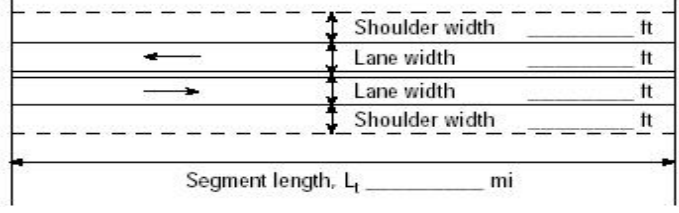
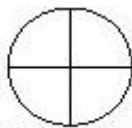
| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1513 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 79.3 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 631.5 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.19 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Malcolm to Deer Valley |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

| | |
|--|---|
|  <p>Shoulder width _____ ft</p> <p>Lane width _____ ft</p> <p>Lane width _____ ft</p> <p>Shoulder width _____ ft</p> <p>Segment length, L_1 _____ mi</p> | <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway </div> <div style="text-align: center;"> <input checked="" type="checkbox"/> Class II highway </div> </div> <p>Terrain <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling</p> <p>Grade Length _____ mi Up/down</p> <p>Peak-hour factor, PHF 0.59</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 1%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 2/mi</p> |
| <p>Analysis direction vol., V_d 305veh/h</p> <p>Oposing direction vol., V_o 581veh/h</p> <p>Shoulder width ft 6.0</p> <p>Lane Width ft 12.0</p> <p>Segment Length mi 1.0</p> | <div style="text-align: center;">  Show North Arrow </div> |

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.8 | 1.3 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.992 | 0.997 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 0.95 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 549 | 988 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|---|
| Mean speed of sample ³ , S_{FM} 54 | Base free-flow speed ⁴ , BFFS _____ mi/h |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) _____ mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) _____ mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 1.1 mi/h | Free-flow speed, FFS ($FFS = BFFS * f_{LS} * f_A$) 56.4 mi/h |
| | Average travel speed, $ATS_d = FFS * 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 43.3 mi/h |
| | Percent free flow speed, PFFS 76.8 % |

Percent Time-Spent-Following

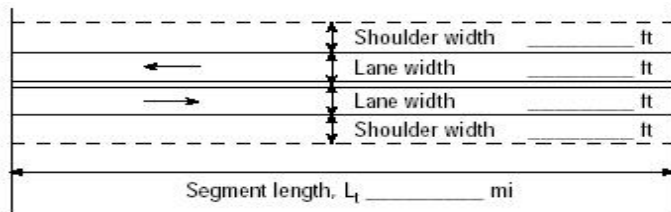

| | Analysis Direction (d) | Oposing Direction (o) |
|--|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.2 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.998 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 0.96 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 540 | 985 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 59.4 | |

| | | |
|---|------|--|
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 22.7 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 67.4 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.32 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1695 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 76.8 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 516.9 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.30 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|--|------------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Malcolm to Silva Valley Pkwy |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway <input type="checkbox"/> Class III highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.88 No-passing zone 85% % Trucks and Buses, P _T 1% % Recreational vehicles, P _R 0% Access points mi 2/mi | |
| Analysis direction vol., V _d | 618veh/h |  Show North Arrow | |
| Opposing direction vol., V _o | 310veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 1.7 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.1 | 1.3 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.999 | 0.997 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 703 | 353 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 64 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 3.1 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) | 68.8 mi/h |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} + V _{o,ATS}) - f _{np,ATS} | 57.5 mi/h |
| | | Percent free flow speed, PFFS | 83.6 % |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.1 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 0.999 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 702 | 353 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 60.0 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 31.0 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 80.6 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | D | | |
| Volume to capacity ratio, v/c | 0.41 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1698 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 83.6 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 702.3 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.45 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Silva Valley Pkwy to Malcolm |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.88
 No-passing zone 85%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points *mi* 2/mi

Show North Arrow

Analysis direction vol., V_d 310veh/h

Oposing direction vol., V_o 618veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 1.7

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.3 | 1.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.997 | 0.999 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 353 | 703 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|--|
| Mean speed of sample ³ , S_{FM} 54 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) <i>mi/h</i> |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 1.6 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 56.4 <i>mi/h</i> |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 46.7 <i>mi/h</i> |
| | Percent free flow speed, PFFS 82.7 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.1 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.999 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 353 | 702 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 43.7 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 31.0 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 54.1 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | B |
| Volume to capacity ratio, v/c | 0.21 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1698 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 82.7 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 352.3 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.10 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|-------------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Silva Valley Pkwy to EDH Blvd |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.87

No-passing zone 100%

% Trucks and Buses, P_T 1%

% Recreational vehicles, P_R 0%

Access points *mi* 0/mi

| | |
|--------------------------------|----------|
| Analysis direction vol., V_d | 693veh/h |
| Opposing direction vol., V_o | 334veh/h |
| Shoulder width ft | 6.0 |
| Lane Width ft | 12.0 |
| Segment Length mi | 0.4 |

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|----------------------------------|--|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.1 | 1.3 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.999 | 0.997 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 797 | 385 |
| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S_{FM} | 40 | Base free-flow speed ⁴ , BFFS mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | | Adj. for access points ⁴ , f_A (Exhibit 15-8) mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) | 2.8 mi/h | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 45.4 mi/h |
| | | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 33.4 mi/h |
| | | Percent free flow speed, PFFS 73.6 % |

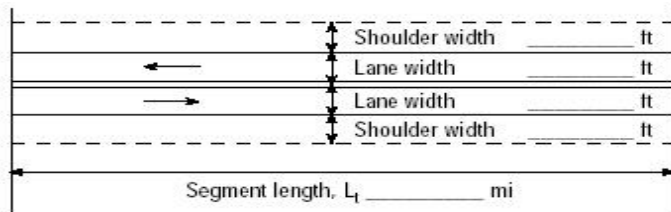
Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.999 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 797 | 384 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 64.2 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 28.5 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 83.4 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | D |
| Volume to capacity ratio, v/c | 0.47 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1698 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 73.6 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 796.6 |
| Effective width, Wv (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.47 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|---|-------------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | EDH Blvd to Silva Valley Pkwy |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway <input type="checkbox"/> Class III highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.80 No-passing zone 100% % Trucks and Buses, P _T 1% % Recreational vehicles, P _R 0% Access points mi 0/mi | |
| Analysis direction vol., V _d | 334veh/h | | |
| Opposing direction vol., V _o | 693veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 0.4 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.3 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.997 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 419 | 866 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 44 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 1.2 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 46.6 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} 35.4 mi/h | |
| | | Percent free flow speed, PFFS 76.1 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 417 | 866 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | 50.2 | | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | 26.2 | | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | 58.7 | | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.25 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1700 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 76.1 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 417.5 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.15 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|--------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | EDH Blvd to Francisco Dr |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.87
 No-passing zone 100%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points *mi* 1/mi

Show North Arrow

| | |
|--------------------------------|----------|
| Analysis direction vol., V_d | 999veh/h |
| Oposing direction vol., V_o | 373veh/h |
| Shoulder width ft | 6.0 |
| Lane Width ft | 12.0 |
| Segment Length mi | 0.4 |

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.0 | 1.3 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.997 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 1148 | 430 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|--|
| Mean speed of sample ³ , S_{FM} 44 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) <i>mi/h</i> |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.6 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 51.8 <i>mi/h</i> |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 36.9 <i>mi/h</i> |
| | Percent free flow speed, PFFS 71.3 % |

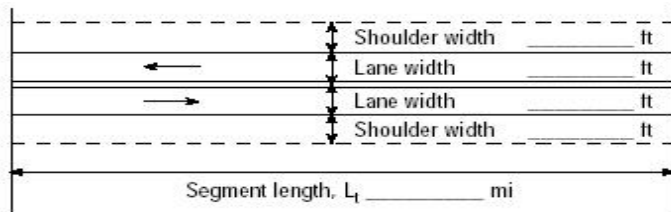

Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 1148 | 429 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 78.0 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 21.6 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 93.7 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | E |
| Volume to capacity ratio, v/c | 0.68 |

| | |
|--|--------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 71.3 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 1148.3 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.32 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|--|--------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Francisco Dr to EDH Blvd |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway <input checked="" type="checkbox"/> Class II highway </div> <div style="width: 45%;"> <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling </div> </div> <div style="margin-top: 10px;"> <p>Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling</p> <p>Grade Length mi Up/down</p> <p>Peak-hour factor, PHF 0.82</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 1%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 1/mi</p> </div> <div style="margin-top: 10px; text-align: center;">  <p>Show North Arrow</p> </div> | |
| Analysis direction vol., V _d | 373veh/h | | |
| Opposing direction vol., V _o | 999veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 0.4 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.2 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.998 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 456 | 1218 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 46 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 1.0 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) | 48.9 mi/h |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} | 34.9 mi/h |
| | | Percent free flow speed, PFFS | 71.4 % |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 455 | 1218 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{-av_d}) | | 56.9 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 19.8 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 62.3 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.27 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1700 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 71.4 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 454.9 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 1.85 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| MULTILANE HIGHWAYS WORKSHEET(Direction 2) | | | |
|---|-----------|-----------------------------------|-----------------------------|
| <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-bottom: 5px;"></div> | | | |
| General Information | | Site Information | |
| Analyst | VZK | Highway/Direction to Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Sophia Pkwy to Francisco Dr |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description GVR Corridor Analysis | | | |
| <input type="checkbox"/> Oper.(LOS) <input type="checkbox"/> Des. (N) <input type="checkbox"/> Plan. (vp) | | | |
| Flow Inputs | | | |
| Volume, V (veh/h) | 1340 | Peak-Hour Factor, PHF | 0.79 |
| AADT(veh/h) | | %Trucks and Buses, P _T | 3 |
| Peak-Hour Prop of AADT (veh/d) | | %RVs, P _R | 0 |
| Peak-Hour Direction Prop, D | | General Terrain: | Grade |
| DDHV (veh/h) | | Grade Length (mi) | 1.35 |
| Driver Type Adjustment | 1.00 | Up/Down % | 4.00 |
| | | Number of Lanes | 2 |
| Calculate Flow Adjustments | | | |
| f _p | 1.00 | E _R | 3.0 |
| E _T | 3.5 | f _{HV} | 0.930 |
| Speed Inputs | | Calc Speed Adj and FFS | |
| Lane Width, LW (ft) | 12.0 | f _{LW} (mi/h) | |
| Total Lateral Clearance, LC (ft) | 12.0 | f _{LC} (mi/h) | |
| Access Points, A (A/mi) | 0 | f _A (mi/h) | |
| Median Type, M | | f _M (mi/h) | |
| FFS (measured) | 59.0 | FFS (mi/h) | 59.0 |
| Base Free-Flow Speed, BFFS | | | |
| Operations | | Design | |
| <u>Operational (LOS)</u> | | <u>Design (N)</u> | |
| Flow Rate, v _p (pc/h/ln) | 911 | Required Number of Lanes, N | |
| Speed, S (mi/h) | 60.0 | Flow Rate, v _p (pc/h) | |
| D (pc/mi/ln) | 15.2 | Max Service Flow Rate (pc/h/ln) | |
| LOS | B | Design LOS | |
| Bicycle Level of Service | | | |

| | |
|--|-------|
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 848.1 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.63 |
| Bicycle level of service (Exhibit 15-4) | C |

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| MULTILANE HIGHWAYS WORKSHEET(Direction 1) | | | |
|---|-----------|-----------------------------------|-----------------------------|
| <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-bottom: 5px;"></div> | | | |
| General Information | | Site Information | |
| Analyst | VZK | Highway/Direction to Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Sophia Pkwy to Francisco Dr |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |
| Project Description GVR Corridor Analysis | | | |
| <input type="checkbox"/> Oper.(LOS) <input type="checkbox"/> Des. (N) <input type="checkbox"/> Plan. (vp) | | | |
| Flow Inputs | | | |
| Volume, V (veh/h) | 606 | Peak-Hour Factor, PHF | 0.81 |
| AADT(veh/h) | | %Trucks and Buses, P _T | 6 |
| Peak-Hour Prop of AADT (veh/d) | | %RVs, P _R | 0 |
| Peak-Hour Direction Prop, D | | General Terrain: | Grade |
| DDHV (veh/h) | | Grade Length (mi) | 1.35 |
| Driver Type Adjustment | 1.00 | Up/Down % | -4.00 |
| | | Number of Lanes | 2 |
| Calculate Flow Adjustments | | | |
| f _p | 1.00 | E _R | 1.2 |
| E _T | 1.5 | f _{HV} | 0.971 |
| Speed Inputs | | Calc Speed Adj and FFS | |
| Lane Width, LW (ft) | 12.0 | f _{LW} (mi/h) | |
| Total Lateral Clearance, LC (ft) | 12.0 | f _{LC} (mi/h) | |
| Access Points, A (A/mi) | 0 | f _A (mi/h) | |
| Median Type, M | | f _M (mi/h) | |
| FFS (measured) | 60.0 | FFS (mi/h) | 60.0 |
| Base Free-Flow Speed, BFFS | | | |
| Operations | | Design | |
| <u>Operational (LOS)</u> | | <u>Design (N)</u> | |
| Flow Rate, v _p (pc/h/ln) | 385 | Required Number of Lanes, N | |
| Speed, S (mi/h) | 60.0 | Flow Rate, v _p (pc/h) | |
| D (pc/mi/ln) | 6.4 | Max Service Flow Rate (pc/h/ln) | |
| LOS | A | Design LOS | |
| Bicycle Level of Service | | | |

| | |
|--|-------|
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 374.1 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 3.05 |
| Bicycle level of service (Exhibit 15-4) | C |

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|----------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Sophia Pkwy to County Line |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.79

No-passing zone 100%

% Trucks and Buses, P_T 2%

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

| | | |
|--------------------------------|-----------|--|
| Analysis direction vol., V_d | 1255veh/h | |
| Oposing direction vol., V_o | 595veh/h | |
| Shoulder width ft | 8.0 | |
| Lane Width ft | 12.0 | |
| Segment Length mi | 0.2 | |

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.0 | 1.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.998 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 1589 | 755 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|--|
| Mean speed of sample ³ , S_{FM} 55 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) <i>mi/h</i> |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 1.6 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 64.7 <i>mi/h</i> |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 44.9 <i>mi/h</i> |
| | Percent free flow speed, PFFS 69.4 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 1589 | 753 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 87.5 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 14.2 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 97.1 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | E |
| Volume to capacity ratio, v/c | 0.93 |

| | |
|--|--------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 69.4 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 1588.6 |
| Effective width, W_v (Eq. 15-29) ft | 28.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.01 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|----------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | County Line to Sophia Pkwy |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | AM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.89
 No-passing zone 100%
 % Trucks and Buses, P_T 2%
 % Recreational vehicles, P_R 0%
 Access points _____ mi 1/mi

Show North Arrow

Analysis direction vol., V_d 595veh/h

Oposing direction vol., V_o 1255veh/h

Shoulder width ft 8.0

Lane Width ft 12.0

Segment Length mi 0.2

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.1 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.998 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 670 | 1410 |

| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
|---|----------|---|-----------|
| Mean speed of sample ³ , S_{FM} | 53 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | | Adj. for access points ⁴ , f_A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) | 0.9 mi/h | Free-flow speed, FFS ($FFS = BFFS * f_{LS} * f_A$) | 57.6 mi/h |
| | | Average travel speed, $ATS_d = FFS * 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ | 40.6 mi/h |
| | | Percent free flow speed, PFFS | 70.4 % |

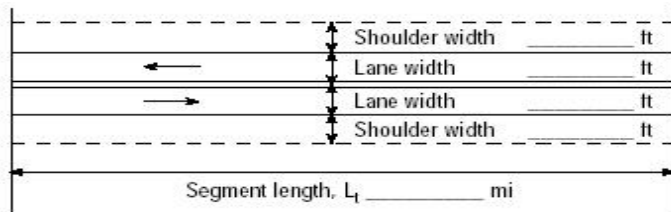
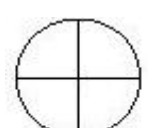
Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 669 | 1410 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | | 70.2 |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | | 14.9 |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | | 75.0 |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | D |
| Volume to capacity ratio, v/c | 0.39 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1700 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 70.4 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 668.5 |
| Effective width, W_v (Eq. 15-29) ft | 28.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 1.57 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|---|------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Lotus to N Shingle |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway <input checked="" type="checkbox"/> Class II highway </div> <div style="width: 45%;"> <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling </div> </div> <div style="margin-top: 10px;"> <p>Terrain</p> <p>Grade Length mi Up/down</p> <p>Peak-hour factor, PHF 0.85</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 2%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 1/mi</p> </div> <div style="margin-top: 10px; text-align: center;">  <p>Show North Arrow</p> </div> | |
| Analysis direction vol., V _d | 263veh/h | | |
| Opposing direction vol., V _o | 510veh/h | | |
| Shoulder width ft | 1.0 | | |
| Lane Width ft | 11.0 | | |
| Segment Length mi | 0.6 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 2.1 | 1.7 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.978 | 0.986 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 0.84 | 0.97 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 377 | 627 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 55 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 1.9 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 57.1 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} + V _{o,ATS}) - f _{np,ATS} 47.4 mi/h | |
| | | Percent free flow speed, PFFS 83.1 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.6 | 1.2 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.988 | 0.996 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 0.85 | 0.97 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 368 | 621 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 43.3 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 33.6 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 55.8 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.22 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1626 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1649 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 83.1 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 309.4 |
| Effective width, W_v (Eq. 15-29) ft | 12.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.42 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.60 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | N Shingle to Lotus |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.86
 No-passing zone 100%
 % Trucks and Buses, P_T 2%
 % Recreational vehicles, P_R 0%
 Access points _____ mi 1/mi

Show North Arrow

Analysis direction vol., V_d 510veh/h

Opposing direction vol., V_o 263veh/h

Shoulder width ft 1.0

Lane Width ft 11.0

Segment Length mi 0.6

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.7 | 2.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.986 | 0.978 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 0.97 | 0.83 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 620 | 377 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|---|---|
| Mean speed of sample ³ , S_{FM} 50 | Base free-flow speed ⁴ , BFFS _____ mi/h |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) _____ mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) _____ mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.9 mi/h | Free-flow speed, FFS ($FFS = BFFS * f_{LS} * f_A$) 54.0 mi/h |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) * f_{np,ATS}$ 43.3 mi/h |
| | Percent free flow speed, PFFS 80.3 % |

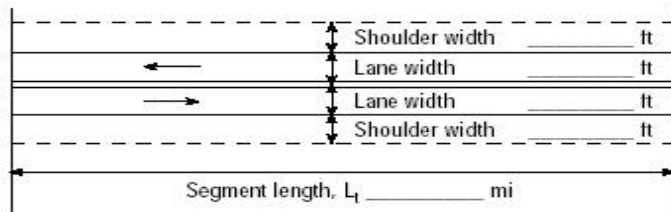

Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.2 | 1.6 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.996 | 0.988 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 0.97 | 0.85 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 614 | 364 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 56.5 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 33.8 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 77.7 | |

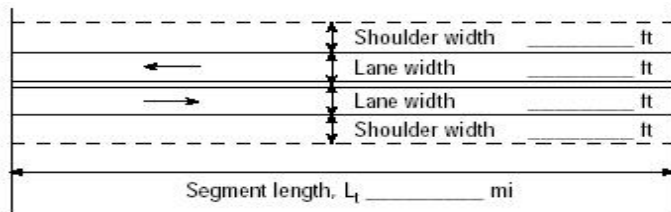
Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | D |
| Volume to capacity ratio, v/c | 0.42 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1478 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 80.3 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 593.0 |
| Effective width, W_v (Eq. 15-29) ft | 12.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.42 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.93 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|--|------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | N Shingle to Ponderosa |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway <input type="checkbox"/> Class III highway </div> <div style="width: 45%;"> <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling </div> </div> <div style="margin-top: 10px;"> <p>Grade Length mi _____</p> <p>Peak-hour factor, PHF 0.79</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 1%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 1/mi</p> </div> <div style="margin-top: 10px; text-align: center;">  <p>Show North Arrow</p> </div> | |
| Analysis direction vol., V _d | 178veh/h | | |
| Opposing direction vol., V _o | 273veh/h | | |
| Shoulder width ft | 1.0 | | |
| Lane Width ft | 11.0 | | |
| Segment Length mi | 0.5 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 2.2 | 2.1 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.988 | 0.989 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 0.77 | 0.86 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 296 | 406 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 44 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 2.7 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 45.4 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} + V _{o,ATS}) - f _{np,ATS} 37.3 mi/h | |
| | | Percent free flow speed, PFFS 82.1 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.7 | 1.6 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.993 | 0.994 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 0.81 | 0.87 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 280 | 400 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 32.9 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 48.9 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 53.0 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | B | | |
| Volume to capacity ratio, v/c | 0.18 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1515 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1521 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 82.1 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 225.3 |
| Effective width, W_v (Eq. 15-29) ft | 12.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.17 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.16 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|--|------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Ponderosa to N Shingle |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway <input type="checkbox"/> Class III highway Terrain <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.89 No-passing zone 100% % Trucks and Buses, P _T 1% % Recreational vehicles, P _R 0% Access points mi 1/mi | |
| Analysis direction vol., V _d | 273veh/h | | |
| Opposing direction vol., V _o | 178veh/h | | |
| Shoulder width ft | 1.0 | | |
| Lane Width ft | 11.0 | | |
| Segment Length mi | 0.5 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 2.1 | 2.3 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.989 | 0.987 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 0.83 | 0.75 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 374 | 270 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 44 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 3.5 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 46.1 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} 37.6 mi/h | |
| | | Percent free flow speed, PFFS 81.5 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.6 | 1.8 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.994 | 0.992 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 0.85 | 0.80 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 363 | 252 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 36.8 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 53.2 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 68.2 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.26 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1401 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 81.5 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 306.7 |
| Effective width, W_v (Eq. 15-29) ft | 12.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.17 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.32 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|---------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Ponderosa to Cameron Park |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.87
 No-passing zone 100%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points mi 3/mi

Show North Arrow

| | |
|--------------------------------|----------|
| Analysis direction vol., V_d | 208veh/h |
| Oposing direction vol., V_o | 348veh/h |
| Shoulder width ft | 1.0 |
| Lane Width ft | 12.0 |
| Segment Length mi | 3.0 |

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|---|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.5 | 1.3 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.995 | 0.997 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 240 | 401 |
| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S_{FM} 52 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.8 mi/h | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 53.6 mi/h | |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 45.9 mi/h | |
| | Percent free flow speed, PFFS 85.6 % | |

Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.1 | 1.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.999 | 0.999 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 239 | 400 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 29.2 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 50.1 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 47.9 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | B |
| Volume to capacity ratio, v/c | 0.14 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1695 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1698 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 85.6 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 239.1 |
| Effective width, W_v (Eq. 15-29) ft | 13.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.18 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Cameron Park Dr to Ponderosa |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.81
 No-passing zone 100%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points *mi* 3/mi

Show North Arrow

Analysis direction vol., V_d 348veh/h

Oposing direction vol., V_o 208veh/h

Shoulder width ft 1.0

Lane Width ft 12.0

Segment Length mi 3.0

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.3 | 1.4 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.997 | 0.996 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 431 | 258 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|--|
| Mean speed of sample ³ , S_{FM} 44 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) <i>mi/h</i> |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 3.6 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 46.7 <i>mi/h</i> |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 37.7 <i>mi/h</i> |
| | Percent free flow speed, PFFS 80.8 % |

Percent Time-Spent-Following

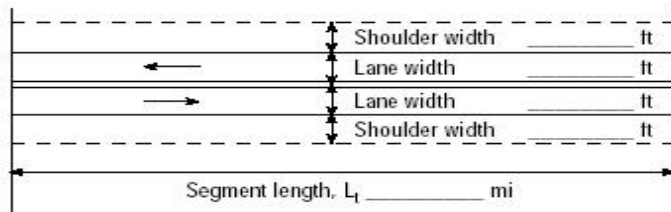

| | Analysis Direction (d) | Oposing Direction (o) |
|--|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.999 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 430 | 257 |

| | |
|---|------|
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 41.5 |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 47.0 |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 70.9 |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | D |
| Volume to capacity ratio, v/c | 0.25 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1698 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 80.8 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 429.6 |
| Effective width, W_v (Eq. 15-29) ft | 13.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 10.48 |
| Bicycle level of service (Exhibit 15-4) | F |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|---|------------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Cameron Park Dr to Bass Lake |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><input type="checkbox"/> Class I highway <input type="checkbox"/> Class II highway</p> <p>highway <input checked="" type="checkbox"/> Class III highway</p> <p>Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling</p> <p>Grade Length mi Up/down</p> <p>Peak-hour factor, PHF 0.92</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 1%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 2/mi</p> </div> <div style="width: 45%; text-align: center;">  <p>Show North Arrow</p> </div> </div> | |
| Analysis direction vol., V _d | 477veh/h | | |
| Opposing direction vol., V _o | 679veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 0.7 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.2 | 1.1 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.998 | 0.999 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 520 | 739 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 47 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 1.5 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 50.7 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} 39.4 mi/h | |
| | | Percent free flow speed, PFFS 77.8 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 518 | 738 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 55.1 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 30.9 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 67.8 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.31 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1698 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 77.8 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 518.5 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 1.91 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Bass Lake to Cameron Park Dr |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down _____

Peak-hour factor, PHF 0.95

No-passing zone 100%

% Trucks and Buses, P_T 1%

% Recreational vehicles, P_R 0%

Access points *mi* 2/mi

| | |
|--------------------------------|----------|
| Analysis direction vol., V_d | 679veh/h |
| Opposing direction vol., V_o | 477veh/h |
| Shoulder width ft | 6.0 |
| Lane Width ft | 12.0 |
| Segment Length mi | 0.7 |

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.1 | 1.2 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.999 | 0.998 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 715 | 503 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|--|
| Mean speed of sample ³ , S_{FM} 46 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width, ⁴ f_{LS} (Exhibit 15-7) <i>mi/h</i> |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.3 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 51.3 <i>mi/h</i> |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 39.5 <i>mi/h</i> |
| | Percent free flow speed, PFFS 77.1 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 715 | 502 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 63.6 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 31.9 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 82.3 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.42 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1697 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 77.1 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 714.7 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.08 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|--------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Bass Lake to Deer Valley |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.86

No-passing zone 100%

% Trucks and Buses, P_T 1%

% Recreational vehicles, P_R 0%

Access points *mi* 2/mi

Analysis direction vol., V_d 367veh/h

Oposing direction vol., V_o 599veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 1.4

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.9 | 1.6 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.991 | 0.994 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 0.91 | 0.98 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 473 | 715 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|--|
| Mean speed of sample ³ , S_{FM} 61 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) <i>mi/h</i> |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 1.7 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 63.9 <i>mi/h</i> |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 53.0 <i>mi/h</i> |
| | Percent free flow speed, PFFS 82.9 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.4 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.996 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 0.92 | 0.99 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 466 | 704 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 51.7 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 31.6 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 64.3 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.28 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1656 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1683 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 82.9 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 426.7 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.20 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|--------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Deer Valley to Bass Lake |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.87
 No-passing zone 100%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points mi 2/mi

Show North Arrow

Analysis direction vol., V_d 599veh/h

Oposing direction vol., V_o 367veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 1.4

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|---|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.6 | 2.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.994 | 0.990 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 0.98 | 0.91 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 707 | 468 |
| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S_{FM} 58 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.9 mi/h | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 62.7 mi/h | |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 50.7 mi/h | |
| | Percent free flow speed, PFFS 80.8 % | |

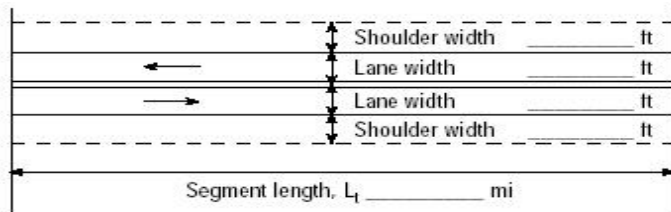
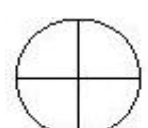
Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.4 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.996 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 0.99 | 0.91 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 695 | 465 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 62.3 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 31.8 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 81.4 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | D |
| Volume to capacity ratio, v/c | 0.44 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1592 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 80.8 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 688.5 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.44 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|--|------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Deer Valley to Malcolm |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway <input checked="" type="checkbox"/> Class II highway </div> <div style="width: 45%;"> <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling </div> </div> <div style="margin-top: 10px;">  <p>Show North Arrow</p> </div> <div style="margin-top: 10px;"> Terrain Up/down Grade Length mi Peak-hour factor, PHF 0.77 No-passing zone 100% % Trucks and Buses, P_T 0% % Recreational vehicles, P_R 0% Access points mi 2/mi </div> | |
| Analysis direction vol., V _d | 385veh/h | | |
| Opposing direction vol., V _o | 664veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 1.0 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.8 | 1.3 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 0.95 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 526 | 862 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 48 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width ⁴ , f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 1.3 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 51.0 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} + V _{o,ATS}) - f _{np,ATS} 39.0 mi/h | |
| | | Percent free flow speed, PFFS 76.4 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.4 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 0.96 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 521 | 862 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 56.7 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 26.0 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 66.5 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.31 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1700 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 76.4 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 500.0 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.07 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Malcolm to Deer Valley |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.80
 No-passing zone 100%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points mi 2/mi

Show North Arrow

Analysis direction vol., V_d 664veh/h

Opposing direction vol., V_o 385veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 1.0

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.4 | 1.8 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.1 | 1.1 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.996 | 0.992 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 0.99 | 0.94 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 842 | 516 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|---|---|
| Mean speed of sample ³ , S_{FM} 54 | Base free-flow speed ⁴ , BFFS mi/h |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.7 mi/h | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 59.2 mi/h |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + v_{o,ATS}) - f_{np,ATS}$ 45.9 mi/h |
| | Percent free flow speed, PFFS 77.6 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.4 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.996 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 0.95 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 830 | 509 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 68.0 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 27.0 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + v_{o,PTSF})$ | 84.7 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | D |
| Volume to capacity ratio, v/c | 0.51 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1629 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 77.6 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 830.0 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.54 |
| Bicycle level of service (Exhibit 15-4) | C |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Malcolm to Silva Valley Pkwy |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.80
 No-passing zone 85%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points mi 2/mi

Show North Arrow

Analysis direction vol., V_d 412veh/h

Opposing direction vol., V_o 715veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 1.7

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.2 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.998 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 516 | 894 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|---|---|
| Mean speed of sample ³ , S_{FM} 64 | Base free-flow speed ⁴ , BFFS mi/h |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 1.3 mi/h | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 67.2 mi/h |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + v_{o,ATS}) - f_{np,ATS}$ 55.0 mi/h |
| | Percent free flow speed, PFFS 81.8 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 515 | 894 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 56.9 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 24.8 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + v_{o,PTSF})$ | 66.0 | |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.30 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1700 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 81.8 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 515.0 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.29 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|------------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Silva Valley Pkwy to Malcolm |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.92

No-passing zone 85%

% Trucks and Buses, P_T 1%

% Recreational vehicles, P_R 0%

Access points *mi* 2/mi

| | |
|--------------------------------|----------|
| Analysis direction vol., V_d | 715veh/h |
| Opposing direction vol., V_o | 412veh/h |
| Shoulder width ft | 6.0 |
| Lane Width ft | 12.0 |
| Segment Length mi | 1.7 |

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.1 | 1.3 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.999 | 0.997 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 778 | 449 |

| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
|---|----------|---|-----------|
| Mean speed of sample ³ , S_{FM} | 54 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | | Adj. for access points ⁴ , f_A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) | 2.7 mi/h | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) | 59.6 mi/h |
| | | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + v_{o,ATS}) - f_{np,ATS}$ | 47.3 mi/h |
| | | Percent free flow speed, PFFS | 79.5 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 777 | 448 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | | 65.6 |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | | 28.9 |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + v_{o,PTSF})$ | | 83.9 |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | D |
| Volume to capacity ratio, v/c | 0.46 |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 79.5 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 777.2 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.79 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.50 |
| Bicycle level of service (Exhibit 15-4) | C |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|-------------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Silva Valley Pkwy to EDH Blvd |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling
 Grade Length _____ mi Up/down
 Peak-hour factor, PHF 0.88
 No-passing zone 100%
 % Trucks and Buses, P_T 1%
 % Recreational vehicles, P_R 0%
 Access points *mi* 0/mi

Show North Arrow

Analysis direction vol., V_d 486veh/h

Oposing direction vol., V_o 699veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 0.4

Average Travel Speed

| | Analysis Direction (d) | Oposing Direction (o) |
|---|--|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.1 | 1.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 0.999 | 0.999 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 553 | 795 |
| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S_{FM} 40 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> | |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) <i>mi/h</i> | |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> | |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 1.2 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 43.8 <i>mi/h</i> | |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 32.1 <i>mi/h</i> | |
| | Percent free flow speed, PFFS 73.3 % | |

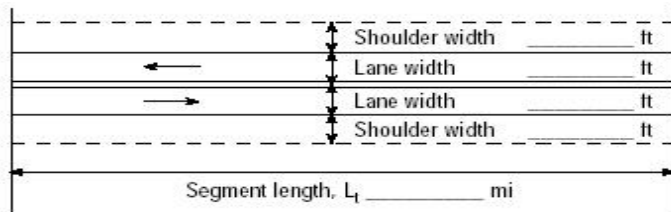
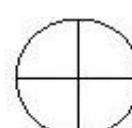
Percent Time-Spent-Following

| | Analysis Direction (d) | Oposing Direction (o) |
|---|------------------------|-----------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 552 | 794 |
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 58.1 | |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 28.7 | |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 69.9 | |

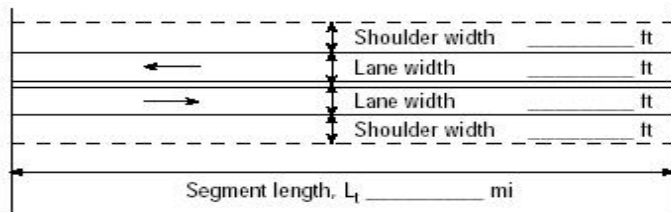

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | C |
| Volume to capacity ratio, v/c | 0.32 |

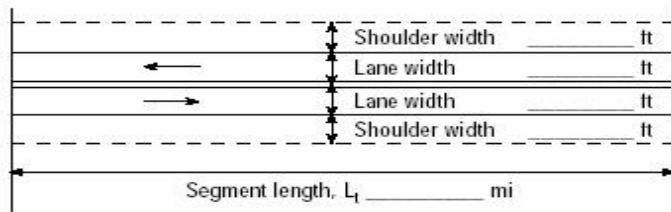

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1698 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 73.3 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 552.3 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.29 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|--|-------------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | EDH Blvd to Silva Valley Pkwy |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway <input type="checkbox"/> Class III highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.93 No-passing zone 100% % Trucks and Buses, P_T 1% % Recreational vehicles, P_R 0% Access points mi 0/mi </div> <div style="width: 45%; text-align: center;"> <input checked="" type="checkbox"/> Class II highway  Show North Arrow </div> </div> | |
| Analysis direction vol., V _d | 699veh/h | | |
| Opposing direction vol., V _o | 486veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 0.4 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.1 | 1.2 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+ P _T (E _T -1)+P _R (E _R -1)) | 0.999 | 0.998 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF* f _{g,ATS} * f _{HV,ATS}) | 752 | 524 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 44 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/ f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 2.2 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 49.4 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} + V _{o,ATS}) - f _{np,ATS} 37.3 mi/h | |
| | | Percent free flow speed, PFFS 75.5 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+ P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} * f _{g,PTSF}) | 752 | 523 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 65.1 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 30.4 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} / v _{d,PTSF} + V _{o,PTSF}) | | 83.0 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | D | | |
| Volume to capacity ratio, v/c | 0.44 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 75.5 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 751.6 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.44 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|---|--------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | EDH Blvd to Francisco Dr |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway <input type="checkbox"/> Class III highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.88 No-passing zone 100% % Trucks and Buses, P _T 1% % Recreational vehicles, P _R 0% Access points mi 1/mi | |
| Analysis direction vol., V _d | 404veh/h |  Show North Arrow | |
| Opposing direction vol., V _o | 702veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 0.4 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.2 | 1.1 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.998 | 0.999 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 460 | 799 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 44 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 1.2 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) | 47.1 mi/h |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} | 36.1 mi/h |
| | | Percent free flow speed, PFFS | 76.6 % |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 459 | 798 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 52.4 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 28.8 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 62.9 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | C | | |
| Volume to capacity ratio, v/c | 0.27 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1698 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 76.6 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 459.1 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 1.85 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|---|--------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Francisco Dr to EDH Blvd |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  <p>Show North Arrow</p> </div> <div> <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway <input type="checkbox"/> Class III highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.93 No-passing zone 100% % Trucks and Buses, P_T 1% % Recreational vehicles, P_R 0% Access points mi 1/mi </div> </div> | |
| Analysis direction vol., V _d | 702veh/h | | |
| Opposing direction vol., V _o | 404veh/h | | |
| Shoulder width ft | 6.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 0.4 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.1 | 1.3 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.999 | 0.997 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 756 | 436 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 46 | Base free-flow speed ⁴ , BFFS mi/h | |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) mi/h | |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) mi/h | |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 2.6 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) 51.5 mi/h | |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} 39.6 mi/h | |
| | | Percent free flow speed, PFFS 77.0 % | |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 755 | 434 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 64.1 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 30.4 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 83.4 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | D | | |
| Volume to capacity ratio, v/c | 0.44 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 77.0 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 754.8 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.10 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

| MULTILANE HIGHWAYS WORKSHEET(Direction 2) | | | |
|---|-----------|-----------------------------------|-----------------------------|
| <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-bottom: 5px;"></div> | | | |
| General Information | | Site Information | |
| Analyst | VZK | Highway/Direction to Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Sophia Pkwy to Francisco Dr |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description GVR Corridor Analysis | | | |
| <input type="checkbox"/> Oper.(LOS) <input type="checkbox"/> Des. (N) <input type="checkbox"/> Plan. (vp) | | | |
| Flow Inputs | | | |
| Volume, V (veh/h) | 966 | Peak-Hour Factor, PHF | 0.88 |
| AADT(veh/h) | | %Trucks and Buses, P _T | 3 |
| Peak-Hour Prop of AADT (veh/d) | | %RVs, P _R | 0 |
| Peak-Hour Direction Prop, D | | General Terrain: | Grade |
| DDHV (veh/h) | | Grade Length (mi) | 1.35 |
| Driver Type Adjustment | 1.00 | Up/Down % | 4.00 |
| | | Number of Lanes | 2 |
| Calculate Flow Adjustments | | | |
| f _p | 1.00 | E _R | 3.0 |
| E _T | 3.5 | f _{HV} | 0.930 |
| Speed Inputs | | Calc Speed Adj and FFS | |
| Lane Width, LW (ft) | 12.0 | f _{LW} (mi/h) | |
| Total Lateral Clearance, LC (ft) | 12.0 | f _{LC} (mi/h) | |
| Access Points, A (A/mi) | 0 | f _A (mi/h) | |
| Median Type, M | | f _M (mi/h) | |
| FFS (measured) | 59.0 | FFS (mi/h) | 59.0 |
| Base Free-Flow Speed, BFFS | | | |
| Operations | | Design | |
| <u>Operational (LOS)</u> | | <u>Design (N)</u> | |
| Flow Rate, v _p (pc/h/ln) | 590 | Required Number of Lanes, N | |
| Speed, S (mi/h) | 60.0 | Flow Rate, v _p (pc/h) | |
| D (pc/mi/ln) | 9.8 | Max Service Flow Rate (pc/h/ln) | |
| LOS | A | Design LOS | |
| Bicycle Level of Service | | | |

| | |
|--|-------|
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 548.9 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 2.40 |
| Bicycle level of service (Exhibit 15-4) | B |

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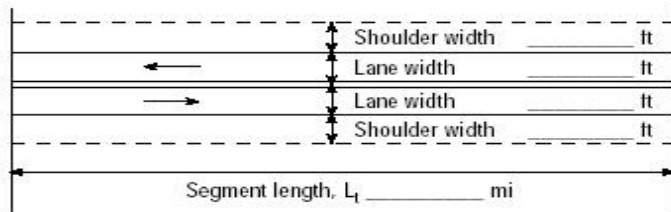

| MULTILANE HIGHWAYS WORKSHEET(Direction 1) | | | |
|---|-----------|-----------------------------------|-----------------------------|
| <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-bottom: 5px;"></div> | | | |
| General Information | | Site Information | |
| Analyst | VZK | Highway/Direction to Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | Sophia Pkwy to Francisco Dr |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description GVR Corridor Analysis | | | |
| <input type="checkbox"/> Oper.(LOS) <input type="checkbox"/> Des. (N) <input type="checkbox"/> Plan. (vp) | | | |
| Flow Inputs | | | |
| Volume, V (veh/h) | 1363 | Peak-Hour Factor, PHF | 0.95 |
| AADT(veh/h) | | %Trucks and Buses, P _T | 6 |
| Peak-Hour Prop of AADT (veh/d) | | %RVs, P _R | 0 |
| Peak-Hour Direction Prop, D | | General Terrain: | Grade |
| DDHV (veh/h) | | Grade Length (mi) | 1.35 |
| Driver Type Adjustment | 1.00 | Up/Down % | -4.00 |
| | | Number of Lanes | 2 |
| Calculate Flow Adjustments | | | |
| f _p | 1.00 | E _R | 1.2 |
| E _T | 1.5 | f _{HV} | 0.971 |
| Speed Inputs | | Calc Speed Adj and FFS | |
| Lane Width, LW (ft) | 12.0 | f _{LW} (mi/h) | |
| Total Lateral Clearance, LC (ft) | 12.0 | f _{LC} (mi/h) | |
| Access Points, A (A/mi) | 0 | f _A (mi/h) | |
| Median Type, M | | f _M (mi/h) | |
| FFS (measured) | 60.0 | FFS (mi/h) | 60.0 |
| Base Free-Flow Speed, BFFS | | | |
| Operations | | Design | |
| <u>Operational (LOS)</u> | | <u>Design (N)</u> | |
| Flow Rate, v _p (pc/h/ln) | 738 | Required Number of Lanes, N | |
| Speed, S (mi/h) | 60.0 | Flow Rate, v _p (pc/h) | |
| D (pc/mi/ln) | 12.3 | Max Service Flow Rate (pc/h/ln) | |
| LOS | B | Design LOS | |
| Bicycle Level of Service | | | |

| | |
|--|-------|
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 717.4 |
| Effective width, W_v (Eq. 15-29) ft | 24.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 3.38 |
| Bicycle level of service (Exhibit 15-4) | C |

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| DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET | | | |
|--|------------------------|---|----------------------------|
| General Information | | Site Information | |
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - WB |
| Agency or Company | KAI | From/To | Sophia Pkwy to County Line |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |
| Project Description: GVR Corridor Analysis | | | |
| Input Data | | | |
|  | | <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  <p>Show North Arrow</p> </div> <div> <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway <input type="checkbox"/> Class III highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Grade Length mi Up/down Peak-hour factor, PHF 0.88 No-passing zone 100% % Trucks and Buses, P_T 2 % % Recreational vehicles, P_R 0% Access points mi 1/mi </div> </div> | |
| Analysis direction vol., V _d | 693veh/h | | |
| Opposing direction vol., V _o | 1278veh/h | | |
| Shoulder width ft | 8.0 | | |
| Lane Width ft | 12.0 | | |
| Segment Length mi | 0.2 | | |
| Average Travel Speed | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-11 or 15-12) | 1.1 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV,ATS} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 0.998 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,ATS} (Exhibit 15-9) | 1.00 | 1.00 | |
| Demand flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{g,ATS} *f _{HV,ATS}) | 789 | 1452 | |
| Free-Flow Speed from Field Measurement | | Estimated Free-Flow Speed | |
| Mean speed of sample ³ , S _{FM} | 55 | Base free-flow speed ⁴ , BFFS | mi/h |
| Total demand flow rate, both directions, v | | Adj. for lane and shoulder width, ⁴ f _{LS} (Exhibit 15-7) | mi/h |
| Free-flow speed, FFS=S _{FM} +0.00776(v/f _{HV,ATS}) | | Adj. for access points ⁴ , f _A (Exhibit 15-8) | mi/h |
| Adj. for no-passing zones, f _{np,ATS} (Exhibit 15-15) | 0.9 mi/h | Free-flow speed, FFS (FFS=BFFS-f _{LS} -f _A) | 60.4 mi/h |
| | | Average travel speed, ATS _d =FFS-0.00776(v _{d,ATS} +V _{o,ATS})-f _{np,ATS} | 42.1 mi/h |
| | | Percent free flow speed, PFFS | 69.8 % |
| Percent Time-Spent-Following | | | |
| | Analysis Direction (d) | Opposing Direction (o) | |
| Passenger-car equivalents for trucks, E _T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Passenger-car equivalents for RVs, E _R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 | |
| Heavy-vehicle adjustment factor, f _{HV} =1/(1+P _T (E _T -1)+P _R (E _R -1)) | 1.000 | 1.000 | |
| Grade adjustment factor ¹ , f _{g,PTSF} (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 | |
| Directional flow rate ² , v _i (pc/h) v _i =V _i /(PHF*f _{HV,PTSF} *f _{g,PTSF}) | 788 | 1452 | |
| Base percent time-spent-following ⁴ , BPTSF _d (%)=100(1-e ^{av_d}) | | 75.3 | |
| Adj. for no-passing zone, f _{np,PTSF} (Exhibit 15-21) | | 14.5 | |
| Percent time-spent-following, PTSF _d (%)=BPTSF _d +f _{np,PTSF} *(v _{d,PTSF} /v _{d,PTSF} +V _{o,PTSF}) | | 80.4 | |
| Level of Service and Other Performance Measures | | | |
| Level of service, LOS (Exhibit 15-3) | D | | |
| Volume to capacity ratio, v/c | 0.46 | | |

| | |
|--|-------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 1700 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 69.8 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 787.5 |
| Effective width, W_v (Eq. 15-29) ft | 28.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 1.65 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

| General Information | | Site Information | |
|----------------------|-----------|-------------------------------|----------------------------|
| Analyst | VZK | Highway / Direction of Travel | Green Valley Road - EB |
| Agency or Company | KAI | From/To | County Line to Sophia Pkwy |
| Date Performed | 8/20/2014 | Jurisdiction | El Dorado County |
| Analysis Time Period | PM | Analysis Year | 2014 |

Project Description: GVR Corridor Analysis

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.92

No-passing zone 100%

% Trucks and Buses, P_T 2%

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

| | |
|--------------------------------|-----------|
| Analysis direction vol., V_d | 1278veh/h |
| Opposing direction vol., V_o | 693veh/h |
| Shoulder width ft | 8.0 |
| Lane Width ft | 12.0 |
| Segment Length mi | 0.2 |

Average Travel Speed

| | Analysis Direction (d) | Opposing Direction (o) |
|---|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12) | 1.0 | 1.1 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 0.998 |
| Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9) | 1.00 | 1.00 |
| Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$ | 1389 | 755 |

| Free-Flow Speed from Field Measurement | Estimated Free-Flow Speed |
|--|--|
| Mean speed of sample ³ , S_{FM} 53 | Base free-flow speed ⁴ , BFFS <i>mi/h</i> |
| Total demand flow rate, both directions, v | Adj. for lane and shoulder width ⁴ , f_{LS} (Exhibit 15-7) <i>mi/h</i> |
| Free-flow speed, $FFS = S_{FM} + 0.00776(v / f_{HV,ATS})$ | Adj. for access points ⁴ , f_A (Exhibit 15-8) <i>mi/h</i> |
| Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 1.6 <i>mi/h</i> | Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 62.9 <i>mi/h</i> |
| | Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 44.7 <i>mi/h</i> |
| | Percent free flow speed, PFFS 71.0 % |

Percent Time-Spent-Following

| | Analysis Direction (d) | Opposing Direction (o) |
|--|------------------------|------------------------|
| Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19) | 1.0 | 1.0 |
| Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$ | 1.000 | 1.000 |
| Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17) | 1.00 | 1.00 |
| Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$ | 1389 | 753 |

| | |
|---|------|
| Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$ | 84.4 |
| Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21) | 15.1 |
| Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$ | 94.2 |

Level of Service and Other Performance Measures

| | |
|--------------------------------------|------|
| Level of service, LOS (Exhibit 15-3) | E |
| Volume to capacity ratio, v/c | 0.82 |

| | |
|--|--------|
| Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h | 0 |
| Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h | 1700 |
| Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only) | 71.0 |
| Bicycle Level of Service | |
| Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h | 1389.1 |
| Effective width, W_v (Eq. 15-29) ft | 28.00 |
| Effective speed factor, S_t (Eq. 15-30) | 4.62 |
| Bicycle level of service score, BLOS (Eq. 15-31) | 1.94 |
| Bicycle level of service (Exhibit 15-4) | B |
| Notes | |
| <p>1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p> | |