# “Q”

# Applicant Response to Public Comments After April 20, 2016

## Part 4

**Frogs Leap Winery - P14-00054**
**Planning Commission Meeting of August 17, 2016**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 52 | 0 | 80 | 10 | 3 | 5 | 50 | 367 | 0 | 1 | 921 | 41 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 57 | 0 | 87 | 11 | 3 | 5 | 54 | 399 | 0 | 1 | 1001 | 45 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 1 | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1540 | 1533 | 1023 | 1554 | 1555 | 399 | 1046 | | | 399 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1540 | 1533 | 1023 | 1554 | 1555 | 399 | 1046 | | | 399 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 34 | 100 | 70 | 82 | 97 | 99 | 92 | | | 100 | | |
| cM capacity (veh/h) | 85 | 107 | 286 | 60 | 104 | 651 | 665 | | | 1160 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 143 | 20 | 54 | 399 | 1 | 1046 |
| Volume Left | 57 | 11 | 54 | 0 | 1 | 0 |
| Volume Right | 87 | 5 | 0 | 0 | 0 | 45 |
| cSH | 171 | 89 | 665 | 1700 | 1160 | 1700 |
| Volume to Capacity | 0.84 | 0.22 | 0.08 | 0.23 | 0.00 | 0.62 |
| Queue Length 95th (ft) | 145 | 20 | 7 | 0 | 0 | 0 |
| Control Delay (s) | 85.8 | 56.9 | 10.9 | 0.0 | 8.1 | 0.0 |
| Lane LOS | F | F | B | | A | |
| Approach Delay (s) | 85.8 | 56.9 | 1.3 | | 0.0 | |
| Approach LOS | F | F | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 8.4 | | | |
| Intersection Capacity Utilization | 69.2% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 83 | 2 | 78 | 16 | 1 | 8 | 55 | 478 | 7 | 18 | 616 | 50 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 90 | 2 | 79 | 17 | 1 | 9 | 60 | 520 | 8 | 20 | 670 | 54 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 1 | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1384 | 1383 | 697 | 1392 | 1406 | 523 | 724 | | | 527 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1384 | 1383 | 697 | 1392 | 1406 | 523 | 724 | | | 527 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 18 | 98 | 82 | 81 | 99 | 98 | 93 | | | 98 | | |
| cM capacity (veh/h) | 110 | 131 | 441 | 90 | 127 | 554 | 879 | | | 1040 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 172 | 27 | 60 | 527 | 20 | 724 |
| Volume Left | 90 | 17 | 60 | 0 | 20 | 0 |
| Volume Right | 79 | 9 | 0 | 8 | 0 | 54 |
| cSH | 179 | 125 | 879 | 1700 | 1040 | 1700 |
| Volume to Capacity | 0.96 | 0.22 | 0.07 | 0.31 | 0.02 | 0.43 |
| Queue Length 95th (ft) | 190 | 20 | 5 | 0 | 1 | 0 |
| Control Delay (s) | 110.2 | 41.5 | 9.4 | 0.0 | 8.5 | 0.0 |
| Lane LOS | F | E | A | | A | |
| Approach Delay (s) | 110.2 | 41.5 | 1.0 | | 0.2 | |
| Approach LOS | F | E | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 13.6 | | | |
| Intersection Capacity Utilization | 56.9% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 101 | 204 | 66 | 90 | 51 | 29 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 110 | 222 | 72 | 98 | 55 | 32 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 332 | | 462 | 221 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 332 | | 462 | 221 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 94 | | 89 | 96 |
| cM capacity (veh/h) | | | 1228 | | 525 | 819 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| **Volume Total** | **332** | **170** | **87** |
| Volume Left | 0 | 72 | 55 |
| Volume Right | 222 | 0 | 32 |
| cSH | 1700 | 1228 | 604 |
| Volume to Capacity | 0.20 | 0.06 | 0.14 |
| Queue Length 95th (ft) | 0 | 5 | 13 |
| Control Delay (s) | 0.0 | 3.7 | 12.0 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 3.7 | 12.0 |
| Approach LOS | | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 2.8 | | |
| Intersection Capacity Utilization | | 40.8% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 146 | 39 | 43 | 145 | 20 | 40 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 159 | 42 | 47 | 158 | 22 | 43 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 201 | | 431 | 180 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 201 | | 431 | 180 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 97 | | 96 | 95 |
| cM capacity (veh/h) | | | 1371 | | 562 | 863 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 201 | 204 | 65 |
| Volume Left | 0 | 47 | 22 |
| Volume Right | 42 | 0 | 43 |
| cSH | 1700 | 1371 | 732 |
| Volume to Capacity | 0.12 | 0.03 | 0.09 |
| Queue Length 95th (ft) | 0 | 3 | 7 |
| Control Delay (s) | 0.0 | 2.0 | 10.4 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 2.0 | 10.4 |
| Approach LOS | | | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 2.3 | | |
| Intersection Capacity Utilization | | 33.6% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 8 | 16 | 3 | 42 | 35 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 9 | 17 | 3 | 46 | 38 | 3 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | 1 | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 92 | 40 | 41 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 92 | 40 | 41 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 98 | 100 | | | |
| cM capacity (veh/h) | 906 | 1032 | 1568 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 26 | 49 | 41 |
| Volume Left | 9 | 3 | 0 |
| Volume Right | 17 | 0 | 3 |
| cSH | 1548 | 1568 | 1700 |
| Volume to Capacity | 0.02 | 0.00 | 0.02 |
| Queue Length 95th (ft) | 1 | 0 | 0 |
| Control Delay (s) | 8.7 | 0.5 | 0.0 |
| Lane LOS | A | A | |
| Approach Delay (s) | 8.7 | 0.5 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.2 | | |
| Intersection Capacity Utilization | 14.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 19 | 27 | 19 | 105 | 95 | 21 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 21 | 29 | 21 | 114 | 103 | 23 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | 1 | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 270 | 115 | 126 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 270 | 115 | 126 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 97 | 97 | 99 | | | |
| cM capacity (veh/h) | 709 | 938 | 1460 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 50 | 135 | 126 |
| Volume Left | 21 | 21 | 0 |
| Volume Right | 29 | 0 | 23 |
| cSH | 1598 | 1460 | 1700 |
| Volume to Capacity | 0.03 | 0.01 | 0.07 |
| Queue Length 95th (ft) | 2 | 1 | 0 |
| Control Delay (s) | 9.5 | 1.2 | 0.0 |
| Lane LOS | A | A | |
| Approach Delay (s) | 9.5 | 1.2 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 23.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 35 | 0 | 56 | 10 | 3 | 5 | 42 | 356 | 0 | 1 | 893 | 35 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 38 | 0 | 61 | 11 | 3 | 5 | 46 | 387 | 0 | 1 | 971 | 38 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 1 | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1477 | 1470 | 990 | 1482 | 1489 | 387 | 1009 | | | 387 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1477 | 1470 | 990 | 1482 | 1489 | 387 | 1009 | | | 387 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 60 | 100 | 80 | 86 | 97 | 99 | 93 | | | 100 | | |
| cM capacity (veh/h) | 96 | 119 | 299 | 78 | 116 | 661 | 687 | | | 1172 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 99 | 20 | 46 | 387 | 1 | 1009 |
| Volume Left | 38 | 11 | 46 | 0 | 1 | 0 |
| Volume Right | 61 | 5 | 0 | 0 | 0 | 38 |
| cSH | 207 | 111 | 687 | 1700 | 1172 | 1700 |
| Volume to Capacity | 0.48 | 0.18 | 0.07 | 0.23 | 0.00 | 0.59 |
| Queue Length 95th (ft) | 58 | 15 | 5 | 0 | 0 | 0 |
| Control Delay (s) | 37.3 | 44.1 | 10.6 | 0.0 | 8.1 | 0.0 |
| Lane LOS | E | E | B | | A | |
| Approach Delay (s) | 37.3 | 44.1 | 1.1 | | 0.0 | |
| Approach LOS | E | E | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.2 | | | |
| Intersection Capacity Utilization | 65.9% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 65 | 2 | 57 | 16 | 1 | 8 | 42 | 464 | 7 | 18 | 597 | 37 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 71 | 2 | 62 | 17 | 1 | 9 | 46 | 504 | 8 | 20 | 649 | 40 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 1 | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1313 | 1311 | 669 | 1320 | 1328 | 508 | 689 | | | 512 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1313 | 1311 | 669 | 1320 | 1328 | 508 | 689 | | | 512 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 44 | 99 | 86 | 84 | 99 | 98 | 95 | | | 98 | | |
| cM capacity (veh/h) | 126 | 148 | 458 | 109 | 145 | 565 | 905 | | | 1053 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 135 | 27 | 46 | 512 | 20 | 689 |
| Volume Left | 71 | 17 | 46 | 0 | 20 | 0 |
| Volume Right | 62 | 9 | 0 | 8 | 0 | 40 |
| cSH | 211 | 148 | 905 | 1700 | 1053 | 1700 |
| Volume to Capacity | 0.64 | 0.18 | 0.05 | 0.30 | 0.02 | 0.41 |
| Queue Length 95th (ft) | 95 | 16 | 4 | 0 | 1 | 0 |
| Control Delay (s) | 47.9 | 34.6 | 9.2 | 0.0 | 8.5 | 0.0 |
| Lane LOS | E | D | A | | A | |
| Approach Delay (s) | 47.9 | 34.6 | 0.8 | | 0.2 | |
| Approach LOS | E | D | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.6 | | | |
| Intersection Capacity Utilization | 50.5% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 82 | 184 | 40 | 51 | 32 | 11 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 89 | 200 | 43 | 55 | 35 | 12 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 289 | | 332 | 189 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 289 | | 332 | 189 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 97 | | 95 | 99 |
| cM capacity (veh/h) | | | 1273 | | 641 | 853 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 289 | 99 | 47 |
| Volume Left | 0 | 43 | 35 |
| Volume Right | 200 | 0 | 12 |
| cSH | 1700 | 1273 | 684 |
| Volume to Capacity | 0.17 | 0.03 | 0.07 |
| Queue Length 95th (ft) | 0 | 3 | 5 |
| Control Delay (s) | 0.0 | 3.6 | 10.6 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 3.6 | 10.6 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.0 | | |
| Intersection Capacity Utilization | 33.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 95 | 35 | 18 | 97 | 18 | 13 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 103 | 38 | 20 | 105 | 20 | 14 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 141 | | 267 | 122 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 141 | | 267 | 122 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 99 | | 97 | 98 |
| cM capacity (veh/h) | | | 1442 | | 713 | 929 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 141 | 125 | 34 |
| Volume Left | 0 | 20 | 20 |
| Volume Right | 38 | 0 | 14 |
| cSH | 1700 | 1442 | 790 |
| Volume to Capacity | 0.08 | 0.01 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 3 |
| Control Delay (s) | 0.0 | 1.3 | 9.8 |
| Lane LOS | | A | A |
| Approach Delay (s) | 0.0 | 1.3 | 9.8 |
| Approach LOS | | | A |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.6 | | |
| Intersection Capacity Utilization | 26.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 8 | 16 | 3 | 80 | 64 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 9 | 17 | 3 | 87 | 70 | 3 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | 1 | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 165 | 71 | 73 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 165 | 71 | 73 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 98 | 100 | | | |
| cM capacity (veh/h) | 824 | 991 | 1527 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 26 | 90 | 73 |
| Volume Left | 9 | 3 | 0 |
| Volume Right | 17 | 0 | 3 |
| cSH | 1487 | 1527 | 1700 |
| Volume to Capacity | 0.02 | 0.00 | 0.04 |
| Queue Length 95th (ft) | 1 | 0 | 0 |
| Control Delay (s) | 8.9 | 0.3 | 0.0 |
| Lane LOS | A | A | |
| Approach Delay (s) | 8.9 | 0.3 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.4 | | |
| Intersection Capacity Utilization | 16.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 19 | 27 | 19 | 149 | 137 | 21 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 21 | 29 | 21 | 162 | 149 | 23 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | 1 | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 364 | 160 | 172 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 364 | 160 | 172 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 97 | 97 | 99 | | | |
| cM capacity (veh/h) | 626 | 885 | 1405 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 50 | 183 | 172 |
| Volume Left | 21 | 21 | 0 |
| Volume Right | 29 | 0 | 23 |
| cSH | 1507 | 1405 | 1700 |
| Volume to Capacity | 0.03 | 0.01 | 0.10 |
| Queue Length 95th (ft) | 3 | 1 | 0 |
| Control Delay (s) | 9.9 | 1.0 | 0.0 |
| Lane LOS | A | A | |
| Approach Delay (s) | 9.9 | 1.0 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.7 | | |
| Intersection Capacity Utilization | 30.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 52 | 0 | 81 | 10 | 3 | 5 | 50 | 367 | 0 | 1 | 921 | 41 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 57 | 0 | 88 | 11 | 3 | 5 | 54 | 399 | 0 | 1 | 1001 | 45 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 1 | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1540 | 1533 | 1023 | 1555 | 1555 | 399 | 1046 | | | 399 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1540 | 1533 | 1023 | 1555 | 1555 | 399 | 1046 | | | 399 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 34 | 100 | 69 | 82 | 97 | 99 | 92 | | | 100 | | |
| cM capacity (veh/h) | 85 | 107 | 286 | 60 | 104 | 651 | 665 | | | 1160 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 145 | 20 | 54 | 399 | 1 | 1046 |
| Volume Left | 57 | 11 | 54 | 0 | 1 | 0 |
| Volume Right | 88 | 5 | 0 | 0 | 0 | 45 |
| cSH | 172 | 88 | 665 | 1700 | 1160 | 1700 |
| Volume to Capacity | 0.84 | 0.22 | 0.08 | 0.23 | 0.00 | 0.62 |
| Queue Length 95th (ft) | 146 | 20 | 7 | 0 | 0 | 0 |
| Control Delay (s) | 85.8 | 57.2 | 10.9 | 0.0 | 8.1 | 0.0 |
| Lane LOS | F | F | B | | A | |
| Approach Delay (s) | 85.8 | 57.2 | 1.3 | | 0.0 | |
| Approach LOS | F | F | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 8.5 | | | |
| Intersection Capacity Utilization | 69.3% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 86 | 2 | 78 | 16 | 1 | 8 | 60 | 478 | 7 | 18 | 616 | 54 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 93 | 2 | 85 | 17 | 1 | 9 | 65 | 520 | 8 | 20 | 670 | 59 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 1 | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1397 | 1396 | 699 | 1406 | 1421 | 523 | 728 | | | 527 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1397 | 1396 | 699 | 1406 | 1421 | 523 | 728 | | | 527 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 13 | 98 | 81 | 80 | 99 | 98 | 93 | | | 98 | | |
| cM capacity (veh/h) | 108 | 128 | 440 | 86 | 124 | 554 | 875 | | | 1040 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NE 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 180 | 27 | 65 | 527 | 20 | 728 |
| Volume Left | 93 | 17 | 65 | 0 | 20 | 0 |
| Volume Right | 85 | 9 | 0 | 8 | 0 | 59 |
| cSH | 176 | 120 | 875 | 1700 | 1040 | 1700 |
| Volume to Capacity | 1.02 | 0.23 | 0.07 | 0.31 | 0.02 | 0.43 |
| Queue Length 95th (ft) | 212 | 20 | 6 | 0 | 1 | 0 |
| Control Delay (s) | 127.6 | 43.4 | 9.4 | 0.0 | 8.5 | 0.0 |
| Lane LOS | F | E | A | | A | |
| Approach Delay (s) | 127.6 | 43.4 | 1.0 | | 0.2 | |
| Approach LOS | F | E | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 16.1 | | | |
| Intersection Capacity Utilization | 57.1% | ICU Level of Service | | B |
| Analysis Period (min) | 15 | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 102 | 204 | 67 | 92 | 51 | 29 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 111 | 222 | 73 | 100 | 55 | 32 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 333 | | 467 | 222 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 333 | | 467 | 222 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 94 | | 89 | 96 |
| cM capacity (veh/h) | | | 1227 | | 521 | 818 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 333 | 173 | 87 |
| Volume Left | 0 | 73 | 55 |
| Volume Right | 222 | 0 | 32 |
| cSH | 1700 | 1227 | 600 |
| Volume to Capacity | 0.20 | 0.06 | 0.14 |
| Queue Length 95th (ft) | 0 | 5 | 13 |
| Control Delay (s) | 0.0 | 3.7 | 12.0 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 3.7 | 12.0 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.8 | | |
| Intersection Capacity Utilization | 41.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 153 | 39 | 46 | 154 | 20 | 41 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 166 | 42 | 50 | 167 | 22 | 45 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 209 | | 455 | 188 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 209 | | 455 | 188 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 96 | | 96 | 95 |
| cM capacity (veh/h) | | | 1362 | | 543 | 855 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 209 | 217 | 86 |
| Volume Left | 0 | 50 | 22 |
| Volume Right | 42 | 0 | 45 |
| cSH | 1700 | 1362 | 719 |
| Volume to Capacity | 0.12 | 0.04 | 0.09 |
| Queue Length 95th (ft) | 0 | 3 | 8 |
| Control Delay (s) | 0.0 | 2.0 | 10.5 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 2.0 | 10.5 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.3 | | |
| Intersection Capacity Utilization | 34.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 8 | 16 | 3 | 105 | 84 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 9 | 17 | 3 | 114 | 91 | 3 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | 1 | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 214 | 93 | 95 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 214 | 93 | 95 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 98 | 100 | | | |
| cM capacity (veh/h) | 773 | 964 | 1499 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 26 | 117 | 95 |
| Volume Left | 9 | 3 | 0 |
| Volume Right | 17 | 0 | 3 |
| cSH | 1446 | 1499 | 1700 |
| Volume to Capacity | 0.02 | 0.00 | 0.06 |
| Queue Length 95th (ft) | 1 | 0 | 0 |
| Control Delay (s) | 9.1 | 0.2 | 0.0 |
| Lane LOS | A | A | |
| Approach Delay (s) | 9.1 | 0.2 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 17.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 19 | 27 | 19 | 210 | 130 | 21 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 21 | 29 | 21 | 228 | 141 | 23 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | 1 | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 422 | 153 | 164 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 422 | 153 | 164 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 96 | 97 | 99 | | | |
| cM capacity (veh/h) | 580 | 893 | 1414 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 50 | 249 | 164 |
| Volume Left | 21 | 21 | 0 |
| Volume Right | 29 | 0 | 23 |
| cSH | 1403 | 1414 | 1700 |
| Volume to Capacity | 0.04 | 0.01 | 0.10 |
| Queue Length 95th (ft) | 3 | 1 | 0 |
| Control Delay (s) | 10.1 | 0.7 | 0.0 |
| Lane LOS | B | A | |
| Approach Delay (s) | 10.1 | 0.7 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.5 | | |
| Intersection Capacity Utilization | 33.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 49 | 0 | 76 | 10 | 3 | 5 | 49 | 585 | 0 | 1 | 1467 | 40 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 53 | 0 | 83 | 11 | 3 | 5 | 53 | 636 | 0 | 1 | 1595 | 43 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 1 | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2368 | 2361 | 1616 | 2380 | 2383 | 636 | 1638 | | | 636 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2368 | 2361 | 1616 | 2380 | 2383 | 636 | 1638 | | | 636 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 0 | 100 | 35 | 0 | 89 | 99 | 87 | | | 100 | | |
| cM capacity (veh/h) | 20 | 31 | 128 | 8 | 30 | 478 | 395 | | | 948 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 136 | 20 | 53 | 636 | 1 | 1638 |
| Volume Left | 53 | 11 | 53 | 0 | 1 | 0 |
| Volume Right | 83 | 5 | 0 | 0 | 0 | 43 |
| cSH | 41 | 13 | 395 | 1700 | 948 | 1700 |
| Volume to Capacity | 3.30 | 1.56 | 0.13 | 0.37 | 0.00 | 0.96 |
| Queue Length 95th (ft) | Err | 80 | 12 | 0 | 0 | 0 |
| Control Delay (s) | Err | 885.9 | 15.5 | 0.0 | 8.8 | 0.0 |
| Lane LOS | F | F | C | | A | |
| Approach Delay (s) | Err | 885.9 | 1.2 | | 0.0 | |
| Approach LOS | F | F | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 554.3 | | | |
| Intersection Capacity Utilization | 97.7% | ICU Level of Service | F | |
| Analysis Period (min) | 15 | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 78 | 2 | 69 | 16 | 1 | 8 | 54 | 763 | 7 | 18 | 981 | 49 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 85 | 2 | 75 | 17 | 1 | 9 | 59 | 829 | 8 | 20 | 1066 | 53 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 1 | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2088 | 2086 | 1093 | 2095 | 2109 | 833 | 1120 | | | 837 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2088 | 2086 | 1093 | 2095 | 2109 | 833 | 1120 | | | 837 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 0 | 95 | 71 | 27 | 98 | 98 | 91 | | | 98 | | |
| cM capacity (veh/h) | 34 | 47 | 261 | 24 | 45 | 368 | 624 | | | 797 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 162 | 27 | 59 | 837 | 20 | 1120 |
| Volume Left | 85 | 17 | 59 | 0 | 20 | 0 |
| Volume Right | 75 | 9 | 0 | 8 | 0 | 53 |
| cSH | 57 | 35 | 624 | 1700 | 797 | 1700 |
| Volume to Capacity | 2.84 | 0.77 | 0.09 | 0.49 | 0.02 | 0.66 |
| Queue Length 95th (ft) | 418 | 68 | 8 | 0 | 2 | 0 |
| Control Delay (s) | 981.8 | 252.9 | 11.4 | 0.0 | 9.6 | 0.0 |
| Lane LOS | F | F | B | | A | |
| Approach Delay (s) | 981.8 | 252.9 | 0.7 | | 0.2 | |
| Approach LOS | F | F | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 75.0 | | | |
| Intersection Capacity Utilization | 72.2% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 554 | 190 | 63 | 364 | 49 | 28 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 602 | 207 | 68 | 396 | 53 | 30 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 809 | | 1238 | 705 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 809 | | 1238 | 705 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 92 | | 70 | 93 |
| cM capacity (veh/h) | | | 817 | | 178 | 436 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 809 | 464 | 84 |
| Volume Left | 0 | 68 | 53 |
| Volume Right | 207 | 0 | 30 |
| cSH | 1700 | 817 | 227 |
| Volume to Capacity | 0.48 | 0.08 | 0.37 |
| Queue Length 95th (ft) | 0 | 7 | 40 |
| Control Delay (s) | 0.0 | 2.4 | 29.9 |
| Lane LOS | | A | D |
| Approach Delay (s) | 0.0 | 2.4 | 29.9 |
| Approach LOS | | | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.7 | | |
| Intersection Capacity Utilization | 77.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

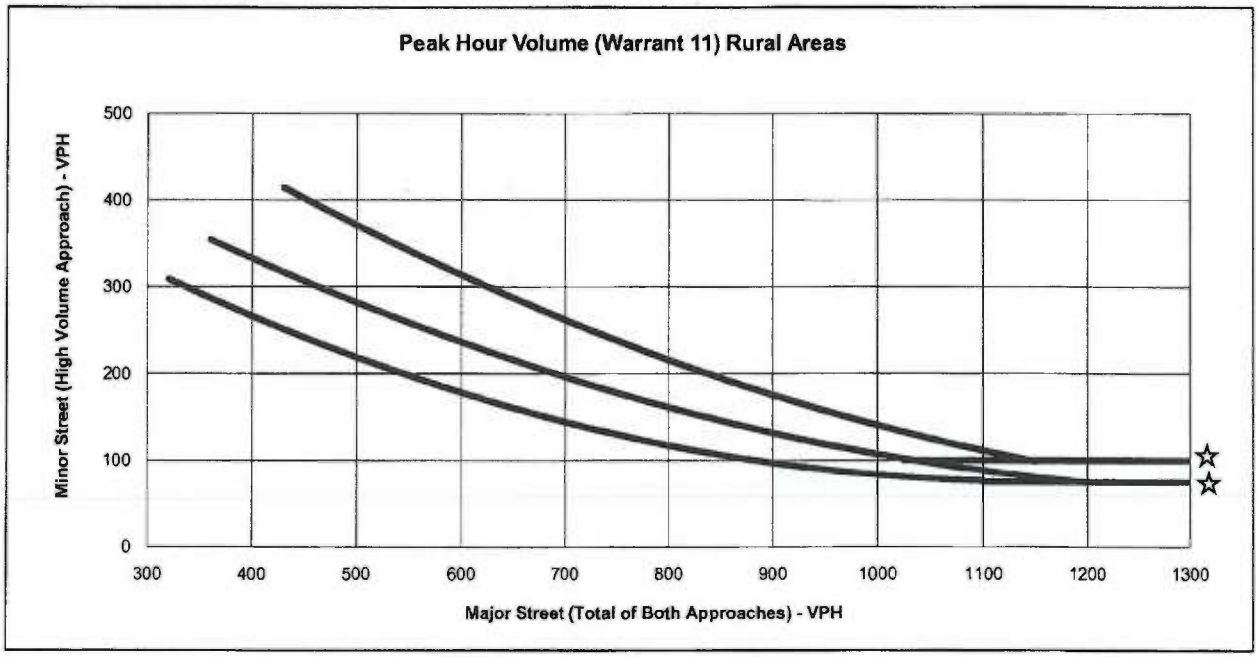
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 484 | 36 | 42 | 484 | 19 | 39 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 526 | 39 | 46 | 526 | 21 | 42 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 565 | | 1163 | 546 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 565 | | 1163 | 546 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 95 | | 90 | 92 |
| cM capacity (veh/h) | | | 1007 | | 205 | 538 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 565 | 572 | 63 |
| Volume Left | 0 | 46 | 21 |
| Volume Right | 39 | 0 | 42 |
| cSH | 1700 | 1007 | 352 |
| Volume to Capacity | 0.33 | 0.05 | 0.18 |
| Queue Length 95th (ft) | 0 | 4 | 16 |
| Control Delay (s) | 0.0 | 1.2 | 17.5 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 1.2 | 17.5 |
| Approach LOS | | | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.5 | | | |
| Intersection Capacity Utilization | 68.9% | ICU Level of Service | | C |
| Analysis Period (min) | 15 | | | |

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

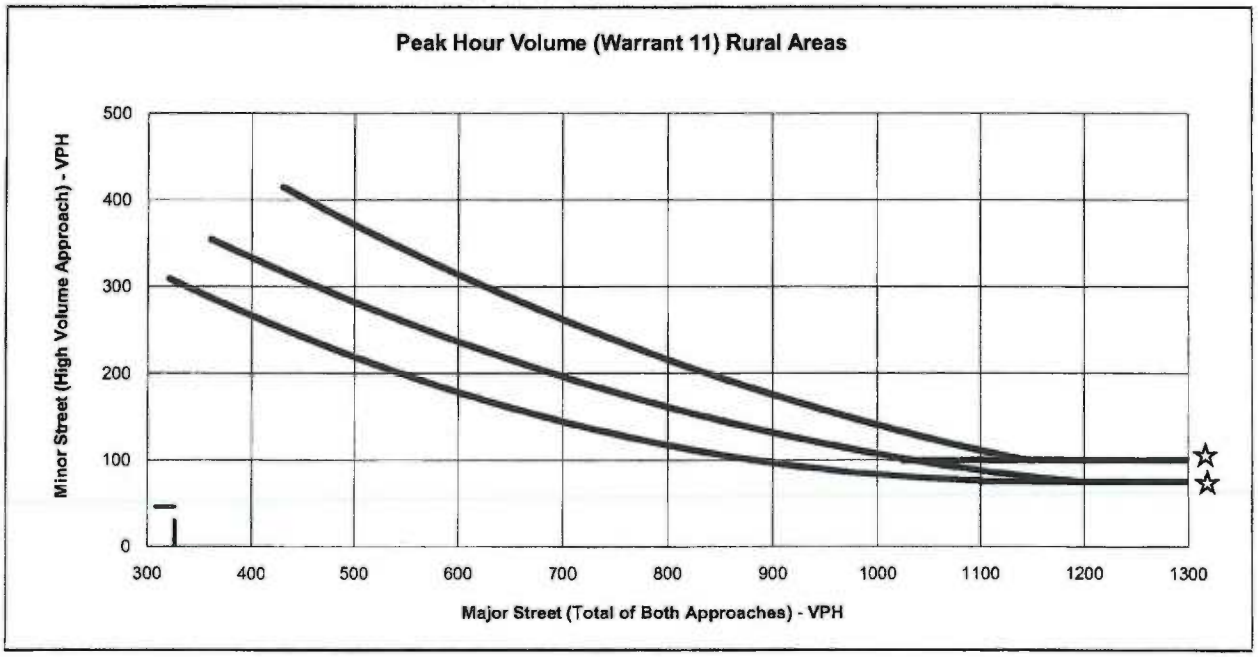



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

| | |
|---|---|
| Intersection: | Frog's Leap Driveway / Conn Creek Road (S.R. 128) |
| Scenario: | Weekday PM Peak Hour----Near-Term plus Project Conditions (worst case) |
| Minor St. Volume: | 24 |
| Major St. Volume: | 150 |
| Warrant Met?: | **NO** |

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

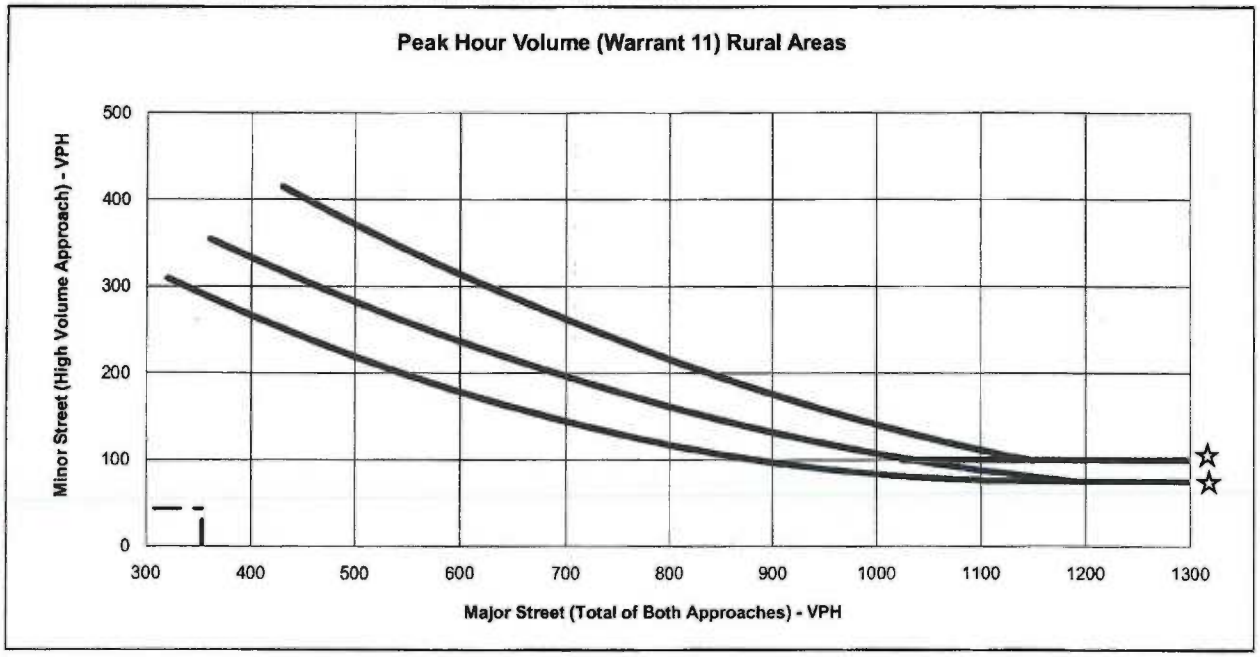



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection: Frog's Leap Driveway / Conn Creek Road (S.R. 128)
Scenario: Saturday mid-day peak hour -- Near-Term plus Project Conditions (worst case)
Minor St. Volume: 46
Major St. Volume: 326
Warrant Met?: **NO**

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 360 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

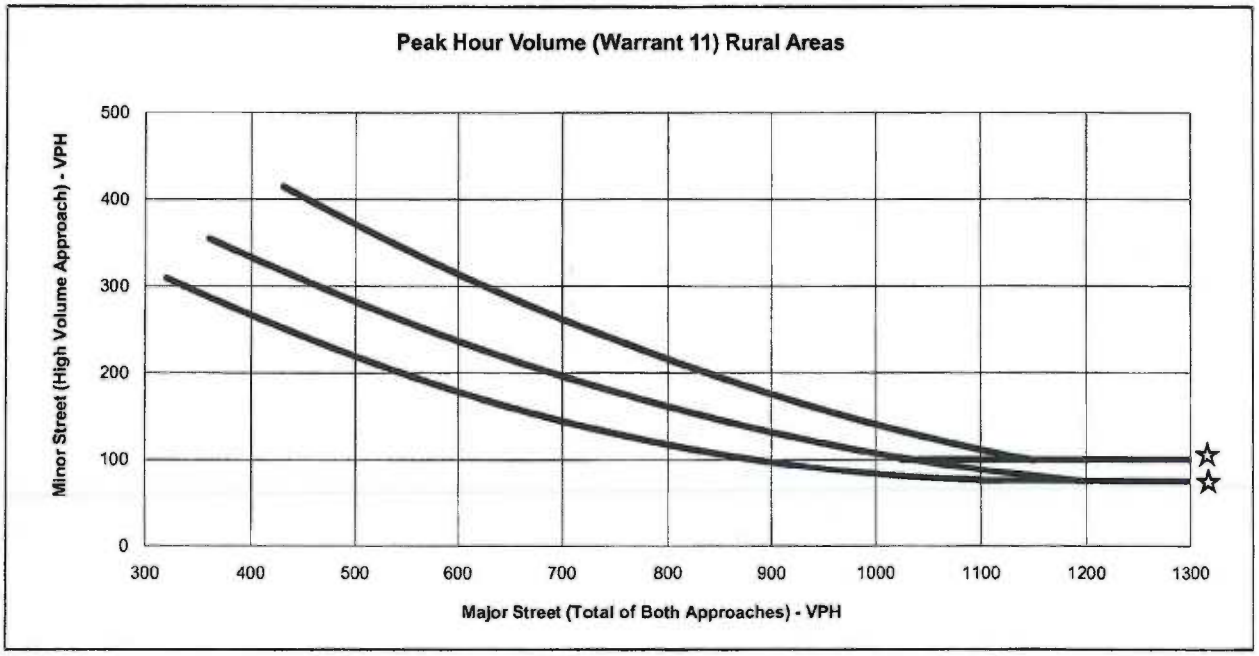



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

| | |
|---|---|
| Intersection: | Rutherford Road / Conn Creek Road (S.R. 128) |
| Scenario: | Weekday PM Peak Hour --- Existing Conditions |
| Minor St. Volume: | 43 |
| Major St. Volume: | 353 |
| Warrant Met?: | **NO** |

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

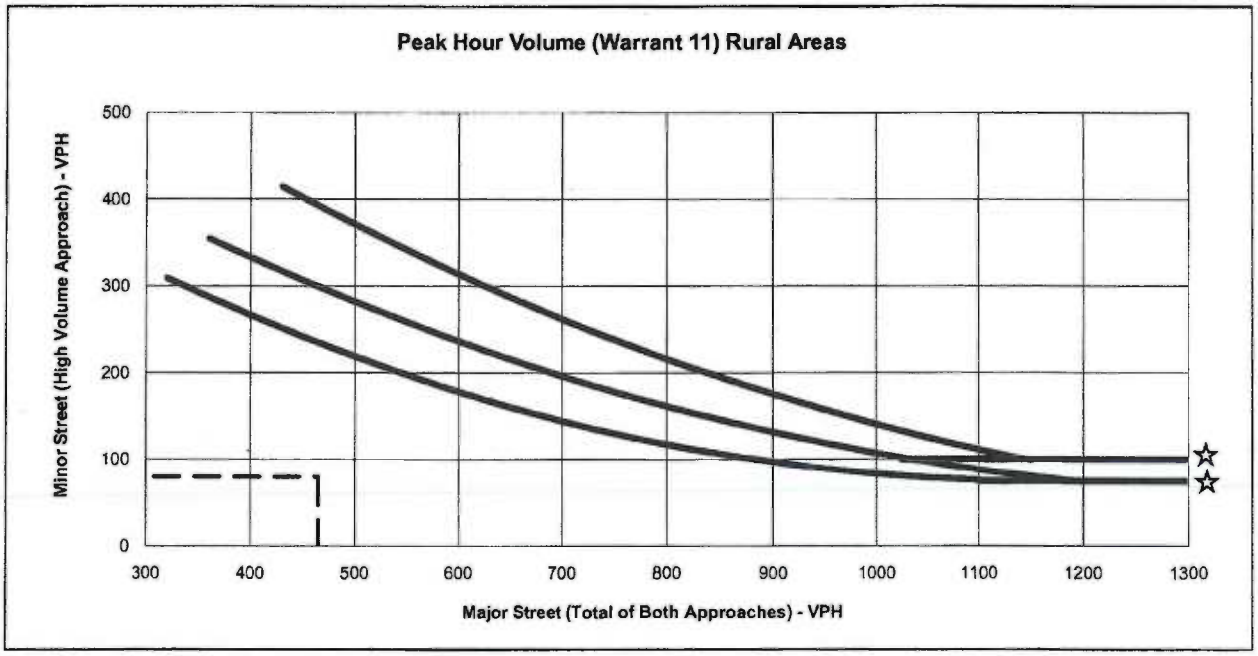



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection: Rutherford Road / Conn Creek Road (S.R. 128)
Scenario: Saturday mid-day peak hour -- Existing Conditions
Minor St. Volume: 30
Major St. Volume: 226
Warrant Met?: **NO**

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

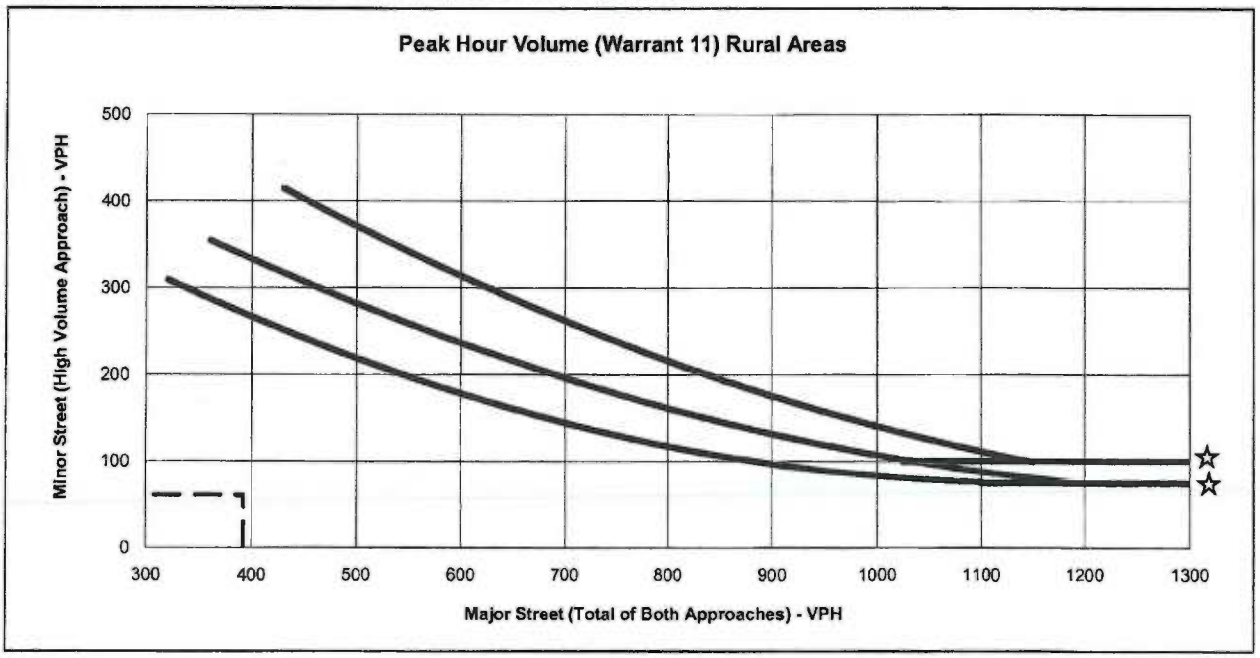



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection: Rutherford Road / Conn Creek Road (S.R. 128)
Scenario: Weekday PM Peak Hour --- Near-Term plus Project Conditions (Worst Case)
Minor St. Volume: 80
Major St. Volume: 465
Warrant Met?: **NO**

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

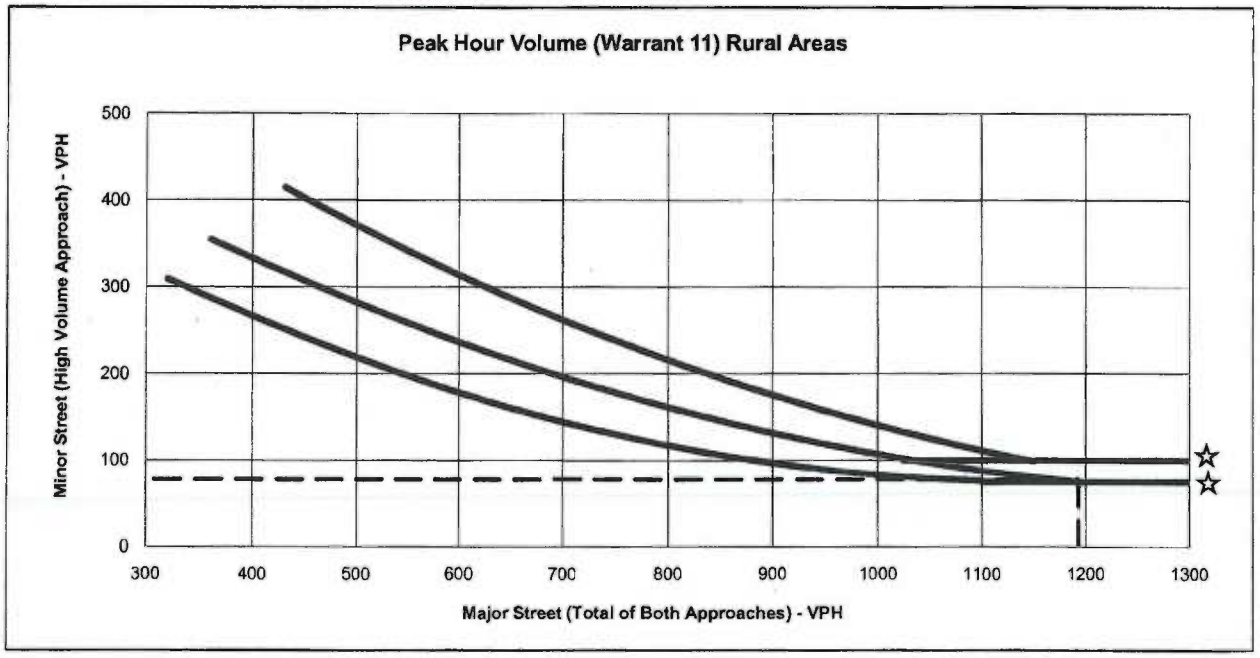



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

| | |
|---|---|
| Intersection: | Rutherford Road / Conn Creek Road (S.R. 128) |
| Scenario: | Saturday mid-day peak hour – Near-Term plus Project Conditions (Worst Case) |
| Minor St. Volume: | 61 |
| Major St. Volume: | 392 |
| Warrant Met?: | **NO** |

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

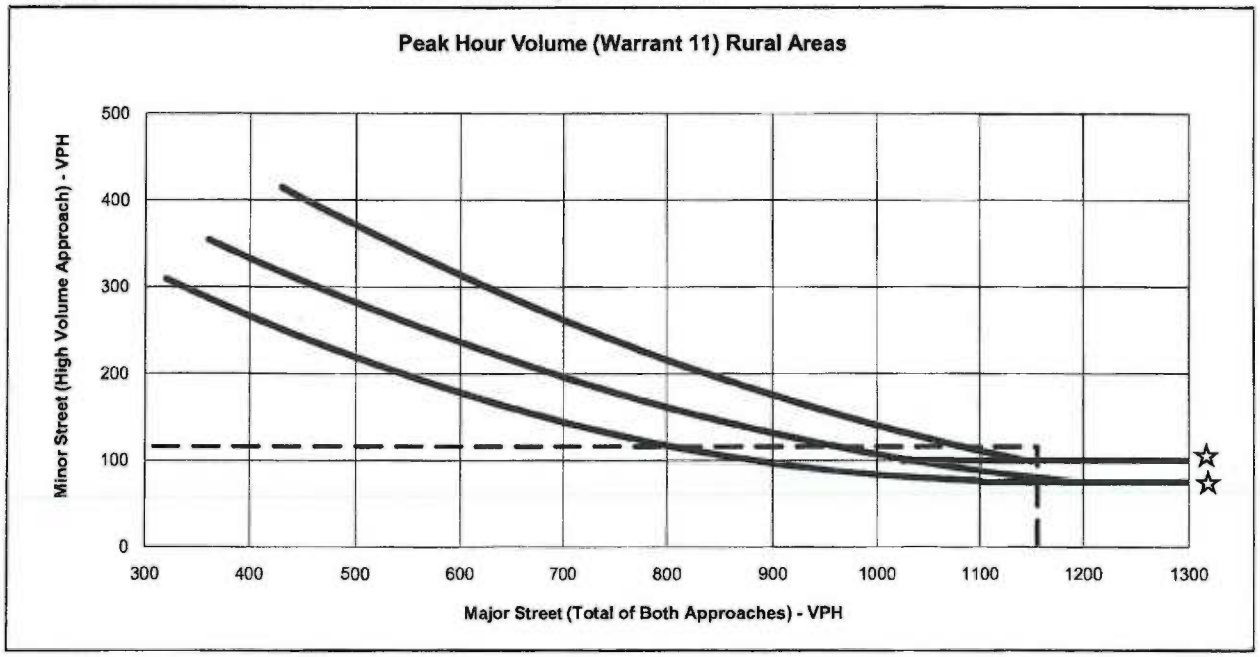



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

| | |
|---|---|
| Intersection: | Silverado Trail / Conn Creek Road (S.R. 128) |
| Scenario: | Weekday PM Peak Hour --- Existing Conditions |
| Minor St. Volume: | 78 |
| Major St. Volume: | 1193 |
| Warrant Met?: | **YES** |

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

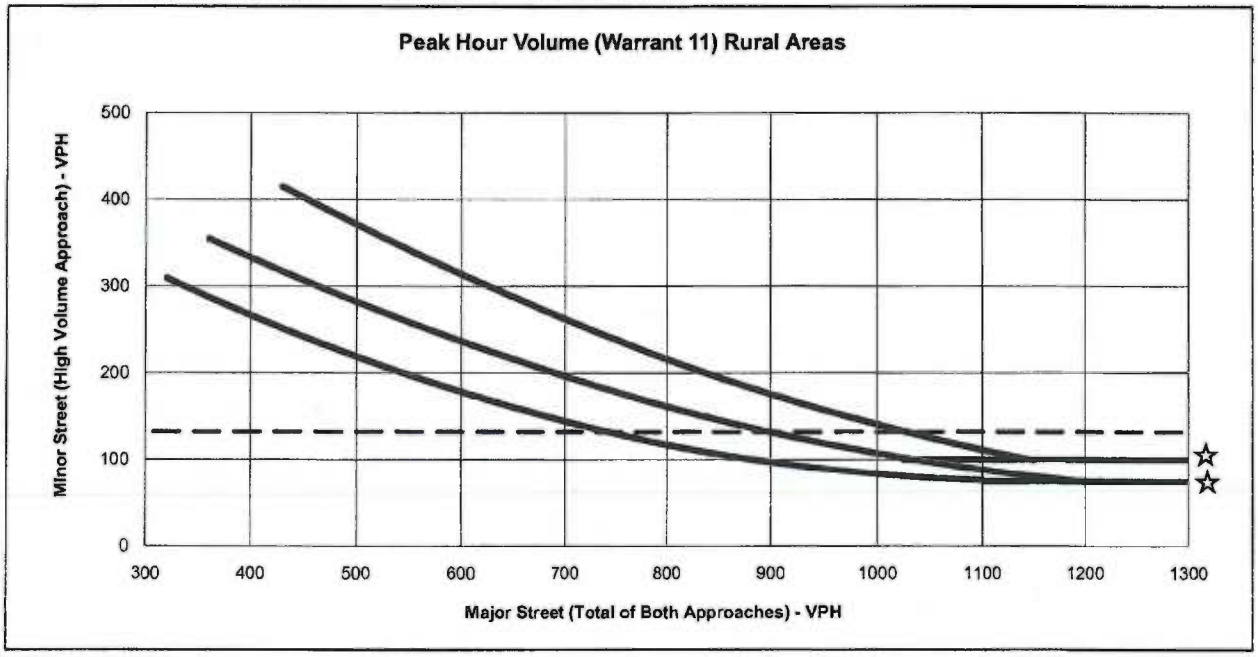



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

| | |
|---|---|
| Intersection: | Silverado Trail / Conn Creek Road (S.R. 128) |
| Scenario: | Weekdend Mid-Day PM Peak Hour --- Existing Conditions |
| Minor St. Volume: | 116 |
| Major St. Volume: | 1156 |
| Warrant Met?: | **YES** |

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

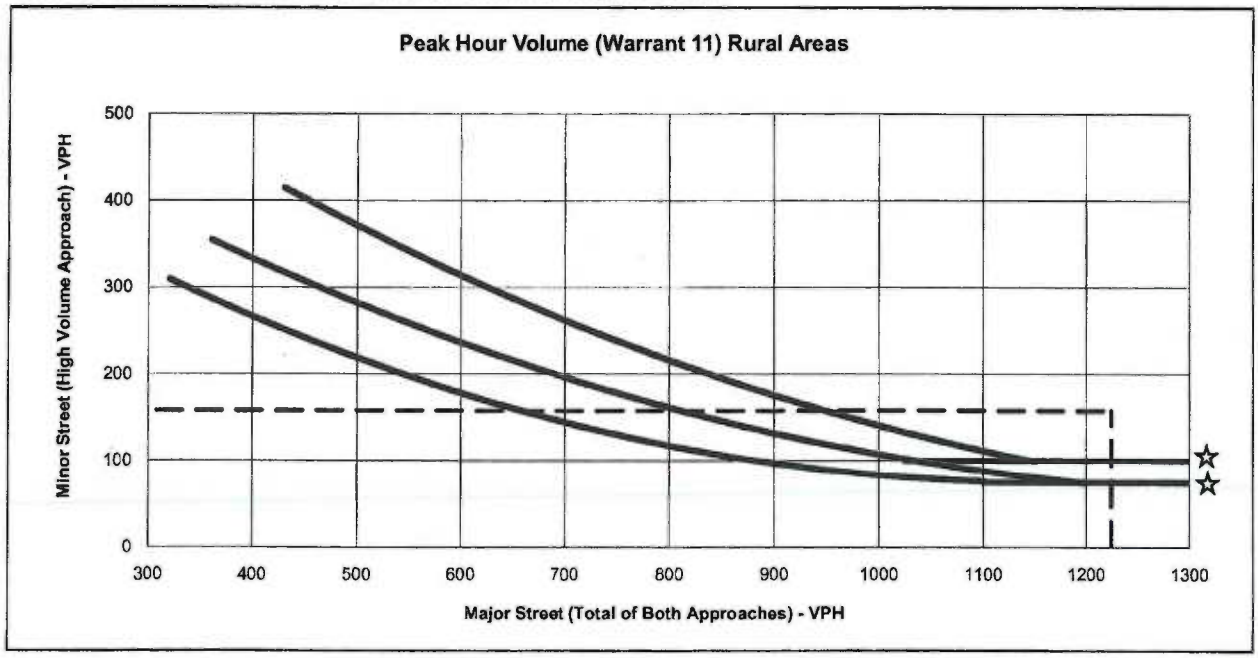



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection: Silverado Trail / Conn Creek Road (S.R. 128)
Scenario: Weekday PM Peak Hour --- Near-Term plus Project Conditions
Minor St. Volume: 132
Major St. Volume: 1379
Warrant Met?: **YES**

| Both 1 Lane Approaches | | 2 or more Lane and One Lane Approaches | | Both 2 or more Lane Approaches | |
|---|---|---|---|---|---|
| Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach | Major Street Total of Both Approaches | Minor Street High Volume Approach |
| 370 | 280 | | | | |
| 400 | 270 | 460 | 297 | 430 | 410 |
| 500 | 215 | 500 | 290 | 500 | 380 |
| 600 | 185 | 600 | 230 | 600 | 310 |
| 700 | 140 | 700 | 198 | 700 | 265 |
| 800 | 115 | 800 | 170 | 800 | 210 |
| 900 | 99 | 900 | 125 | 900 | 180 |
| 1000 | 85 | 1000 | 105 | 1000 | 140 |
| 1100 | 75 | 1100 | 90 | 1100 | 110 |
| 1200 | 75 | 1200 | 75 | 1150 | 100 |
| 1300 | 75 | 1300 | 75 | 1300 | 100 |

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*




☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection: Silverado Trail / Conn Creek Road (S.R. 128)
Scenario: Weekdend Mid-Day PM Peak Hour --- Near-Term plus Project Conditions
Minor St. Volume: 158
Major St. Volume: 1224
Warrant Met?: **YES**

# RADAR SPEED SURVEY

## OMNI—MEANS LTD.

Conn Creek Rd. approaching Frogs Leap Winery Access

DATE: 11/16/13 TIME START: 1:30pm TIME END: 3:00pm WEATHER: Clear ROAD TYPE: 2 lanes; Rural

DIRECTION: Both SPEED LIMIT: Not Posted OBSERVER: o-m CALIBRATION TEST: Yes

| SPEED | FREQUENCY | ACUM % | PERCENTAGE BREAKDOWN |
|---|---|---|---|
| 33 | 2 | 2.0 | ** |
| 34 | 1 | 3.0 | *** |
| 35 | 3 | 6.0 | ****5* |
| 36 | 5 | 11.0 | ****5****1* |
| 37 | 6 | 17.0 | ****5****1****5** |
| 38 | 6 | 23.0 | ****5****1****5****2*** |
| 39 | 3 | 26.0 | ****5****1****5****2****5* |
| 40 | 3 | 29.0 | ****5****1****5****2****5**** |
| 41 | 4 | 33.0 | ****5****1****5****2****5****3*** |
| 42 | 5 | 38.0 | ****5****1****5****2****5****3****5*** |
| 43 | 8 | 46.0 | ****5****1****5****2****5****3****5****4****5* |
| 44 | 5 | 51.0 | ****5****1****5****2****5****3****5****4****5****5* |
| 45 | 10 | 61.0 | ****5****1****5****2****5****3****5****4****5****5****5****6* |
| 46 | 8 | 69.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5**** |
| 47 | 10 | 79.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5****7****5**** |
| 48 | 6 | 85.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5****7****5****8****5 |
| 49 | 2 | 87.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5****7****5****8****5** |
| 50 | 2 | 89.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5****7****5****8****5**** |
| 51 | 3 | 92.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5****7****5****8****5****9** |
| 52 | 6 | 98.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5****7****5****8****5****9****5*** |
| 53 | 1 | 99.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5****7****5****8****5****9****5**** |
| 54 | 1 | 100.0 | ****5****1****5****2****5****3****5****4****5****5****5****6****5****7****5****8****5****9****5****0 |

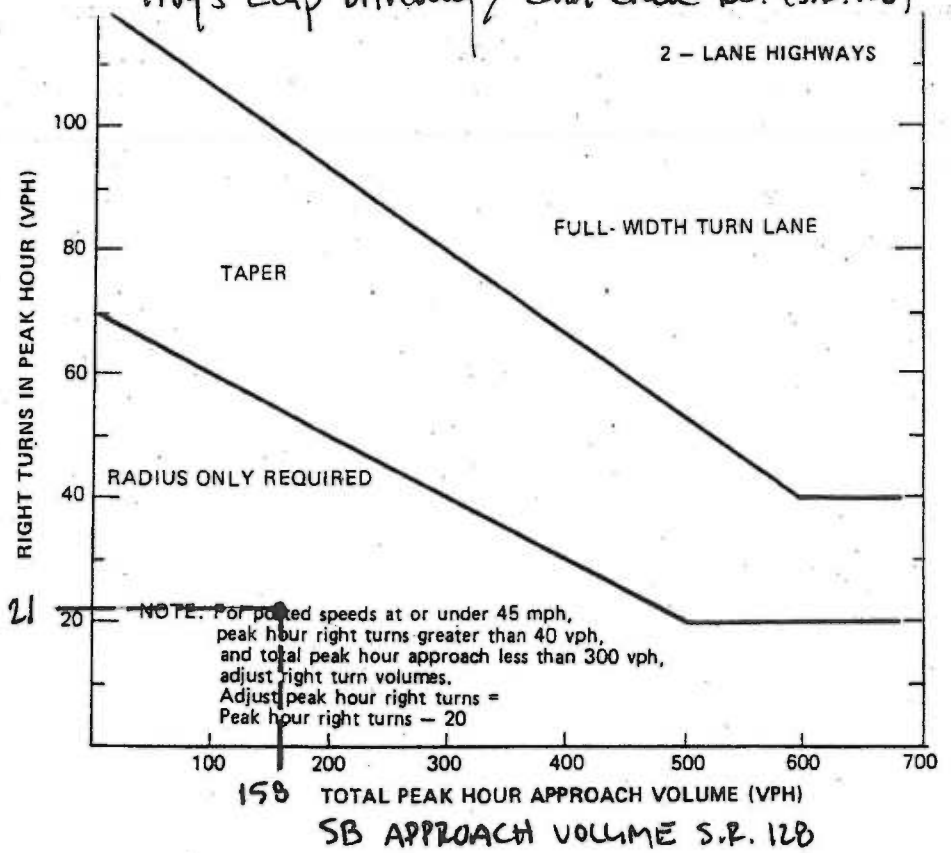
100

AVERAGE SPEED = 43.5
50th PERCENTILE = 43.8
85th PERCENTILE = 48
90th PERCENTILE = 50.3
95th PERCENTILE = 51.5

PACE = 38 - 47
% IN PACE = 62
VEHICLES IN PACE = 62

SAMPLE VARIANCE = 26.71354
STANDARD DEVIATION = 5.168515
RANGE 1*S = 62
RANGE 2*S = 97
RANGE 3*S = 100

Frog's Leap Driveway / Conn Creek Rd. (S.R. 128)




SB RIGHT-TURNS S.R. 128

21

158

SB APPROACH VOLUME S.R. 128

N-D WKND. N-T + Project (worst case)

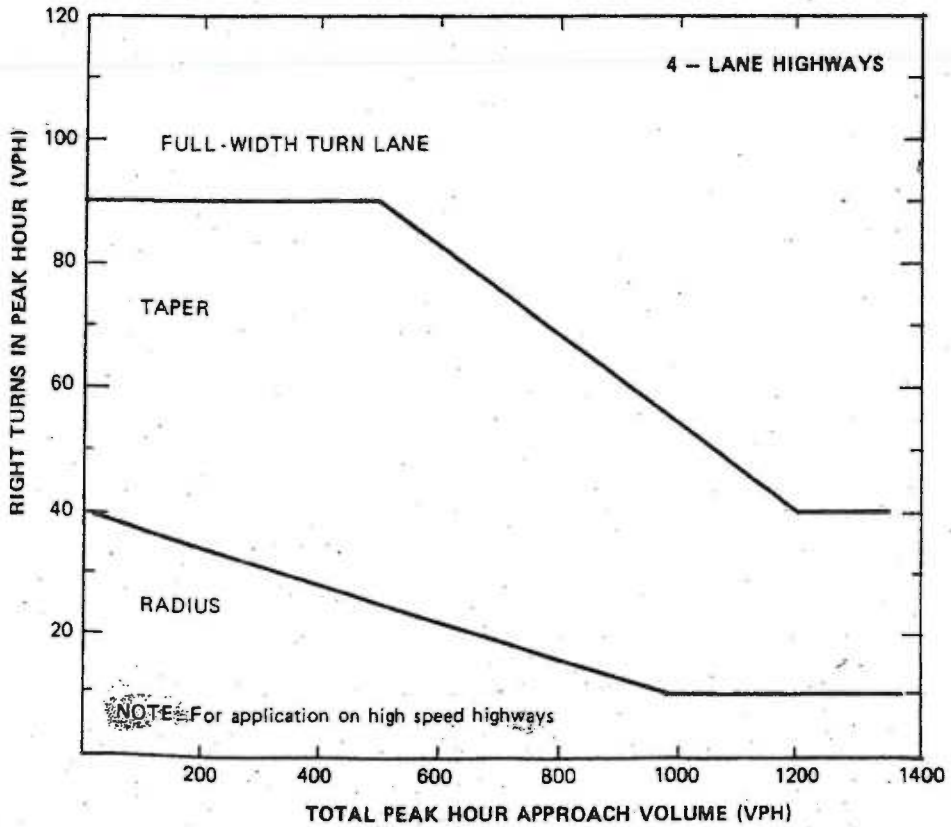
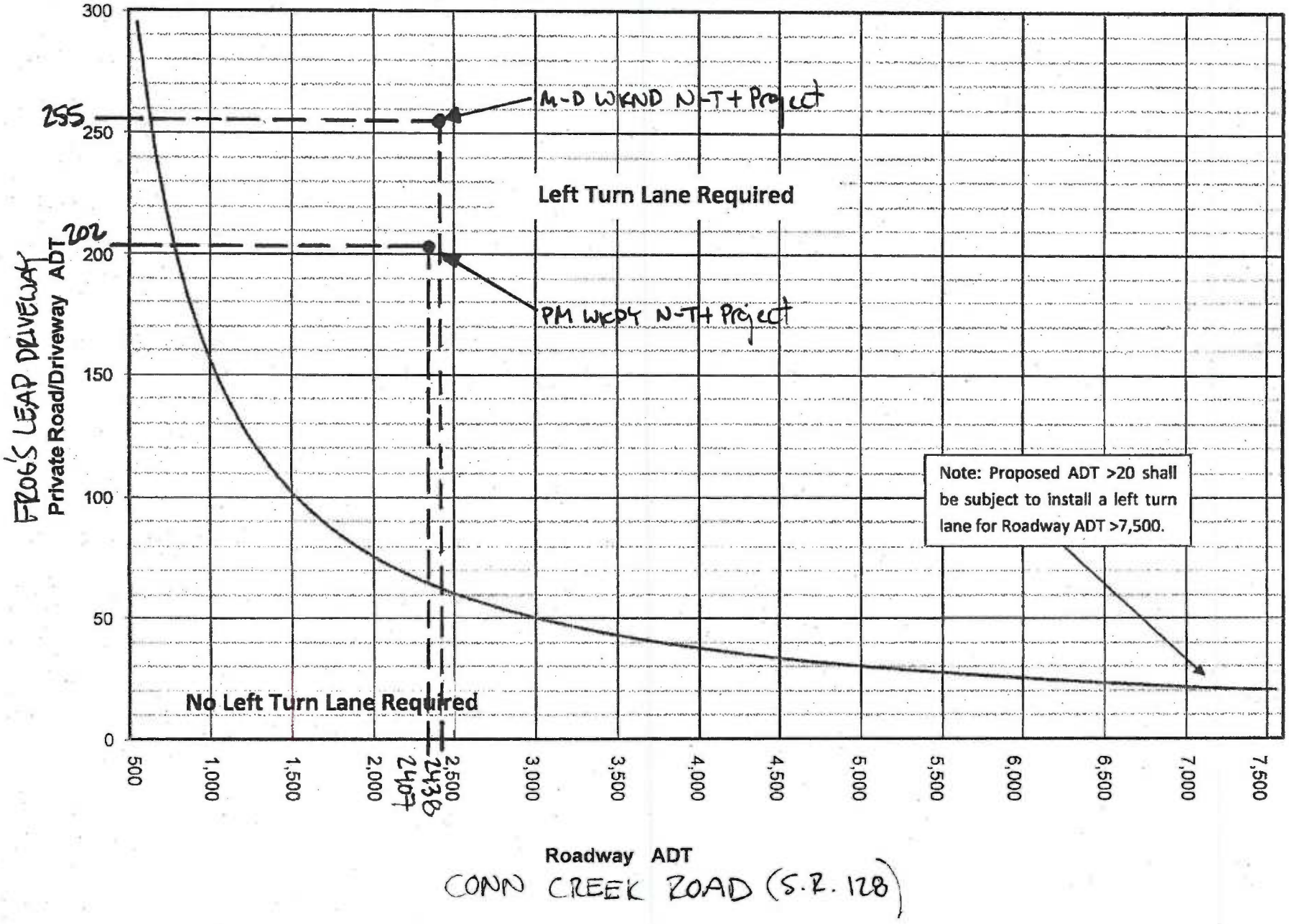



*Figure 4-23. Traffic volume guidelines for design of right-turn lanes.* (Source: Ref. 4-11)

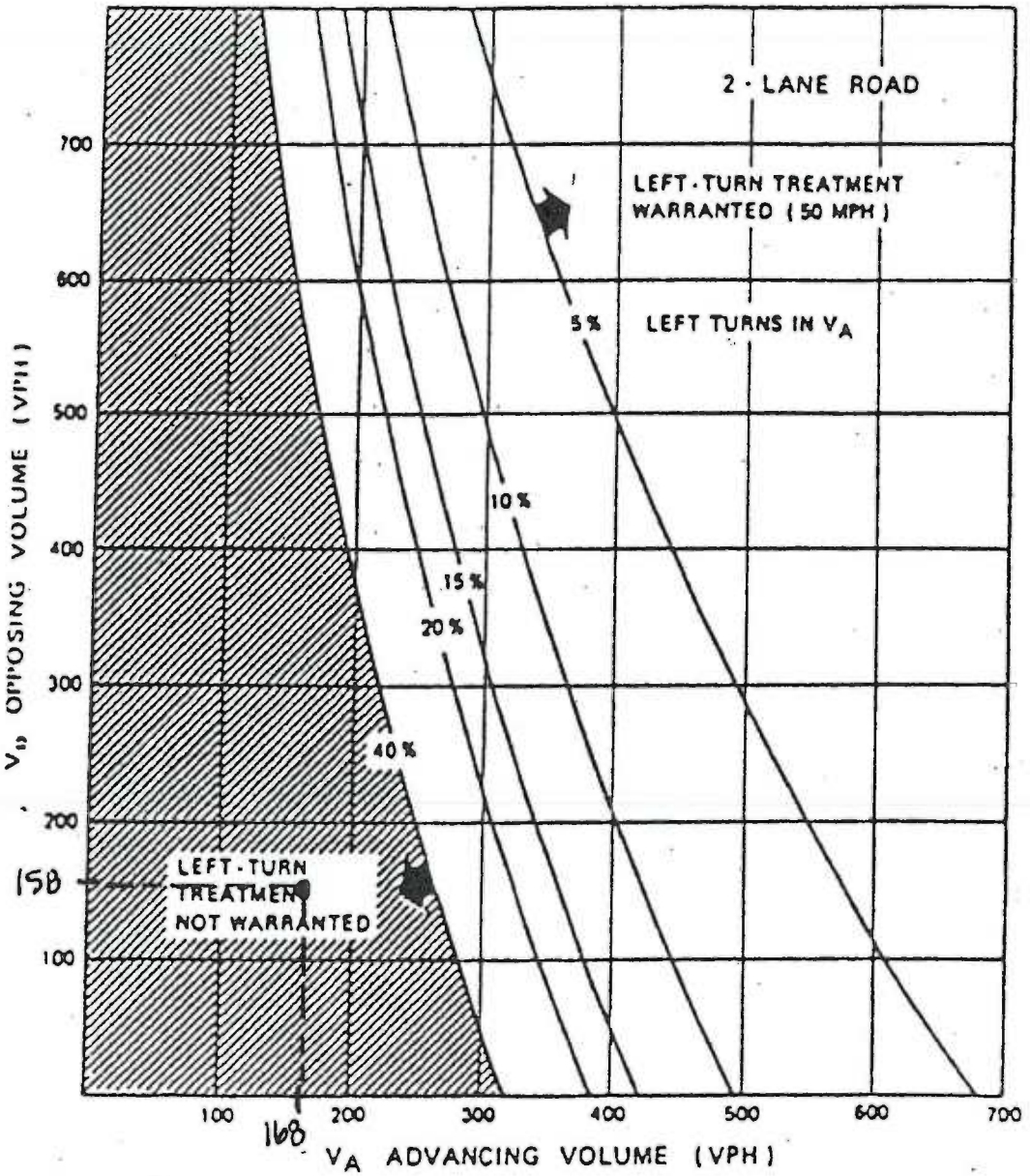
FROG'S LEAP DRIVEWAY / CONN CREEK ROAD

LEFT TURN LANE WARRANT GRAPH



CALTRAN'S LEFT-TURN WARRANT

FROG'S LEAP DRIVEWAY / CONN CREEK RD. (S.R. 128)




CONN CREEK RD. SB 137 through 21 right-turns

CONN CREEK RD. NB 149 through 15 left-turns

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Pete Parkinson
Interim Director

# MEMORANDUM

| | | | |
|---|---|---|---|
| To: | Shaveta Sharma, Planning Division | From: | Peter Corelis, Engineering and Conservation Division P.C. |
| Date: | October 23rd, 2014 | Re: | Frog's Leap Ag. Processing Facility<br>Use Permit: P14-00054<br>APN: 030-090-033 |

The Engineering Division received a submittal of a proposal for a major modification to a use permit generally requesting the following:

*To approve the use of a new 2,902 square foot combined agricultural processing facility (APC) and tasting room with an attached restroom and porch. The facility will be used to process fruit not associated with wine production and serve an expanded marketing and visitation plan and an increase in employees. The proposed project is located at 8815 Conn Creek Road in the County of Napa.*

The Engineering Division reviewed the submitted August 13th, 2014 submission of the left turn lane exhibits and request for an exception to the Napa County Road and Street Standards (NCRSS). The submitted information has shown that a left turn lane mitigation is required by County development standards due to the increase in average daily trips (ADT) to and from the facility. The exception request concerns roadway improvements on land owned and operated by the State of California under the authority of Caltrans. Site constraints and findings interfering with design standards for a left turn lane configuration must be addressed through the permittee of the left turn lane improvements. Please direct design exception requests to Caltrans for an equivalent mitigation.

Should you have any questions of me, please feel free to contact me at (707) 259-8757 or peter.corelis@countyofnapa.org

## Intersection: 1: Frog's Leap & Conn Creek Rd.

| Movement | EB | EB | NB |
|---|---|---|---|
| Directions Served | L | R | LT |
| Maximum Queue (ft) | 55 | 55 | 53 |
| Average Queue (ft) | 17 | 27 | 6 |
| 95th Queue (ft) | 49 | 58 | 30 |
| Link Distance (ft) | 4660 | | 3454 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | 25 | |
| Storage Blk Time (%) | 2 | 3 | |
| Queuing Penalty (veh) | 0 | 1 | |

## Nework Summary

Network wide Queuing Penalty: 1

## Intersection: 1: Frog's Leap & Conn Creek Rd.

| Movement | EB | EB | NB |
|---|---|---|---|
| Directions Served | L | R | LT |
| Maximum Queue (ft) | 69 | 52 | 39 |
| Average Queue (ft) | 18 | 25 | 3 |
| 95th Queue (ft) | 53 | 57 | 20 |
| Link Distance (ft) | 4660 | | 3454 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | 25 | |
| Storage Blk Time (%) | 2 | 2 | |
| Queuing Penalty (veh) | 0 | 0 | |

## Nework Summary

Network wide Queuing Penalty: 1

http://napavalleyregister.com/news/local/dui-stats-show-that-wine-country-loves-beer/article_28f78957-8b1e-57d2-9b7f-2fae356368f7.html

law enforcement

# DUI stats show that wine country loves beer

CHLOE F. JOHNSON cjohnson@napanews.com Jul 25, 2015


Submitted image

Nine local law enforcement agencies have waged an "Avoid the Nine" campaign to deter DUI drivers.

Wine may be the alcoholic beverage that has made Napa Valley famous, but beer is what the locals most prefer to drink.

That's one of the latest information nuggets from a survey of people arrested locally for suspected Driving Under the Influence (DUI).

The survey found that most arrests for drunk driving are of beer drinkers, and most of them are Napa locals, not tourists -- facts that run counter to many people's assumptions.

The reasons are many: wineries are careful to prevent their customers from driving drunk, wine drinkers are more likely to have a designated driver or taxi set up, and despite the name "wine country," beer drinkers predominate in Napa, members of the DUI Prevention Coalition report.

According to data compiled by the DUI Prevention Coalition, in 2014 there were 361 beer drinkers arrested for suspected DUI, 174 who had drunk hard liquor, and only 114 who had drunk wine. Overall, beer-related DUI's were more than three times as prevalent as wine-related ones.

"Court records will show that the majority of people arrested are Napa residents," said Napa police Lt. Debbie Peecook. "These are not our visitors."

However, some Napans also say they think that the arrests of local beer drinkers, most of whom work in the service industry, reflect unfair targeting of locals rather than the wine-drinking tourists.

"We were kind of sick of wine," Napa resident Bryan Donovan, who formerly worked as a barback in a winery, said of himself and his co-workers. "We would just go to some dive bar, where they were usually serving beer."

Donovan witnessed the beer-versus-wine divide firsthand when he worked for the winery, and sees it as a class issue, although not one that was being perpetuated deliberately.

"I did see the highway patrol doing a good job doing traffic stops. However, I see more traffic stops in the inner city. It's simply easier. I could see how a local would feel like they're being unfairly scrutinized."

The DUI Prevention Coalition allows those arrested for suspected drunken driving to fill out an optional survey at DUI education classes. Among the questions are the type of alcohol consumed, the place of last drink, and the person's age and occupation.

According to health education specialist Nancy Wynne de Rivera, most survey participants worked in the service industry, mainly as restaurant servers and bartenders. A little over half were between 26 and 46 years old, and most were driving from their homes or friends' houses.

Peecook said the data reflects historic trends in Napa for the past several years, and believes it is mainly because not only do locals stick around town longer than tourists, but that tourists take more precautions and have a different mindset about drinking.

"A lot of them come in buses," Peecook said. "If they come with a bunch of people, they usually come with a designated driver. They know they're drinking."

The Napa wine industry says it tries hard to make sure winery visitors do not drive under the influence.

"We take responsible hospitality very seriously, and encourage our winery members to do the same," said Patsy McGaughy of Napa Valley Vintners, an organization that represents more than 500 wineries. "Since 2008, the Napa Valley Vintners has hosted quarterly workshops to certify local winery staff in responsible beverage service."

McGaughy said that more winery visitors are choosing to take tour buses, taxis, or the VINE bus service rather than driving.

Meanwhile, local Napa drivers continue to work, drive around town, and sometimes have a few beers with friends.

"You're going to drive around town because it's your home town," said Napa resident Maria Lorenzana. "People who make the trip to the wine country probably arrange something."

Some Napans say they believe the disparity is due not to class divides or unequal enforcement, but simply because of bad behavior.

"DUI is DUI," said Napa local Theresa Andrews. "Maybe it's just because locals are being more irresponsible."

## Myths and facts

Myths and facts

Myth: The most popular alcoholic drink in Napa is wine

Fact: More Napans drink beer than wine. Beer is cheaper, and is a more popular drink among all Americans, according to Napa Police Lt. Debbie Peecook.

Myth: Most drunk drivers are coming from bars or wineries

Fact: Most DUIs happen to people driving from home or a friend's house. Because of strict responsible beverage service rules in Napa County, there are few drunk drivers coming from drinking establishments, Patsy McGaughy of Napa Valley Vintners said.

Myth: People who have had a lot to drink are more dangerous on the roads than those who have only had one or two drinks

Fact: People who have only had a couple of drinks are actually the most dangerous because they do not realize their impairment. They are the most likely to run red lights and take other risks on the road. Those who have drunk more are usually aware that they should not drive, Peecook said.

Myth: Most drunk drivers are young people in their teens or early 20s

Fact: The majority of arrests are of people between 26 and 46 years old, according to data from the DUI Prevention Coalition.

## Operational Analysis

Study Area and Periods

The study area consists of the SR 128/Conn Creek Road intersection as well as SR 128/SR 29 and SR 128-Conn Creek Road/Silverado Trail. Due to the unusual configuration of SR 128/Conn Creek Road, it was analyzed as three intersections as follows:

1. SR 128/Conn Creek Road (north)
2. SR 128/Conn Creek Road (south)
3. SR 128/Conn Creek Road (west)
4. SR 128/SR 29
5. SR 128-Conn Creek Road/Silverado Trail South

Operating conditions during the weekday p.m. and weekend midday peak periods were evaluated as these time periods reflect the highest traffic volumes areawide and for the proposed project. The evening peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion of the day during the homeward bound commute, while the weekend midday peak occurs between 12:00 noon and 2:00 p.m.

Study Intersections

*SR 128/Conn Creek Road* (north) is an unsignalized tee intersection with the SR 128 southbound and eastbound approaches being free and the northbound Conn Creek Road being stop controlled.

*SR 128/Conn Creek Road* (south) is an unsignalized tee intersection with the Conn Creek Road southbound approach being stop controlled and the SR 128 eastbound and Conn Creek Road northbound approaches being free.

*SR 128/Conn Creek Road* (west) is an unsignalized tee intersection with the SR 128 eastbound and southbound approaches being free and the Conn Creek Road northbound approach being stop controlled.

*SR 128/SR 29* is an unsignalized four-legged offset intersection with the eastbound and westbound legs stop-controlled while the SR 29 approaches are free.

*SR 128-Conn Creek Road/Silverado Trail South* is a four-legged intersection with stop-controlled eastbound and westbound Conn Creek Road approaches while the Silverado Trail approaches are free. The westbound approach is a driveway that provides access to Rutherford Ranch.

The locations of the study intersections and the existing lane configurations and controls are shown in Figures 1 and 2.

## Collision History

The collision history along SR 128 in the vicinity of the project site was reviewed to determine any trends or patterns that may indicate a safety issue. Collisions that occurred within one-half mile on either side of the project site during a five-year period between January 1, 2007, and December 31, 2011, were included in the analysis. Collision rates were calculated based on the collision data available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The calculated collision rate for the study segment was compared to the average

collision rate for similar facilities statewide, as indicated in *2009 Accident Data on California State Highways*, California Department of Transportation (Caltrans).

Over the five-year study period, five collisions were reported for a calculated collision rate of 1.10 collisions per million vehicle miles (c/mvm). The average statewide collision rate for a two-lane rural roadway with a speed limit equal to or less than 55 mph is 1.09 c/mvm. It should be noted that the calculated collision rate was slightly higher than the statewide average for similar facilities. ~~None of the collisions reported involved an injury; however, one fatality, which involved an intoxicated driver, was~~ reported along this segment during the five-year period studied.

The collision data was further examined to determine any apparent trends in collision types. Of the five collisions reported along the segment, four collisions (including the fatal collision) were single-vehicle crashes involving a fixed object. The primary collision factor associated with single-vehicle crashes, again including the fatal crash, was "driving under influence." Additionally, a head-on collision was reported at the SR 128/Conn Creek Road intersection with "auto right-of way violation" being the primary collision factor. The collision rate calculations are provided in Appendix A.

## Alternative Modes

### Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2012, classifies bikeways into three categories:

- *Class I Multi-Use Path*: a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- *Class II Bike Lane*: a striped and signed lane for one-way bike travel on a street or highway.
- *Class III Bike Route*: signing only for shared use with motor vehicles within the same travel lane on a street or highway.

In the project area, Class II bike lanes exist on both sides of Conn Creek Road south of the project driveways. Bicyclists ride in the roadway along SR 128 within the project study area. Per the *Napa County Bicycle Plan*, Napa County Transportation and Planning Agency, 2012, long range plans include providing Class II bike lanes on SR 128.

## SEGMENT COLLISION RATE CALCULATIONS

**Traffic Impact Study for Caymus Winery in Napa County**

**Location:** SR 128 near Rutherford Road/Conn Creek Road

**Date of Count:** 2010 and 2011 Counts from Caltrans
**ADT:** 2,500

**Number of Collisions:** 5
**Number of Injuries:** 0
**Number of Fatalities:** 1
**Start Date:** January 1, 2007
**End Date:** December 31, 2011
**Number of Years:** 5

**Highway Type:** Conventional 2 lanes or less
**Area:** Rural
**Design Speed:** <=55
**Terrain:** Flat

**Segment Length:** 1.0 miles
**Direction:** East/West

$$\frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Segment Length} \times \text{Number of Years}}$$

$$\frac{5 \times 1{,}000{,}000}{2{,}500 \times 365 \times 1 \times 5}$$

| | Collision Rate | | Fatality Rate | Injury Rate |
|---|---|---|---|---|
| **Study Segment** | **1.10** | **c/mvm** | **20.0%** | **0.0%** |
| **Statewide Average*** | **1.09** | **c/mvm** | **2.4%** | **38.0%** |

ADT = average daily traffic volume
c/mvm = collisions per million vehicle miles
* 2009 Collision Data on California State Highways, Caltrans

*Finding:* The intersection of SR 128/SR 29 currently operates at an unacceptable LOS E during the weekend midday peak hour. The County of Napa has expressed in its General Plan that widening of the highway is not encouraged, though Policy AG/LU-98 identifies the need for improvements at the intersection (called Highway 29 and Rutherford Cross Road in the General Plan) to improve safety and accessibility. Further, it has been determined that roundabouts are infeasible where SR 29 is paralleled closely by the Wine Train tracks, as is the case at SR 128/SR 29.

*Recommendation:* The County should include improvements to SR 128/SR 29, as called for in the General Plan, in the traffic impact fee structure that is currently being developed in accord with Action Item CIR-19.1.

Roadways

Information in the *Napa County General Plan Update Environmental Impact Report*, 2008 (GPUFEIR), indicates that under 2003 volumes SR 29 was operating at LOS F between Rutherford Road and Oakville Cross Road (this is the nearest segment included in the analysis). Silverado Trail between Sage Canyon Road and Yountville Cross Road is identified in the same document as operating at LOS C under 2003 volumes. Both SR 29 and Silverado Trail are shown as two-lane Rural Throughways on the Circulation Map (Figure CIR-1).

### Cumulative Conditions

Cumulative operating conditions were determined with traffic for other approved projects in the same vicinity added to existing volumes. As directed by County staff, the following projects were included to evaluate Cumulative Conditions.

- *Frog's Leap Winery* – revised use permit with 240,000 gallons of production annually; 30 full-time and five part-time employees on weekdays, 10 full-time and five part-time employees on weekends; 125 visitors on weekdays, 300 visitors on weekends; two trucks per day on weekdays and weekends
- *Frank's Family Vineyards Winery* – use permit update with 475,00 gallons of production annually, 14 full-time employees, 5 part-time employees and 50 visitors per day

Project volumes for Frog's Leap were taken from the *Revised Focused Traffic Analysis for the Proposed Frog's Leap Winery Modifications Project, December 15, 2014* by Omni-Means and were calculated for Frank's Family Vineyards Winery using the County's trip generation form. These volumes were added to volumes for Existing Conditions to achieve Cumulative Conditions volumes.

Under Cumulative Conditions the study intersections, with the exception of SR 128/SR 29, are expected to continue to operate acceptably at LOS A or B overall during both peak hours. At SR 128/SR 29, the eastbound and westbound approaches are expected to operate at LOS F during all peak hours. The eastbound and westbound approaches at SR 128-Conn Creek Road/Silverado Trail South are expected to operate at LOS F during the weekday peak hour and at LOS D or better during the weekend peak hour. The Cumulative volumes are shown in Figures 1 and 3, and the resulting levels of service are summarized in Table 3.