































APPENDIX N

COORDINATED SIGNAL LEVELS OF SERVICE WORKSHEETS

HCM Signalized Intersection Capacity Analysis
1: 5th Street & Palm Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. A
P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|--|--|---|---|--|--|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |   |   |  |  |   |   |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 12 | 12 | 12 | 8 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | *1.00 | 1.00 | *1.00 | 1.00 |
| Flt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 3800 | 1800 | 3800 | 1647 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 3800 | 1800 | 3800 | 1647 |
| Volume (vph) | 76 | 783 | 276 | 290 | 534 | 125 | 196 | 974 | 1596 | 61 | 325 | 67 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 80 | 824 | 291 | 305 | 562 | 132 | 206 | 1025 | 1680 | 64 | 342 | 71 |
| RTOR Reduction (vph) | 0 | 0 | 191 | 0 | 0 | 78 | 0 | 0 | 103 | 0 | 0 | 49 |
| Lane Group Flow (vph) | 80 | 824 | 100 | 305 | 562 | 54 | 206 | 1025 | 1577 | 64 | 342 | 22 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | pm+ov | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | 1 | 7 | | 4 |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 5.6 | 32.2 | 32.2 | 12.0 | 38.6 | 38.6 | 10.8 | 35.0 | 47.0 | 4.8 | 29.0 | 29.0 |
| Effective Green, g (s) | 7.6 | 34.2 | 34.2 | 14.0 | 40.6 | 40.6 | 12.8 | 37.0 | 51.0 | 6.8 | 31.0 | 31.0 |
| Actuated g/C Ratio | 0.08 | 0.34 | 0.34 | 0.14 | 0.41 | 0.41 | 0.13 | 0.37 | 0.51 | 0.07 | 0.31 | 0.31 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 137 | 1300 | 585 | 476 | 1543 | 694 | 230 | 1406 | 1938 | 122 | 1178 | 511 |
| v/s Ratio Prot | 0.04 | c0.22 | | 0.09 | 0.15 | | c0.11 | 0.27 | c0.11 | 0.04 | 0.09 | |
| v/s Ratio Perm | | | 0.06 | | | 0.03 | | | 0.30 | | | 0.01 |
| v/c Ratio | 0.58 | 0.63 | 0.17 | 0.64 | 0.36 | 0.08 | 0.90 | 0.73 | 0.81 | 0.52 | 0.29 | 0.04 |
| Uniform Delay, d1 | 44.7 | 27.6 | 23.0 | 40.6 | 20.7 | 18.2 | 42.9 | 27.2 | 20.5 | 45.0 | 26.2 | 24.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.75 | 0.46 | 0.13 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 6.2 | 2.4 | 0.6 | 2.7 | 0.6 | 0.2 | 32.6 | 3.4 | 2.7 | 4.0 | 0.6 | 0.2 |
| Delay (s) | 50.9 | 30.0 | 23.6 | 33.4 | 10.1 | 2.6 | 75.6 | 30.5 | 23.3 | 49.1 | 26.8 | 24.3 |
| Level of Service | D | C | C | C | B | A | E | C | C | D | C | C |
| Approach Delay (s) | | 29.8 | | | 16.2 | | | 29.5 | | | 29.4 | |
| Approach LOS | | C | | | B | | | C | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 27.2 | HCM Level of Service | | | | C | | | | |
| HCM Volume to Capacity ratio | | | 0.74 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 100.0 | Sum of lost time (s) | | | | 6.0 | | | | |
| Intersection Capacity Utilization | | | 91.0% | ICU Level of Service | | | | F | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: 5th Street & Church Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. A
P.M. Peak Hour















| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations | ↖ | ↑↑ | ↗↗ | ↖ | ↘ | ↘ |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Volume (vph) | 165 | 2276 | 891 | 193 | 89 | 59 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 174 | 2396 | 938 | 203 | 94 | 62 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 85 | 0 | 50 |
| Lane Group Flow (vph) | 174 | 2396 | 938 | 118 | 94 | 12 |
| Turn Type | Prot | | Perm | | Perm | |
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | | | | 6 | | 4 |
| Actuated Green, G (s) | 15.0 | 75.0 | 56.0 | 56.0 | 17.0 | 17.0 |
| Effective Green, g (s) | 17.0 | 77.0 | 58.0 | 58.0 | 19.0 | 19.0 |
| Actuated g/C Ratio | 0.17 | 0.77 | 0.58 | 0.58 | 0.19 | 0.19 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 306 | 2926 | 2204 | 1102 | 342 | 361 |
| v/s Ratio Prot | 0.10 | c0.63 | 0.25 | | c0.05 | |
| v/s Ratio Perm | | | | 0.06 | | 0.01 |
| v/c Ratio | 0.57 | 0.82 | 0.43 | 0.11 | 0.27 | 0.03 |
| Uniform Delay, d1 | 38.1 | 7.2 | 11.7 | 9.4 | 34.6 | 33.0 |
| Progression Factor | 0.91 | 0.73 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.6 | 1.8 | 0.6 | 0.2 | 2.0 | 0.2 |
| Delay (s) | 36.1 | 7.0 | 12.3 | 9.6 | 36.6 | 33.2 |
| Level of Service | D | A | B | A | D | C |
| Approach Delay (s) | | 9.0 | 11.8 | | 35.2 | |
| Approach LOS | | A | B | | D | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 10.9 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 74.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

HCM Signalized Intersection Capacity Analysis
7: 5th Street & SR-30 Southbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. A
P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | ↑ | ↑↑ | ↑↑↑ | | | | | | ↑ | ↑ |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1700 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | 2.0 | 2.0 |
| Lane Util. Factor | | *1.00 | *1.00 | *1.00 | *1.00 | | | | | | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Flt Protected | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Flt Permitted | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Volume (vph) | 0 | 1434 | 961 | 488 | 1003 | 0 | 0 | 0 | 0 | 248 | 0 | 135 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 1509 | 1012 | 514 | 1056 | 0 | 0 | 0 | 0 | 261 | 0 | 142 |
| RTOR Reduction (vph) | 0 | 24 | 333 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| Lane Group Flow (vph) | 0 | 1702 | 462 | 514 | 1056 | 0 | 0 | 0 | 0 | 0 | 261 | 36 |
| Turn Type | | | Perm | Prot | | | | | | Perm | | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | | 4 | |
| Permitted Phases | | | 2 | | | | | | | 4 | | 4 |
| Actuated Green, G (s) | | 38.0 | 38.0 | 19.0 | 61.0 | | | | | | 21.0 | 21.0 |
| Effective Green, g (s) | | 40.0 | 40.0 | 21.0 | 63.0 | | | | | | 23.0 | 23.0 |
| Actuated g/C Ratio | | 0.44 | 0.44 | 0.23 | 0.70 | | | | | | 0.26 | 0.26 |
| Clearance Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 2533 | 844 | 793 | 3990 | | | | | | 460 | 486 |
| v/s Ratio Prot | | c0.30 | | c0.15 | 0.19 | | | | | | | |
| v/s Ratio Perm | | | 0.24 | | | | | | | | 0.14 | 0.02 |
| v/c Ratio | | 0.67 | 0.55 | 0.65 | 0.26 | | | | | | 0.57 | 0.07 |
| Uniform Delay, d1 | | 19.8 | 18.3 | 31.2 | 5.0 | | | | | | 29.2 | 25.4 |
| Progression Factor | | 1.00 | 1.00 | 0.62 | 0.48 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.4 | 2.5 | 1.6 | 0.1 | | | | | | 5.0 | 0.3 |
| Delay (s) | | 21.2 | 20.9 | 20.8 | 2.6 | | | | | | 34.2 | 25.7 |
| Level of Service | | C | C | C | A | | | | | | C | C |
| Approach Delay (s) | | 21.1 | | | 8.5 | | | 0.0 | | | 31.2 | |
| Approach LOS | | C | | | A | | | A | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 17.6 | | | HCM Level of Service | | | | B | | |
| HCM Volume to Capacity ratio | | | 0.63 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | Sum of lost time (s) | | | | 6.0 | | |
| Intersection Capacity Utilization | | | 80.9% | | | ICU Level of Service | | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
8: 5th Street & SR-30 Northbound Ramps






























Year 2030 Land Use Alt. 1, Acc. Alt. A
P.M. Peak Hour

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|-------|-------|------|-------|------|-------|-------|-------|------|------|--------------------------|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | *1.00 | | | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Flt Protected | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (prot) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Flt Permitted | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (perm) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Volume (vph) | 243 | 1439 | 0 | 0 | 865 | 191 | 626 | 0 | 750 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 256 | 1515 | 0 | 0 | 911 | 201 | 659 | 0 | 789 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 0 | 15 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 256 | 1515 | 0 | 0 | 911 | 63 | 330 | 329 | 774 | 0 | 0 | 0 |
| Turn Type | Prot | | | | | Perm | Perm | | Perm | | | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | | |
| Permitted Phases | | | | | | 6 | 8 | | 8 | | | |
| Actuated Green, G (s) | 16.8 | 47.0 | | | 26.2 | 26.2 | 35.0 | 35.0 | 35.0 | | | |
| Effective Green, g (s) | 18.8 | 49.0 | | | 28.2 | 28.2 | 37.0 | 37.0 | 37.0 | | | |
| Actuated g/C Ratio | 0.21 | 0.54 | | | 0.31 | 0.31 | 0.41 | 0.41 | 0.41 | | | |
| Clearance Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 376 | 3103 | | | 1786 | 516 | 740 | 740 | 781 | | | |
| v/s Ratio Prot | c0.14 | c0.27 | | | 0.16 | | | | | | | |
| v/s Ratio Perm | | | | | | 0.04 | 0.18 | 0.18 | c0.41 | | | |
| v/c Ratio | 0.68 | 0.49 | | | 0.51 | 0.12 | 0.45 | 0.44 | 0.99 | | | |
| Uniform Delay, d1 | 32.8 | 12.7 | | | 25.3 | 22.1 | 19.1 | 19.1 | 26.3 | | | |
| Progression Factor | 1.46 | 0.29 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 3.8 | 0.4 | | | 1.0 | 0.5 | 1.9 | 1.9 | 30.2 | | | |
| Delay (s) | 51.6 | 4.1 | | | 26.3 | 22.5 | 21.1 | 21.0 | 56.5 | | | |
| Level of Service | D | A | | | C | C | C | C | E | | | |
| Approach Delay (s) | | 10.9 | | | 25.6 | | | 40.4 | | | 0.0 | |
| Approach LOS | | B | | | C | | | D | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 24.6 | | | | | | | | | HCM Level of Service C |
| HCM Volume to Capacity ratio | | | 0.74 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | | | | | | | Sum of lost time (s) 4.0 |
| Intersection Capacity Utilization | | | 80.9% | | | | | | | | | ICU Level of Service D |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 9: 5th Street & Boulder Avenue






























Year 2030 Land Use Alt. 1, Acc. Alt. A
 P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|---|--|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |   |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 8 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Fr't | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Volume (vph) | 3 | 450 | 322 | 441 | 1246 | 76 | 250 | 220 | 49 | 207 | 687 | 11 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 3 | 474 | 339 | 464 | 1312 | 80 | 263 | 232 | 52 | 218 | 723 | 12 |
| RTOR Reduction (vph) | 0 | 0 | 154 | 0 | 0 | 28 | 0 | 0 | 37 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 3 | 474 | 185 | 464 | 1312 | 52 | 263 | 232 | 15 | 218 | 734 | 0 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | |
| Actuated Green, G (s) | 1.1 | 18.1 | 18.1 | 28.7 | 45.7 | 45.7 | 7.0 | 28.1 | 28.1 | 11.0 | 32.1 | |
| Effective Green, g (s) | 3.1 | 20.1 | 20.1 | 30.7 | 47.7 | 47.7 | 9.0 | 30.1 | 30.1 | 13.0 | 34.1 | |
| Actuated g/C Ratio | 0.03 | 0.20 | 0.20 | 0.30 | 0.47 | 0.47 | 0.09 | 0.30 | 0.30 | 0.13 | 0.33 | |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 55 | 750 | 375 | 542 | 1779 | 771 | 300 | 1122 | 487 | 230 | 1272 | |
| v/s Ratio Prot | 0.00 | 0.12 | | c0.26 | c0.35 | | c0.08 | 0.06 | | c0.12 | c0.19 | |
| v/s Ratio Perm | | | 0.10 | | | 0.03 | | | 0.01 | | | |
| v/c Ratio | 0.05 | 0.63 | 0.49 | 0.86 | 0.74 | 0.07 | 0.88 | 0.21 | 0.03 | 0.95 | 0.58 | |
| Uniform Delay, d1 | 48.0 | 37.5 | 36.4 | 33.5 | 22.0 | 14.9 | 45.9 | 26.9 | 25.5 | 44.1 | 28.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.4 | 1.7 | 1.0 | 12.6 | 1.6 | 0.0 | 23.7 | 0.4 | 0.1 | 44.4 | 1.9 | |
| Delay (s) | 48.4 | 39.3 | 37.4 | 46.1 | 23.6 | 14.9 | 69.6 | 27.4 | 25.7 | 88.5 | 29.9 | |
| Level of Service | D | D | D | D | C | B | E | C | C | F | C | |
| Approach Delay (s) | | 38.5 | | | 28.9 | | | 47.5 | | | 43.3 | |
| Approach LOS | | D | | | C | | | D | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 36.5 | | | | HCM Level of Service | | | | D | |
| HCM Volume to Capacity ratio | | | 0.76 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 101.9 | | | | Sum of lost time (s) | | | 8.0 | | |
| Intersection Capacity Utilization | | | 78.9% | | | | ICU Level of Service | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: 5th Street & Palm Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. B
A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|--|--|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |   |   |  |  |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 8 | 12 | 12 | 8 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Fr _t | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fl _t Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 1647 | 1800 | 3800 | 1647 |
| Fl _t Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 1647 | 1800 | 3800 | 1647 |
| Volume (vph) | 22 | 314 | 224 | 1230 | 995 | 74 | 86 | 134 | 40 | 102 | 893 | 120 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 23 | 331 | 236 | 1295 | 1047 | 78 | 91 | 141 | 42 | 107 | 940 | 126 |
| RTOR Reduction (vph) | 0 | 0 | 69 | 0 | 0 | 33 | 0 | 0 | 32 | 0 | 0 | 66 |
| Lane Group Flow (vph) | 23 | 331 | 167 | 1295 | 1047 | 45 | 91 | 141 | 10 | 107 | 940 | 60 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 3.6 | 25.4 | 25.4 | 50.6 | 72.4 | 72.4 | 6.0 | 29.0 | 29.0 | 9.0 | 32.0 | 32.0 |
| Effective Green, g (s) | 5.6 | 27.4 | 27.4 | 52.6 | 74.4 | 74.4 | 8.0 | 31.0 | 31.0 | 11.0 | 34.0 | 34.0 |
| Actuated g/C Ratio | 0.04 | 0.21 | 0.21 | 0.40 | 0.57 | 0.57 | 0.06 | 0.24 | 0.24 | 0.08 | 0.26 | 0.26 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 78 | 801 | 360 | 1376 | 2175 | 979 | 111 | 906 | 393 | 152 | 994 | 431 |
| v/s Ratio Prot | 0.01 | 0.09 | | c0.38 | 0.28 | | c0.05 | 0.04 | | 0.06 | c0.25 | |
| v/s Ratio Perm | | | c0.10 | | | 0.03 | | | 0.01 | | | 0.04 |
| v/c Ratio | 0.29 | 0.41 | 0.46 | 0.94 | 0.48 | 0.05 | 0.82 | 0.16 | 0.03 | 0.70 | 0.95 | 0.14 |
| Uniform Delay, d ₁ | 60.3 | 44.4 | 44.9 | 37.2 | 16.4 | 12.2 | 60.3 | 39.1 | 37.9 | 57.9 | 47.1 | 36.8 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.70 | 0.38 | 0.16 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d ₂ | 2.1 | 1.6 | 4.2 | 8.3 | 0.4 | 0.1 | 35.7 | 0.4 | 0.1 | 13.8 | 18.1 | 0.7 |
| Delay (s) | 62.4 | 45.9 | 49.1 | 34.3 | 6.6 | 2.1 | 96.0 | 39.5 | 38.0 | 71.7 | 65.2 | 37.4 |
| Level of Service | E | D | D | C | A | A | F | D | D | E | E | D |
| Approach Delay (s) | | 47.8 | | | 21.3 | | | 58.0 | | | 62.8 | |
| Approach LOS | | D | | | C | | | E | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 38.0 | | | | HCM Level of Service | | | | D | |
| HCM Volume to Capacity ratio | | | 0.81 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | Sum of lost time (s) | | | 8.0 | | |
| Intersection Capacity Utilization | | | 90.9% | | | | ICU Level of Service | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: 5th Street & Church Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. B
A.M. Peak Hour















| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------|-------|-------|-------|------|-------|------|
| Lane Configurations | ↖ | ↑↑ | ↗↗ | ↑ | ↙ | ↘ |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Volume (vph) | 25 | 430 | 2074 | 76 | 191 | 225 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 26 | 453 | 2183 | 80 | 201 | 237 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 21 | 0 | 65 |
| Lane Group Flow (vph) | 26 | 453 | 2183 | 59 | 201 | 172 |
| Turn Type | Prot | | | Perm | | Perm |
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | | | | 6 | | 4 |
| Actuated Green, G (s) | 3.6 | 94.0 | 86.4 | 86.4 | 28.0 | 28.0 |
| Effective Green, g (s) | 5.6 | 96.0 | 88.4 | 88.4 | 30.0 | 30.0 |
| Actuated g/C Ratio | 0.04 | 0.74 | 0.68 | 0.68 | 0.23 | 0.23 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 78 | 2806 | 2584 | 1292 | 415 | 438 |
| v/s Ratio Prot | c0.01 | 0.12 | c0.57 | | c0.11 | |
| v/s Ratio Perm | | | | 0.03 | | 0.09 |
| v/c Ratio | 0.33 | 0.16 | 0.84 | 0.05 | 0.48 | 0.39 |
| Uniform Delay, d1 | 60.4 | 5.0 | 15.6 | 6.9 | 43.3 | 42.3 |
| Progression Factor | 0.74 | 0.07 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 2.3 | 0.1 | 3.6 | 0.1 | 4.0 | 2.6 |
| Delay (s) | 47.1 | 0.4 | 19.2 | 6.9 | 47.3 | 44.9 |
| Level of Service | D | A | B | A | D | D |
| Approach Delay (s) | | 3.0 | 18.8 | | 46.0 | |
| Approach LOS | | A | B | | D | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 20.2 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.73 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 77.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |
























HCM Signalized Intersection Capacity Analysis
7: 5th Street & SR-30 Southbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. B
A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | ↑ | ↑↑ | ↑↑↑ | | | | | | ↑ | ↑ |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1700 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | 2.0 | 2.0 |
| Lane Util. Factor | | *1.00 | *1.00 | *1.00 | *1.00 | | | | | | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Flt Protected | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Flt Permitted | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Volume (vph) | 0 | 312 | 829 | 747 | 1701 | 0 | 0 | 0 | 0 | 269 | 0 | 449 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 328 | 873 | 786 | 1791 | 0 | 0 | 0 | 0 | 283 | 0 | 473 |
| RTOR Reduction (vph) | 0 | 298 | 350 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Lane Group Flow (vph) | 0 | 466 | 87 | 786 | 1791 | 0 | 0 | 0 | 0 | 0 | 283 | 468 |
| Turn Type | | | Perm | Prot | | | | | | | Perm | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | | 4 | 4 |
| Permitted Phases | | | 2 | | | | | | | 4 | | 4 |
| Actuated Green, G (s) | | 14.0 | 14.0 | 21.0 | 39.0 | | | | | | 33.0 | 33.0 |
| Effective Green, g (s) | | 16.0 | 16.0 | 23.0 | 41.0 | | | | | | 35.0 | 35.0 |
| Actuated g/C Ratio | | 0.20 | 0.20 | 0.29 | 0.51 | | | | | | 0.44 | 0.44 |
| Clearance Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 1140 | 380 | 978 | 2921 | | | | | | 788 | 831 |
| v/s Ratio Prot | | 0.08 | | c0.23 | c0.31 | | | | | | | |
| v/s Ratio Perm | | | 0.05 | | | | | | | | 0.16 | c0.25 |
| v/c Ratio | | 0.41 | 0.23 | 0.80 | 0.61 | | | | | | 0.36 | 0.56 |
| Uniform Delay, d1 | | 27.9 | 26.8 | 26.4 | 13.9 | | | | | | 15.0 | 16.8 |
| Progression Factor | | 1.00 | 1.00 | 0.86 | 0.62 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.1 | 1.4 | 3.6 | 0.7 | | | | | | 1.3 | 2.8 |
| Delay (s) | | 29.0 | 28.2 | 26.2 | 9.2 | | | | | | 16.3 | 19.5 |
| Level of Service | | C | C | C | A | | | | | | B | B |
| Approach Delay (s) | | 28.7 | | | 14.4 | | | 0.0 | | | 18.3 | |
| Approach LOS | | C | | | B | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 18.9 | | | HCM Level of Service | | | | | B | |
| HCM Volume to Capacity ratio | | | 0.64 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | Sum of lost time (s) | | | | 4.0 | | |
| Intersection Capacity Utilization | | | 83.8% | | | ICU Level of Service | | | | | E | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |






























HCM Signalized Intersection Capacity Analysis
8: 5th Street & SR-30 Northbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. B
A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    | | |    |  |  |  |  | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | *1.00 | | | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | | | |
| Fr _t | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Fl _t Protected | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (prot) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Fl _t Permitted | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (perm) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Volume (vph) | 121 | 460 | 0 | 0 | 1551 | 277 | 897 | 0 | 416 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 127 | 484 | 0 | 0 | 1633 | 292 | 944 | 0 | 438 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 174 | 0 | 0 | 209 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 127 | 484 | 0 | 0 | 1633 | 118 | 472 | 472 | 229 | 0 | 0 | 0 |
| Turn Type | Prot | | | | Perm | | Perm | Perm | | | | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | | |
| Permitted Phases | | | | | 6 | | 8 | 8 | | | | |
| Actuated Green, G (s) | 7.8 | 42.0 | | | 30.2 | 30.2 | 30.0 | 30.0 | 30.0 | | | |
| Effective Green, g (s) | 9.8 | 44.0 | | | 32.2 | 32.2 | 32.0 | 32.0 | 32.0 | | | |
| Actuated g/C Ratio | 0.12 | 0.55 | | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | | | |
| Clearance Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 221 | 3135 | | | 2294 | 663 | 720 | 720 | 760 | | | |
| v/s Ratio Prot | c0.07 | 0.08 | | | c0.29 | | | | | | | |
| v/s Ratio Perm | | | | | 0.07 | | c0.26 | 0.26 | 0.12 | | | |
| v/c Ratio | 0.57 | 0.15 | | | 0.71 | 0.18 | 0.66 | 0.66 | 0.30 | | | |
| Uniform Delay, d ₁ | 33.1 | 8.9 | | | 20.0 | 15.4 | 19.5 | 19.5 | 16.4 | | | |
| Progression Factor | 0.66 | 0.81 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d ₂ | 3.3 | 0.1 | | | 1.9 | 0.6 | 4.6 | 4.6 | 1.0 | | | |
| Delay (s) | 25.1 | 7.2 | | | 21.9 | 16.0 | 24.1 | 24.1 | 17.4 | | | |
| Level of Service | C | A | | | C | B | C | C | B | | | |
| Approach Delay (s) | 11.0 | | | | 21.0 | | 22.0 | | | | 0.0 | |
| Approach LOS | B | | | | C | | C | | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | 19.8 | | | | HCM Level of Service | | | | B | | | |
| HCM Volume to Capacity ratio | 0.66 | | | | | | | | | | | |
| Actuated Cycle Length (s) | 80.0 | | | | Sum of lost time (s) | | | | 6.0 | | | |
| Intersection Capacity Utilization | 83.8% | | | | ICU Level of Service | | | | E | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 9: 5th Street & Boulder Avenue






























Year 2030 Land Use Alt. 1, Acc. Alt. B
 A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|---|--|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |   |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 8 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Fr't | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Volume (vph) | 3 | 450 | 322 | 441 | 1246 | 76 | 250 | 220 | 49 | 207 | 687 | 11 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 3 | 474 | 339 | 464 | 1312 | 80 | 263 | 232 | 52 | 218 | 723 | 12 |
| RTOR Reduction (vph) | 0 | 0 | 148 | 0 | 0 | 28 | 0 | 0 | 37 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 3 | 474 | 191 | 464 | 1312 | 52 | 263 | 232 | 15 | 218 | 734 | 0 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | |
| Actuated Green, G (s) | 1.1 | 18.2 | 18.2 | 28.6 | 45.7 | 45.7 | 7.0 | 28.1 | 28.1 | 11.0 | 32.1 | |
| Effective Green, g (s) | 3.1 | 20.2 | 20.2 | 30.6 | 47.7 | 47.7 | 9.0 | 30.1 | 30.1 | 13.0 | 34.1 | |
| Actuated g/C Ratio | 0.03 | 0.20 | 0.20 | 0.30 | 0.47 | 0.47 | 0.09 | 0.30 | 0.30 | 0.13 | 0.33 | |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 55 | 753 | 377 | 541 | 1779 | 771 | 300 | 1122 | 487 | 230 | 1272 | |
| v/s Ratio Prot | 0.00 | c0.12 | | c0.26 | c0.35 | | 0.08 | 0.06 | | c0.12 | c0.19 | |
| v/s Ratio Perm | | | 0.10 | | | 0.03 | | | 0.01 | | | |
| v/c Ratio | 0.05 | 0.63 | 0.51 | 0.86 | 0.74 | 0.07 | 0.88 | 0.21 | 0.03 | 0.95 | 0.58 | |
| Uniform Delay, d1 | 48.0 | 37.4 | 36.4 | 33.6 | 22.0 | 14.9 | 45.9 | 26.9 | 25.5 | 44.1 | 28.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.4 | 1.7 | 1.1 | 12.7 | 1.6 | 0.0 | 23.7 | 0.4 | 0.1 | 44.4 | 1.9 | |
| Delay (s) | 48.4 | 39.1 | 37.5 | 46.3 | 23.6 | 14.9 | 69.6 | 27.4 | 25.7 | 88.5 | 29.9 | |
| Level of Service | D | D | D | D | C | B | E | C | C | F | C | |
| Approach Delay (s) | | 38.5 | | | 28.9 | | | 47.5 | | | 43.3 | |
| Approach LOS | | D | | | C | | | D | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 36.5 | | | | HCM Level of Service | | | D | | |
| HCM Volume to Capacity ratio | | | 0.72 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 101.9 | | | | Sum of lost time (s) | | 8.0 | | | |
| Intersection Capacity Utilization | | | 78.9% | | | | ICU Level of Service | | D | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: 5th Street & Palm Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. B
P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|--|---|--|--|---|---|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |   |   |  |  |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 8 | 12 | 12 | 8 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Flt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 1647 | 1800 | 3800 | 1647 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 1647 | 1800 | 3800 | 1647 |
| Volume (vph) | 76 | 783 | 276 | 343 | 534 | 125 | 196 | 974 | 156 | 61 | 325 | 67 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 80 | 824 | 291 | 361 | 562 | 132 | 206 | 1025 | 164 | 64 | 342 | 71 |
| RTOR Reduction (vph) | 0 | 0 | 211 | 0 | 0 | 85 | 0 | 0 | 96 | 0 | 0 | 48 |
| Lane Group Flow (vph) | 80 | 824 | 80 | 361 | 562 | 47 | 206 | 1025 | 68 | 64 | 342 | 23 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 5.6 | 25.4 | 25.4 | 13.8 | 33.6 | 33.6 | 14.0 | 39.2 | 39.2 | 5.6 | 30.8 | 30.8 |
| Effective Green, g (s) | 7.6 | 27.4 | 27.4 | 15.8 | 35.6 | 35.6 | 16.0 | 41.2 | 41.2 | 7.6 | 32.8 | 32.8 |
| Actuated g/C Ratio | 0.08 | 0.27 | 0.27 | 0.16 | 0.36 | 0.36 | 0.16 | 0.41 | 0.41 | 0.08 | 0.33 | 0.33 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 137 | 1041 | 469 | 537 | 1353 | 609 | 288 | 1566 | 679 | 137 | 1246 | 540 |
| v/s Ratio Prot | 0.04 | c0.22 | | c0.11 | 0.15 | | c0.11 | c0.27 | | c0.04 | 0.09 | |
| v/s Ratio Perm | | | 0.05 | | | 0.03 | | | 0.04 | | | 0.01 |
| v/c Ratio | 0.58 | 0.79 | 0.17 | 0.67 | 0.42 | 0.08 | 0.72 | 0.65 | 0.10 | 0.47 | 0.27 | 0.04 |
| Uniform Delay, d1 | 44.7 | 33.7 | 27.6 | 39.7 | 24.3 | 21.3 | 39.8 | 23.7 | 18.0 | 44.3 | 24.8 | 22.9 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.41 | 0.09 | 0.06 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 6.2 | 6.2 | 0.8 | 2.6 | 0.7 | 0.2 | 8.2 | 2.1 | 0.3 | 2.5 | 0.5 | 0.2 |
| Delay (s) | 50.9 | 39.8 | 28.4 | 18.9 | 2.9 | 1.4 | 48.0 | 25.8 | 18.3 | 46.8 | 25.4 | 23.1 |
| Level of Service | D | D | C | B | A | A | D | C | B | D | C | C |
| Approach Delay (s) | | 37.8 | | | 8.2 | | | 28.2 | | | 27.9 | |
| Approach LOS | | D | | | A | | | C | | | C | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 25.8 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 76.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: 5th Street & Church Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. B
P.M. Peak Hour















| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------|-------|-------|-------|------|-------|------|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Volume (vph) | 165 | 836 | 944 | 193 | 89 | 59 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 174 | 880 | 994 | 203 | 94 | 62 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 124 | 0 | 41 |
| Lane Group Flow (vph) | 174 | 880 | 994 | 79 | 94 | 21 |
| Turn Type | Prot | | | Perm | | Perm |
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | | | | 6 | | 4 |
| Actuated Green, G (s) | 19.0 | 60.0 | 37.0 | 37.0 | 32.0 | 32.0 |
| Effective Green, g (s) | 21.0 | 62.0 | 39.0 | 39.0 | 34.0 | 34.0 |
| Actuated g/C Ratio | 0.21 | 0.62 | 0.39 | 0.39 | 0.34 | 0.34 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 378 | 2356 | 1482 | 741 | 612 | 646 |
| v/s Ratio Prot | c0.10 | 0.23 | c0.26 | | c0.05 | |
| v/s Ratio Perm | | | | 0.04 | | 0.01 |
| v/c Ratio | 0.46 | 0.37 | 0.67 | 0.11 | 0.15 | 0.03 |
| Uniform Delay, d1 | 34.5 | 9.4 | 25.2 | 19.4 | 23.0 | 22.0 |
| Progression Factor | 0.27 | 0.14 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.7 | 0.3 | 2.4 | 0.3 | 0.5 | 0.1 |
| Delay (s) | 10.0 | 1.7 | 27.6 | 19.7 | 23.5 | 22.1 |
| Level of Service | A | A | C | B | C | C |
| Approach Delay (s) | | 3.1 | 26.3 | | 23.0 | |
| Approach LOS | | A | C | | C | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 15.9 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.43 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 50.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

HCM Signalized Intersection Capacity Analysis
7: 5th Street & SR-30 Southbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. B
P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | ↑ | ↑↑ | ↑↑↑ | | | | | | ↑ | ↑ |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1700 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | 2.0 | 2.0 |
| Lane Util. Factor | | *1.00 | *1.00 | *1.00 | *1.00 | | | | | | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Flt Protected | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Flt Permitted | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Volume (vph) | 0 | 1434 | 961 | 488 | 1003 | 0 | 0 | 0 | 0 | 248 | 0 | 135 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 1509 | 1012 | 514 | 1056 | 0 | 0 | 0 | 0 | 261 | 0 | 142 |
| RTOR Reduction (vph) | 0 | 22 | 326 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| Lane Group Flow (vph) | 0 | 1694 | 479 | 514 | 1056 | 0 | 0 | 0 | 0 | 0 | 261 | 36 |
| Turn Type | | | Perm | Prot | | | | | | Perm | | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | | 4 | |
| Permitted Phases | | | 2 | | | | | | | 4 | | 4 |
| Actuated Green, G (s) | | 37.7 | 37.7 | 19.3 | 61.0 | | | | | | 21.0 | 21.0 |
| Effective Green, g (s) | | 39.7 | 39.7 | 21.3 | 63.0 | | | | | | 23.0 | 23.0 |
| Actuated g/C Ratio | | 0.44 | 0.44 | 0.24 | 0.70 | | | | | | 0.26 | 0.26 |
| Clearance Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 2514 | 838 | 805 | 3990 | | | | | | 460 | 486 |
| v/s Ratio Prot | | c0.30 | | c0.15 | 0.19 | | | | | | | |
| v/s Ratio Perm | | | 0.25 | | | | | | | | 0.14 | 0.02 |
| v/c Ratio | | 0.67 | 0.57 | 0.64 | 0.26 | | | | | | 0.57 | 0.07 |
| Uniform Delay, d1 | | 20.0 | 18.8 | 30.9 | 5.0 | | | | | | 29.2 | 25.4 |
| Progression Factor | | 1.00 | 1.00 | 1.04 | 0.09 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.5 | 2.8 | 1.4 | 0.1 | | | | | | 5.0 | 0.3 |
| Delay (s) | | 21.5 | 21.6 | 33.6 | 0.6 | | | | | | 34.2 | 25.7 |
| Level of Service | | C | C | C | A | | | | | | C | C |
| Approach Delay (s) | | 21.5 | | | 11.4 | | | 0.0 | | | 31.2 | |
| Approach LOS | | C | | | B | | | A | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 18.8 | | | HCM Level of Service | | | | B | | |
| HCM Volume to Capacity ratio | | | 0.62 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | Sum of lost time (s) | | | | 6.0 | | |
| Intersection Capacity Utilization | | | 80.9% | | | ICU Level of Service | | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | |






























HCM Signalized Intersection Capacity Analysis
8: 5th Street & SR-30 Northbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. B
P.M. Peak Hour

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|-------|-------|------|-------|------|----------------------|-------|-------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | *1.00 | | | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Flt Protected | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (prot) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Flt Permitted | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (perm) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Volume (vph) | 244 | 1439 | 0 | 0 | 865 | 191 | 626 | 0 | 750 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 257 | 1515 | 0 | 0 | 911 | 201 | 659 | 0 | 789 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 150 | 0 | 0 | 13 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 257 | 1515 | 0 | 0 | 911 | 51 | 330 | 329 | 776 | 0 | 0 | 0 |
| Turn Type | Prot | | | | | Perm | Perm | | Perm | | | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | | |
| Permitted Phases | | | | | | 6 | 8 | | 8 | | | |
| Actuated Green, G (s) | 21.0 | 46.0 | | | 21.0 | 21.0 | 36.0 | 36.0 | 36.0 | | | |
| Effective Green, g (s) | 23.0 | 48.0 | | | 23.0 | 23.0 | 38.0 | 38.0 | 38.0 | | | |
| Actuated g/C Ratio | 0.26 | 0.53 | | | 0.26 | 0.26 | 0.42 | 0.42 | 0.42 | | | |
| Clearance Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 460 | 3040 | | | 1457 | 421 | 760 | 760 | 802 | | | |
| v/s Ratio Prot | c0.14 | 0.27 | | | c0.16 | | | | | | | |
| v/s Ratio Perm | | | | | | 0.03 | 0.18 | 0.18 | c0.41 | | | |
| v/c Ratio | 0.56 | 0.50 | | | 0.63 | 0.12 | 0.43 | 0.43 | 0.97 | | | |
| Uniform Delay, d1 | 29.1 | 13.3 | | | 29.7 | 25.7 | 18.4 | 18.4 | 25.4 | | | |
| Progression Factor | 0.68 | 0.25 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 1.1 | 0.4 | | | 2.0 | 0.6 | 1.8 | 1.8 | 24.7 | | | |
| Delay (s) | 20.8 | 3.8 | | | 31.7 | 26.3 | 20.2 | 20.2 | 50.1 | | | |
| Level of Service | C | A | | | C | C | C | C | D | | | |
| Approach Delay (s) | | 6.3 | | | 30.7 | | | 36.5 | | | 0.0 | |
| Approach LOS | | A | | | C | | | D | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 22.7 | | | | HCM Level of Service | | | | C | |
| HCM Volume to Capacity ratio | | | 0.75 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | | Sum of lost time (s) | | | | 6.0 | |
| Intersection Capacity Utilization | | | 80.9% | | | | ICU Level of Service | | | | D | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 9: 5th Street & Boulder Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. B
 P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|---|--|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |   |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 8 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Fr _t | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fl _t Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Fl _t Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Volume (vph) | 11 | 1000 | 455 | 4 | 155 | 107 | 613 | 1059 | 64 | 321 | 722 | 64 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 12 | 1053 | 479 | 4 | 163 | 113 | 645 | 1115 | 67 | 338 | 760 | 67 |
| RTOR Reduction (vph) | 0 | 0 | 318 | 0 | 0 | 75 | 0 | 0 | 12 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 12 | 1053 | 161 | 4 | 163 | 38 | 645 | 1115 | 55 | 338 | 821 | 0 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | |
| Actuated Green, G (s) | 1.1 | 29.4 | 29.4 | 1.1 | 29.4 | 29.4 | 16.1 | 30.1 | 30.1 | 17.1 | 31.1 | 31.1 |
| Effective Green, g (s) | 3.1 | 31.4 | 31.4 | 3.1 | 31.4 | 31.4 | 18.1 | 32.1 | 32.1 | 19.1 | 33.1 | 33.1 |
| Actuated g/C Ratio | 0.03 | 0.34 | 0.34 | 0.03 | 0.34 | 0.34 | 0.19 | 0.34 | 0.34 | 0.20 | 0.35 | 0.35 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 60 | 1273 | 637 | 60 | 1273 | 552 | 657 | 1302 | 564 | 367 | 1342 | 60 |
| v/s Ratio Prot | 0.01 | c0.28 | | 0.00 | c0.04 | | c0.19 | c0.29 | | 0.19 | 0.22 | |
| v/s Ratio Perm | | | 0.08 | | | 0.02 | | | 0.03 | | | |
| v/c Ratio | 0.20 | 0.83 | 0.25 | 0.07 | 0.13 | 0.07 | 0.98 | 0.86 | 0.10 | 0.92 | 0.61 | 0.61 |
| Uniform Delay, d ₁ | 44.1 | 28.7 | 22.6 | 43.9 | 21.6 | 21.2 | 37.6 | 28.7 | 20.9 | 36.6 | 25.0 | 25.0 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d ₂ | 1.6 | 4.6 | 0.2 | 0.5 | 0.0 | 0.1 | 30.4 | 7.4 | 0.3 | 27.9 | 2.1 | 2.1 |
| Delay (s) | 45.7 | 33.2 | 22.8 | 44.4 | 21.7 | 21.3 | 68.0 | 36.1 | 21.3 | 64.5 | 27.1 | 27.1 |
| Level of Service | D | C | C | D | C | C | E | D | C | E | C | C |
| Approach Delay (s) | | 30.1 | | | 21.8 | | | 46.8 | | | 37.9 | |
| Approach LOS | | C | | | C | | | D | | | D | |






























Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 37.8 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 93.7 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 85.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: 5th Street & Palm Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. D
A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|--|--|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |   |   |  |  |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 8 | 12 | 12 | 8 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Flt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 1647 | 1800 | 3800 | 1647 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 1647 | 1800 | 3800 | 1647 |
| Volume (vph) | 22 | 314 | 224 | 1143 | 995 | 74 | 86 | 134 | 40 | 102 | 893 | 120 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 23 | 331 | 236 | 1203 | 1047 | 78 | 91 | 141 | 42 | 107 | 940 | 126 |
| RTOR Reduction (vph) | 0 | 0 | 72 | 0 | 0 | 34 | 0 | 0 | 32 | 0 | 0 | 67 |
| Lane Group Flow (vph) | 23 | 331 | 164 | 1203 | 1047 | 44 | 91 | 141 | 10 | 107 | 940 | 60 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 3.6 | 25.4 | 25.4 | 49.6 | 71.4 | 71.4 | 6.0 | 30.0 | 30.0 | 9.0 | 33.0 | 33.0 |
| Effective Green, g (s) | 5.6 | 27.4 | 27.4 | 51.6 | 73.4 | 73.4 | 8.0 | 32.0 | 32.0 | 11.0 | 35.0 | 35.0 |
| Actuated g/C Ratio | 0.04 | 0.21 | 0.21 | 0.40 | 0.56 | 0.56 | 0.06 | 0.25 | 0.25 | 0.08 | 0.27 | 0.27 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 78 | 801 | 360 | 1350 | 2146 | 965 | 111 | 935 | 405 | 152 | 1023 | 443 |
| v/s Ratio Prot | 0.01 | 0.09 | | c0.35 | 0.28 | | c0.05 | 0.04 | | 0.06 | c0.25 | |
| v/s Ratio Perm | | | c0.10 | | | 0.03 | | | 0.01 | | | 0.04 |
| v/c Ratio | 0.29 | 0.41 | 0.46 | 0.89 | 0.49 | 0.05 | 0.82 | 0.15 | 0.03 | 0.70 | 0.92 | 0.13 |
| Uniform Delay, d1 | 60.3 | 44.4 | 44.8 | 36.6 | 17.0 | 12.6 | 60.3 | 38.4 | 37.2 | 57.9 | 46.1 | 36.0 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.72 | 0.40 | 0.20 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 2.1 | 1.6 | 4.1 | 5.1 | 0.5 | 0.1 | 35.7 | 0.3 | 0.1 | 13.8 | 14.3 | 0.6 |
| Delay (s) | 62.4 | 45.9 | 48.9 | 31.5 | 7.4 | 2.6 | 96.0 | 38.7 | 37.3 | 71.7 | 60.4 | 36.6 |
| Level of Service | E | D | D | C | A | A | F | D | D | E | E | D |
| Approach Delay (s) | | 47.8 | | | 19.7 | | | 57.5 | | | 58.9 | |
| Approach LOS | | D | | | B | | | E | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 36.4 | HCM Level of Service | | | | D | | | | |
| HCM Volume to Capacity ratio | | | 0.78 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | Sum of lost time (s) | | | | 8.0 | | | | |
| Intersection Capacity Utilization | | | 88.2% | ICU Level of Service | | | | E | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: 5th Street & Church Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. D
A.M. Peak Hour















| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------|-------|-------|-------|------|-------|------|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Volume (vph) | 25 | 430 | 1987 | 76 | 191 | 225 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 26 | 453 | 2092 | 80 | 201 | 237 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 22 | 0 | 66 |
| Lane Group Flow (vph) | 26 | 453 | 2092 | 58 | 201 | 171 |
| Turn Type | Prot | | Perm | | Perm | |
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | | | | 6 | | 4 |
| Actuated Green, G (s) | 3.6 | 94.0 | 86.4 | 86.4 | 28.0 | 28.0 |
| Effective Green, g (s) | 5.6 | 96.0 | 88.4 | 88.4 | 30.0 | 30.0 |
| Actuated g/C Ratio | 0.04 | 0.74 | 0.68 | 0.68 | 0.23 | 0.23 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 78 | 2806 | 2584 | 1292 | 415 | 438 |
| v/s Ratio Prot | c0.01 | 0.12 | c0.55 | | c0.11 | |
| v/s Ratio Perm | | | | 0.03 | | 0.09 |
| v/c Ratio | 0.33 | 0.16 | 0.81 | 0.04 | 0.48 | 0.39 |
| Uniform Delay, d1 | 60.4 | 5.0 | 14.8 | 6.9 | 43.3 | 42.3 |
| Progression Factor | 0.73 | 0.07 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 2.3 | 0.1 | 2.9 | 0.1 | 4.0 | 2.6 |
| Delay (s) | 46.2 | 0.4 | 17.7 | 6.9 | 47.3 | 44.9 |
| Level of Service | D | A | B | A | D | D |
| Approach Delay (s) | | 2.9 | 17.3 | | 46.0 | |
| Approach LOS | | A | B | | D | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 19.1 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 75.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

HCM Signalized Intersection Capacity Analysis
7: 5th Street & SR-30 Southbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. D
A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | ↑ | ↑↑ | ↑↑↑ | | | | | | ↑ | ↑ |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1700 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | 2.0 | 2.0 |
| Lane Util. Factor | | *1.00 | *1.00 | *1.00 | *1.00 | | | | | | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Flt Protected | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Flt Permitted | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Volume (vph) | 0 | 312 | 829 | 747 | 1701 | 0 | 0 | 0 | 0 | 269 | 0 | 449 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 328 | 873 | 786 | 1791 | 0 | 0 | 0 | 0 | 283 | 0 | 473 |
| RTOR Reduction (vph) | 0 | 302 | 355 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Lane Group Flow (vph) | 0 | 462 | 82 | 786 | 1791 | 0 | 0 | 0 | 0 | 0 | 283 | 467 |
| Turn Type | | | Perm | Prot | | | | | | Perm | | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | | 4 | |
| Permitted Phases | | | 2 | | | | | | | 4 | | 4 |
| Actuated Green, G (s) | | 13.0 | 13.0 | 23.0 | 40.0 | | | | | | 32.0 | 32.0 |
| Effective Green, g (s) | | 15.0 | 15.0 | 25.0 | 42.0 | | | | | | 34.0 | 34.0 |
| Actuated g/C Ratio | | 0.19 | 0.19 | 0.31 | 0.52 | | | | | | 0.42 | 0.42 |
| Clearance Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 1069 | 356 | 1063 | 2993 | | | | | | 765 | 808 |
| v/s Ratio Prot | | 0.08 | | c0.23 | c0.31 | | | | | | | |
| v/s Ratio Perm | | | 0.04 | | | | | | | | 0.16 | c0.25 |
| v/c Ratio | | 0.43 | 0.23 | 0.74 | 0.60 | | | | | | 0.37 | 0.58 |
| Uniform Delay, d1 | | 28.7 | 27.6 | 24.6 | 13.2 | | | | | | 15.7 | 17.5 |
| Progression Factor | | 1.00 | 1.00 | 0.74 | 0.55 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.3 | 1.5 | 2.0 | 0.6 | | | | | | 1.4 | 3.0 |
| Delay (s) | | 30.0 | 29.1 | 20.1 | 7.9 | | | | | | 17.1 | 20.5 |
| Level of Service | | C | C | C | A | | | | | | B | C |
| Approach Delay (s) | | 29.7 | | | 11.6 | | | 0.0 | | | 19.2 | |
| Approach LOS | | C | | | B | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 17.7 | | | HCM Level of Service | | | | B | | |
| HCM Volume to Capacity ratio | | | 0.62 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | Sum of lost time (s) | | | 6.0 | | | |
| Intersection Capacity Utilization | | | 83.8% | | | ICU Level of Service | | | E | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 8: 5th Street & SR-30 Northbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. D
 A.M. Peak Hour

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|-------|------|------|----------------------|------|-------|-------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | *1.00 | | | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Flt Protected | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (prot) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Flt Permitted | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (perm) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Volume (vph) | 121 | 460 | 0 | 0 | 1551 | 277 | 897 | 0 | 416 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 127 | 484 | 0 | 0 | 1633 | 292 | 944 | 0 | 438 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 178 | 0 | 0 | 209 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 127 | 484 | 0 | 0 | 1633 | 114 | 472 | 472 | 229 | 0 | 0 | 0 |
| Turn Type | Prot | | | | Perm | | Perm | Perm | | | | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | | |
| Permitted Phases | | | | | 6 | | 8 | 8 | | | | |
| Actuated Green, G (s) | 8.7 | 42.0 | | | 29.3 | 29.3 | 30.0 | 30.0 | 30.0 | | | |
| Effective Green, g (s) | 10.7 | 44.0 | | | 31.3 | 31.3 | 32.0 | 32.0 | 32.0 | | | |
| Actuated g/C Ratio | 0.13 | 0.55 | | | 0.39 | 0.39 | 0.40 | 0.40 | 0.40 | | | |
| Clearance Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 241 | 3135 | | | 2230 | 644 | 720 | 720 | 760 | | | |
| v/s Ratio Prot | c0.07 | 0.08 | | | c0.29 | | | | | | | |
| v/s Ratio Perm | | | | | | 0.07 | c0.26 | 0.26 | 0.12 | | | |
| v/c Ratio | 0.53 | 0.15 | | | 0.73 | 0.18 | 0.66 | 0.66 | 0.30 | | | |
| Uniform Delay, d1 | 32.3 | 8.9 | | | 20.8 | 15.9 | 19.5 | 19.5 | 16.4 | | | |
| Progression Factor | 0.89 | 0.35 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 1.9 | 0.1 | | | 2.2 | 0.6 | 4.6 | 4.6 | 1.0 | | | |
| Delay (s) | 30.6 | 3.2 | | | 22.9 | 16.5 | 24.1 | 24.1 | 17.4 | | | |
| Level of Service | C | A | | | C | B | C | C | B | | | |
| Approach Delay (s) | 8.9 | | | | 22.0 | | 22.0 | | 0.0 | | | |
| Approach LOS | A | | | | C | | C | | A | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | 19.9 | | | | HCM Level of Service | | | | B | | | |
| HCM Volume to Capacity ratio | 0.66 | | | | | | | | | | | |
| Actuated Cycle Length (s) | 80.0 | | | | Sum of lost time (s) | | | | 6.0 | | | |
| Intersection Capacity Utilization | 83.8% | | | | ICU Level of Service | | | | E | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 9: 5th Street & Boulder Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. D
 A.M. Peak Hour



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↘ | ↑↑ | ↗ | ↘ | ↑↑ | ↗ | ↘↗ | ↑↑ | ↗ | ↘ | ↑↑ | ↗ |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 8 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Fr _t | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fl _t Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Fl _t Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Volume (vph) | 3 | 450 | 322 | 441 | 1246 | 76 | 250 | 220 | 49 | 207 | 687 | 11 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 3 | 474 | 339 | 464 | 1312 | 80 | 263 | 232 | 52 | 218 | 723 | 12 |
| RTOR Reduction (vph) | 0 | 0 | 154 | 0 | 0 | 28 | 0 | 0 | 37 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 3 | 474 | 185 | 464 | 1312 | 52 | 263 | 232 | 15 | 218 | 734 | 0 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | |
| Actuated Green, G (s) | 1.1 | 18.1 | 18.1 | 28.7 | 45.7 | 45.7 | 7.0 | 28.1 | 28.1 | 11.0 | 32.1 | |
| Effective Green, g (s) | 3.1 | 20.1 | 20.1 | 30.7 | 47.7 | 47.7 | 9.0 | 30.1 | 30.1 | 13.0 | 34.1 | |
| Actuated g/C Ratio | 0.03 | 0.20 | 0.20 | 0.30 | 0.47 | 0.47 | 0.09 | 0.30 | 0.30 | 0.13 | 0.33 | |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 55 | 750 | 375 | 542 | 1779 | 771 | 300 | 1122 | 487 | 230 | 1272 | |
| v/s Ratio Prot | 0.00 | 0.12 | | c0.26 | c0.35 | | c0.08 | 0.06 | | c0.12 | c0.19 | |
| v/s Ratio Perm | | | 0.10 | | | 0.03 | | | 0.01 | | | |
| v/c Ratio | 0.05 | 0.63 | 0.49 | 0.86 | 0.74 | 0.07 | 0.88 | 0.21 | 0.03 | 0.95 | 0.58 | |
| Uniform Delay, d ₁ | 48.0 | 37.5 | 36.4 | 33.5 | 22.0 | 14.9 | 45.9 | 26.9 | 25.5 | 44.1 | 28.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d ₂ | 0.4 | 1.7 | 1.0 | 12.6 | 1.6 | 0.0 | 23.7 | 0.4 | 0.1 | 44.4 | 1.9 | |
| Delay (s) | 48.4 | 39.3 | 37.4 | 46.1 | 23.6 | 14.9 | 69.6 | 27.4 | 25.7 | 88.5 | 29.9 | |
| Level of Service | D | D | D | D | C | B | E | C | C | F | C | |
| Approach Delay (s) | | 38.5 | | | 28.9 | | | 47.5 | | | 43.3 | |
| Approach LOS | | D | | | C | | | D | | | D | |






























Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 36.5 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.76 | | |
| Actuated Cycle Length (s) | 101.9 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 78.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: 5th Street & Palm Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. D
P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|--|--|---|---|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |   |   |  |  |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 8 | 12 | 12 | 8 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Flt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 1647 | 1800 | 3800 | 1647 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 1647 | 1800 | 3800 | 1647 |
| Volume (vph) | 76 | 783 | 276 | 294 | 534 | 125 | 196 | 974 | 56 | 61 | 325 | 67 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 80 | 824 | 291 | 309 | 562 | 132 | 206 | 1025 | 59 | 64 | 342 | 71 |
| RTOR Reduction (vph) | 0 | 0 | 172 | 0 | 0 | 83 | 0 | 0 | 27 | 0 | 0 | 49 |
| Lane Group Flow (vph) | 80 | 824 | 119 | 309 | 562 | 49 | 206 | 1025 | 32 | 64 | 342 | 22 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | | 4 |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 10.4 | 39.9 | 39.9 | 16.3 | 45.8 | 45.8 | 19.4 | 49.0 | 49.0 | 8.8 | 38.4 | 38.4 |
| Effective Green, g (s) | 12.4 | 41.9 | 41.9 | 18.3 | 47.8 | 47.8 | 21.4 | 51.0 | 51.0 | 10.8 | 40.4 | 40.4 |
| Actuated g/C Ratio | 0.10 | 0.32 | 0.32 | 0.14 | 0.37 | 0.37 | 0.16 | 0.39 | 0.39 | 0.08 | 0.31 | 0.31 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 172 | 1225 | 551 | 479 | 1397 | 629 | 296 | 1491 | 646 | 150 | 1181 | 512 |
| v/s Ratio Prot | 0.04 | c0.22 | | c0.09 | 0.15 | | c0.11 | c0.27 | | c0.04 | 0.09 | |
| v/s Ratio Perm | | | 0.07 | | | 0.03 | | | 0.02 | | | 0.01 |
| v/c Ratio | 0.47 | 0.67 | 0.22 | 0.65 | 0.40 | 0.08 | 0.70 | 0.69 | 0.05 | 0.43 | 0.29 | 0.04 |
| Uniform Delay, d1 | 55.7 | 38.1 | 32.1 | 52.8 | 30.5 | 26.7 | 51.2 | 32.9 | 24.5 | 56.7 | 33.9 | 31.3 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.59 | 0.64 | 1.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 2.0 | 3.0 | 0.9 | 2.7 | 0.8 | 0.2 | 6.9 | 2.6 | 0.1 | 1.9 | 0.6 | 0.2 |
| Delay (s) | 57.6 | 41.1 | 33.0 | 33.7 | 20.4 | 52.5 | 58.2 | 35.5 | 24.6 | 58.6 | 34.6 | 31.5 |
| Level of Service | E | D | C | C | C | D | E | D | C | E | C | C |
| Approach Delay (s) | | 40.2 | | | 28.7 | | | 38.6 | | | 37.3 | |
| Approach LOS | | D | | | C | | | D | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 36.4 | | | | HCM Level of Service | | | | D | |
| HCM Volume to Capacity ratio | | | 0.64 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | Sum of lost time (s) | | | 8.0 | | |
| Intersection Capacity Utilization | | | 76.3% | | | | ICU Level of Service | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
5: 5th Street & Church Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. D
P.M. Peak Hour















| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------|-------|-------|-------|------|-------|------|
| Lane Configurations | ↗ | ↑↑ | ↑↑ | ↗ | ↗ | ↗ |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Volume (vph) | 165 | 836 | 891 | 193 | 89 | 59 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 174 | 880 | 938 | 203 | 94 | 62 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 103 | 0 | 42 |
| Lane Group Flow (vph) | 174 | 880 | 938 | 100 | 94 | 20 |
| Turn Type | Prot | | | Perm | | Perm |
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | | | | 6 | | 4 |
| Actuated Green, G (s) | 17.1 | 83.0 | 61.9 | 61.9 | 39.0 | 39.0 |
| Effective Green, g (s) | 19.1 | 85.0 | 63.9 | 63.9 | 41.0 | 41.0 |
| Actuated g/C Ratio | 0.15 | 0.65 | 0.49 | 0.49 | 0.32 | 0.32 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 264 | 2485 | 1868 | 934 | 568 | 599 |
| v/s Ratio Prot | c0.10 | 0.23 | c0.25 | | c0.05 | |
| v/s Ratio Perm | | | | 0.05 | | 0.01 |
| v/c Ratio | 0.66 | 0.35 | 0.50 | 0.11 | 0.17 | 0.03 |
| Uniform Delay, d1 | 52.4 | 10.1 | 22.3 | 17.7 | 32.1 | 30.8 |
| Progression Factor | 0.44 | 1.33 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 5.0 | 0.3 | 1.0 | 0.2 | 0.6 | 0.1 |
| Delay (s) | 28.1 | 13.8 | 23.3 | 18.0 | 32.8 | 30.9 |
| Level of Service | C | B | C | B | C | C |
| Approach Delay (s) | | 16.1 | 22.3 | | 32.0 | |
| Approach LOS | | B | C | | C | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 20.2 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.41 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 49.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

























HCM Signalized Intersection Capacity Analysis
 7: 5th Street & SR-30 Southbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. D
 P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | ↑ | ↑↑ | ↑↑↑ | | | | | | ↑ | ↑ |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1700 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | 2.0 | 2.0 |
| Lane Util. Factor | | *1.00 | *1.00 | *1.00 | *1.00 | | | | | | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Flt Protected | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Flt Permitted | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Volume (vph) | 0 | 1434 | 961 | 488 | 1003 | 0 | 0 | 0 | 0 | 248 | 0 | 135 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 1509 | 1012 | 514 | 1056 | 0 | 0 | 0 | 0 | 261 | 0 | 142 |
| RTOR Reduction (vph) | 0 | 22 | 339 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| Lane Group Flow (vph) | 0 | 1689 | 471 | 514 | 1056 | 0 | 0 | 0 | 0 | 0 | 261 | 36 |
| Turn Type | | | Perm | Prot | | | | | | Perm | | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | | 4 | |
| Permitted Phases | | | 2 | | | | | | | 4 | | 4 |
| Actuated Green, G (s) | | 35.0 | 35.0 | 22.0 | 61.0 | | | | | | 21.0 | 21.0 |
| Effective Green, g (s) | | 37.0 | 37.0 | 24.0 | 63.0 | | | | | | 23.0 | 23.0 |
| Actuated g/C Ratio | | 0.41 | 0.41 | 0.27 | 0.70 | | | | | | 0.26 | 0.26 |
| Clearance Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 2343 | 781 | 907 | 3990 | | | | | | 460 | 486 |
| v/s Ratio Prot | | c0.30 | | c0.15 | 0.19 | | | | | | | |
| v/s Ratio Perm | | | 0.25 | | | | | | | | 0.14 | 0.02 |
| v/c Ratio | | 0.72 | 0.60 | 0.57 | 0.26 | | | | | | 0.57 | 0.07 |
| Uniform Delay, d1 | | 22.2 | 20.7 | 28.5 | 5.0 | | | | | | 29.2 | 25.4 |
| Progression Factor | | 1.00 | 1.00 | 0.58 | 0.44 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 2.0 | 3.4 | 0.7 | 0.1 | | | | | | 5.0 | 0.3 |
| Delay (s) | | 24.1 | 24.2 | 17.4 | 2.4 | | | | | | 34.2 | 25.7 |
| Level of Service | | C | C | B | A | | | | | | C | C |
| Approach Delay (s) | | 24.1 | | | 7.3 | | | 0.0 | | | 31.2 | |
| Approach LOS | | C | | | A | | | A | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 18.9 | | | HCM Level of Service | | | | B | | |
| HCM Volume to Capacity ratio | | | 0.62 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | Sum of lost time (s) | | | | 6.0 | | |
| Intersection Capacity Utilization | | | 80.9% | | | ICU Level of Service | | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 8: 5th Street & SR-30 Northbound Ramps






























Year 2030 Land Use Alt. 1, Acc. Alt. D
 P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    | | |    |  |  |  |  |  | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | *1.00 | | | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Flt Protected | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (prot) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Flt Permitted | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (perm) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Volume (vph) | 244 | 1438 | 0 | 0 | 861 | 191 | 626 | 0 | 750 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 257 | 1514 | 0 | 0 | 906 | 201 | 659 | 0 | 789 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 139 | 0 | 0 | 15 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 257 | 1514 | 0 | 0 | 906 | 62 | 330 | 329 | 774 | 0 | 0 | 0 |
| Turn Type | Prot | | | | | | Perm | Perm | Perm | | | |
| Protected Phases | 5 | 2 | | | | | 6 | 8 | | 8 | | |
| Permitted Phases | | | | | | | 6 | 8 | 8 | | | |
| Actuated Green, G (s) | 17.1 | 47.0 | | | | | 25.9 | 25.9 | 35.0 | 35.0 | 35.0 | |
| Effective Green, g (s) | 19.1 | 49.0 | | | | | 27.9 | 27.9 | 37.0 | 37.0 | 37.0 | |
| Actuated g/C Ratio | 0.21 | 0.54 | | | | | 0.31 | 0.31 | 0.41 | 0.41 | 0.41 | |
| Clearance Time (s) | 4.0 | 4.0 | | | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 382 | 3103 | | | | | 1767 | 511 | 740 | 740 | 781 | |
| v/s Ratio Prot | c0.14 | c0.27 | | | | | 0.16 | | | | | |
| v/s Ratio Perm | | | | | | | 0.04 | 0.18 | 0.18 | c0.41 | | |
| v/c Ratio | 0.67 | 0.49 | | | | | 0.51 | 0.12 | 0.45 | 0.44 | 0.99 | |
| Uniform Delay, d1 | 32.6 | 12.7 | | | | | 25.5 | 22.3 | 19.1 | 19.1 | 26.3 | |
| Progression Factor | 1.49 | 0.22 | | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 3.3 | 0.4 | | | | | 1.1 | 0.5 | 1.9 | 1.9 | 30.2 | |
| Delay (s) | 52.0 | 3.2 | | | | | 26.5 | 22.8 | 21.1 | 21.0 | 56.5 | |
| Level of Service | D | A | | | | | C | C | C | C | E | |
| Approach Delay (s) | 10.3 | | | | | | 25.9 | 40.4 | | 0.0 | | |
| Approach LOS | B | | | | | | C | D | | A | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | 24.3 | | HCM Level of Service | | | | C | | | | | |
| HCM Volume to Capacity ratio | 0.74 | | | | | | | | | | | |
| Actuated Cycle Length (s) | 90.0 | | Sum of lost time (s) | | | | 4.0 | | | | | |
| Intersection Capacity Utilization | 80.9% | | ICU Level of Service | | | | D | | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: 5th Street & Boulder Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. D
P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|---|--|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |   |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 8 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | |
| Fr't | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fl't Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | |
| Fl't Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | |
| Volume (vph) | 11 | 1000 | 455 | 4 | 155 | 107 | 613 | 1059 | 64 | 321 | 772 | 64 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 12 | 1053 | 479 | 4 | 163 | 113 | 645 | 1115 | 67 | 338 | 813 | 67 |
| RTOR Reduction (vph) | 0 | 0 | 323 | 0 | 0 | 81 | 0 | 0 | 11 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 12 | 1053 | 156 | 4 | 163 | 32 | 645 | 1115 | 56 | 338 | 874 | 0 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | |
| Actuated Green, G (s) | 5.1 | 31.4 | 31.4 | 1.1 | 27.4 | 27.4 | 21.0 | 33.5 | 33.5 | 20.7 | 33.2 | |
| Effective Green, g (s) | 7.1 | 33.4 | 33.4 | 3.1 | 29.4 | 29.4 | 23.0 | 35.5 | 35.5 | 22.7 | 35.2 | |
| Actuated g/C Ratio | 0.07 | 0.33 | 0.33 | 0.03 | 0.29 | 0.29 | 0.22 | 0.35 | 0.35 | 0.22 | 0.34 | |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 124 | 1236 | 618 | 54 | 1088 | 471 | 761 | 1314 | 569 | 398 | 1302 | |
| v/s Ratio Prot | c0.01 | c0.28 | | 0.00 | 0.04 | | 0.19 | c0.29 | | c0.19 | 0.23 | |
| v/s Ratio Perm | | | 0.08 | | | 0.02 | | | 0.03 | | | |
| v/c Ratio | 0.10 | 0.85 | 0.25 | 0.07 | 0.15 | 0.07 | 0.85 | 0.85 | 0.10 | 0.85 | 0.67 | |
| Uniform Delay, d1 | 44.8 | 32.3 | 25.5 | 48.4 | 27.3 | 26.7 | 38.2 | 31.1 | 22.8 | 38.4 | 28.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.3 | 5.9 | 0.2 | 0.6 | 0.1 | 0.1 | 8.7 | 7.0 | 0.3 | 15.4 | 2.8 | |
| Delay (s) | 45.1 | 38.2 | 25.7 | 49.0 | 27.4 | 26.7 | 46.9 | 38.1 | 23.1 | 53.8 | 31.6 | |
| Level of Service | D | D | C | D | C | C | D | D | C | D | C | |
| Approach Delay (s) | | 34.4 | | | 27.4 | | | 40.6 | | | 37.7 | |
| Approach LOS | | C | | | C | | | D | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 37.2 | | | | HCM Level of Service | | | D | | |
| HCM Volume to Capacity ratio | | | 0.80 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 102.7 | | | | Sum of lost time (s) | | | 6.0 | | |
| Intersection Capacity Utilization | | | 85.7% | | | | ICU Level of Service | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: 5th Street & Palm Avenue

Year 2030 Land Use Alt. 2, Acc. Alt. C
A.M. Peak Hour

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|-------|-------|-------|-------|------|----------------------|-------|-------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 12 | 12 | 12 | 8 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | *1.00 | 1.00 | *1.00 | 1.00 |
| Fr't | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 3800 | 1800 | 3800 | 1647 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 3800 | 1800 | 3800 | 1647 |
| Volume (vph) | 22 | 323 | 219 | 1173 | 1002 | 74 | 84 | 134 | 521 | 102 | 893 | 120 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 23 | 340 | 231 | 1235 | 1055 | 78 | 88 | 141 | 548 | 107 | 940 | 126 |
| RTOR Reduction (vph) | 0 | 0 | 70 | 0 | 0 | 33 | 0 | 0 | 118 | 0 | 0 | 67 |
| Lane Group Flow (vph) | 23 | 340 | 161 | 1235 | 1055 | 45 | 88 | 141 | 430 | 107 | 940 | 59 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | pm+ov | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | 1 | 7 | | 4 |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 3.6 | 28.4 | 28.4 | 48.6 | 73.4 | 73.4 | 6.0 | 31.0 | 79.6 | 6.0 | 31.0 | 31.0 |
| Effective Green, g (s) | 5.6 | 30.4 | 30.4 | 50.6 | 75.4 | 75.4 | 8.0 | 33.0 | 83.6 | 8.0 | 33.0 | 33.0 |
| Actuated g/C Ratio | 0.04 | 0.23 | 0.23 | 0.39 | 0.58 | 0.58 | 0.06 | 0.25 | 0.64 | 0.06 | 0.25 | 0.25 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 78 | 889 | 400 | 1323 | 2204 | 992 | 111 | 965 | 2444 | 111 | 965 | 418 |
| v/s Ratio Prot | 0.01 | 0.09 | | c0.36 | c0.28 | | c0.05 | 0.04 | 0.07 | 0.06 | c0.25 | |
| v/s Ratio Perm | | | c0.09 | | | 0.03 | | | 0.04 | | | 0.04 |
| v/c Ratio | 0.29 | 0.38 | 0.40 | 0.93 | 0.48 | 0.05 | 0.79 | 0.15 | 0.18 | 0.96 | 0.97 | 0.14 |
| Uniform Delay, d1 | 60.3 | 41.9 | 42.1 | 38.1 | 15.9 | 11.8 | 60.2 | 37.6 | 9.3 | 60.9 | 48.1 | 37.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.67 | 0.36 | 0.13 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 2.1 | 1.2 | 3.0 | 6.6 | 0.4 | 0.0 | 31.0 | 0.3 | 0.0 | 73.4 | 23.4 | 0.7 |
| Delay (s) | 62.4 | 43.2 | 45.1 | 32.2 | 6.0 | 1.6 | 91.2 | 37.9 | 9.4 | 134.3 | 71.4 | 38.2 |
| Level of Service | E | D | D | C | A | A | F | D | A | F | E | D |
| Approach Delay (s) | | 44.7 | | | 19.5 | | | 23.8 | | | 73.6 | |
| Approach LOS | | D | | | B | | | C | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 36.2 | | | | HCM Level of Service | | | | D | |
| HCM Volume to Capacity ratio | | | 0.81 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | Sum of lost time (s) | | | 10.0 | | |
| Intersection Capacity Utilization | | | 89.3% | | | | ICU Level of Service | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: 5th Street & Church Avenue

Year 2030 Land Use Alt. 2, Acc. Alt. C
A.M. Peak Hour















| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations | ↗ | ↑↑ | ↑↑ | ↗ | ↗ | ↗ |
| Ideal Flow (vphpl) | 1800 | 1900 | 1700 | 1900 | 1800 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 3400 | 1900 | 1800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 3400 | 1900 | 1800 | 1900 |
| Volume (vph) | 25 | 920 | 2024 | 76 | 191 | 225 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 26 | 968 | 2131 | 80 | 201 | 237 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 22 | 0 | 65 |
| Lane Group Flow (vph) | 26 | 968 | 2131 | 58 | 201 | 172 |
| Turn Type | Prot | | | Perm | | Perm |
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | | | | 6 | | 4 |
| Actuated Green, G (s) | 3.6 | 94.0 | 86.4 | 86.4 | 28.0 | 28.0 |
| Effective Green, g (s) | 5.6 | 96.0 | 88.4 | 88.4 | 30.0 | 30.0 |
| Actuated g/C Ratio | 0.04 | 0.74 | 0.68 | 0.68 | 0.23 | 0.23 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 78 | 2806 | 2312 | 1292 | 415 | 438 |
| v/s Ratio Prot | 0.01 | c0.25 | c0.63 | | c0.11 | |
| v/s Ratio Perm | | | | 0.03 | | 0.09 |
| v/c Ratio | 0.33 | 0.34 | 0.92 | 0.05 | 0.48 | 0.39 |
| Uniform Delay, d1 | 60.4 | 6.0 | 17.8 | 6.9 | 43.3 | 42.3 |
| Progression Factor | 0.91 | 0.58 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 2.4 | 0.3 | 7.5 | 0.1 | 4.0 | 2.6 |
| Delay (s) | 57.2 | 3.8 | 25.4 | 6.9 | 47.3 | 44.9 |
| Level of Service | E | A | C | A | D | D |
| Approach Delay (s) | | 5.2 | 24.7 | | 46.0 | |
| Approach LOS | | A | C | | D | |

| Intersection Summary | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 22.0 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 83.1% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

























HCM Signalized Intersection Capacity Analysis
 7: 5th Street & SR-30 Southbound Ramps

Year 2030 Land Use Alt. 2, Acc. Alt. C
 A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | ↑ | ↑↑ | ↑↑↑ | | | | | | ↑ | ↑ |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1700 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | 2.0 | 2.0 |
| Lane Util. Factor | | *1.00 | *1.00 | *1.00 | *1.00 | | | | | | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Flt Protected | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Flt Permitted | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Volume (vph) | 0 | 313 | 798 | 805 | 1661 | 0 | 0 | 0 | 0 | 288 | 0 | 439 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 329 | 840 | 847 | 1748 | 0 | 0 | 0 | 0 | 303 | 0 | 462 |
| RTOR Reduction (vph) | 0 | 291 | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Lane Group Flow (vph) | 0 | 458 | 79 | 847 | 1748 | 0 | 0 | 0 | 0 | 0 | 303 | 456 |
| Turn Type | | | Perm | Prot | | | | | | Perm | | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | | 4 | |
| Permitted Phases | | | 2 | | | | | | | 4 | | 4 |
| Actuated Green, G (s) | | 13.0 | 13.0 | 23.0 | 40.0 | | | | | | 32.0 | 32.0 |
| Effective Green, g (s) | | 15.0 | 15.0 | 25.0 | 42.0 | | | | | | 34.0 | 34.0 |
| Actuated g/C Ratio | | 0.19 | 0.19 | 0.31 | 0.52 | | | | | | 0.42 | 0.42 |
| Clearance Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 1069 | 356 | 1063 | 2993 | | | | | | 765 | 808 |
| v/s Ratio Prot | | 0.08 | | c0.25 | c0.31 | | | | | | | |
| v/s Ratio Perm | | | 0.04 | | | | | | | | 0.17 | c0.24 |
| v/c Ratio | | 0.43 | 0.22 | 0.80 | 0.58 | | | | | | 0.40 | 0.56 |
| Uniform Delay, d1 | | 28.7 | 27.5 | 25.2 | 13.0 | | | | | | 15.9 | 17.4 |
| Progression Factor | | 1.00 | 1.00 | 0.78 | 0.62 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.3 | 1.4 | 3.1 | 0.6 | | | | | | 1.5 | 2.8 |
| Delay (s) | | 30.0 | 29.0 | 22.8 | 8.7 | | | | | | 17.4 | 20.2 |
| Level of Service | | C | C | C | A | | | | | | B | C |
| Approach Delay (s) | | 29.6 | | | 13.3 | | | 0.0 | | | 19.1 | |
| Approach LOS | | C | | | B | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 18.5 | | HCM Level of Service | | | | | B | | |
| HCM Volume to Capacity ratio | | | 0.63 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | Sum of lost time (s) | | | 6.0 | | | | |
| Intersection Capacity Utilization | | | 85.5% | | ICU Level of Service | | | E | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |































HCM Signalized Intersection Capacity Analysis
8: 5th Street & SR-30 Northbound Ramps

Year 2030 Land Use Alt. 2, Acc. Alt. C
A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    | | |    |  |  |  |  |  | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | *1.00 | | | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | | | |
| Flt | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Flt Protected | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (prot) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Flt Permitted | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (perm) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Volume (vph) | 113 | 488 | 0 | 0 | 1615 | 293 | 850 | 0 | 490 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 119 | 514 | 0 | 0 | 1700 | 308 | 895 | 0 | 516 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 177 | 0 | 0 | 205 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 119 | 514 | 0 | 0 | 1700 | 131 | 448 | 447 | 311 | 0 | 0 | 0 |
| Turn Type | Prot | | | | | Perm | Perm | | Perm | | | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | | |
| Permitted Phases | | | | | | 6 | 8 | | 8 | | | |
| Actuated Green, G (s) | 7.1 | 43.0 | | | 31.9 | 31.9 | 29.0 | 29.0 | 29.0 | | | |
| Effective Green, g (s) | 9.1 | 45.0 | | | 33.9 | 33.9 | 31.0 | 31.0 | 31.0 | | | |
| Actuated g/C Ratio | 0.11 | 0.56 | | | 0.42 | 0.42 | 0.39 | 0.39 | 0.39 | | | |
| Clearance Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 205 | 3206 | | | 2415 | 698 | 698 | 698 | 736 | | | |
| v/s Ratio Prot | c0.07 | 0.09 | | | c0.30 | | | | | | | |
| v/s Ratio Perm | | | | | | 0.08 | c0.25 | 0.25 | 0.16 | | | |
| v/c Ratio | 0.58 | 0.16 | | | 0.70 | 0.19 | 0.64 | 0.64 | 0.42 | | | |
| Uniform Delay, d1 | 33.6 | 8.4 | | | 18.9 | 14.4 | 20.0 | 20.0 | 17.9 | | | |
| Progression Factor | 0.95 | 0.33 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 3.7 | 0.1 | | | 1.7 | 0.6 | 4.5 | 4.5 | 1.8 | | | |
| Delay (s) | 35.8 | 2.9 | | | 20.7 | 15.0 | 24.5 | 24.4 | 19.7 | | | |
| Level of Service | D | A | | | C | B | C | C | B | | | |
| Approach Delay (s) | | 9.1 | | | 19.8 | | | 22.7 | | | 0.0 | |
| Approach LOS | | A | | | B | | | C | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 19.1 | | | | HCM Level of Service | | | | B | |
| HCM Volume to Capacity ratio | | | 0.65 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | | Sum of lost time (s) | | | | 6.0 | |
| Intersection Capacity Utilization | | | 85.5% | | | | ICU Level of Service | | | | E | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 9: 5th Street & Boulder Avenue































Year 2030 Land Use Alt. 2, Acc. Alt. C
 A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|---|--|---|---|--|---|---|--|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |   |   |  |  |   |   |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 8 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Fr't | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fl't Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Sat'd. Flow (prot) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 3800 |
| Fl't Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Sat'd. Flow (perm) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 3800 |
| Volume (vph) | 3 | 450 | 424 | 441 | 1246 | 76 | 330 | 22 | 49 | 207 | 690 | 11 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 3 | 474 | 446 | 464 | 1312 | 80 | 347 | 23 | 52 | 218 | 726 | 12 |
| RTOR Reduction (vph) | 0 | 0 | 162 | 0 | 0 | 28 | 0 | 0 | 37 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 3 | 474 | 284 | 464 | 1312 | 52 | 347 | 23 | 15 | 218 | 737 | 0 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Prot |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | |
| Actuated Green, G (s) | 1.1 | 20.8 | 20.8 | 26.5 | 46.2 | 46.2 | 8.1 | 28.1 | 28.1 | 11.1 | 31.1 | 31.1 |
| Effective Green, g (s) | 3.1 | 22.8 | 22.8 | 28.5 | 48.2 | 48.2 | 10.1 | 30.1 | 30.1 | 13.1 | 33.1 | 33.1 |
| Actuated g/C Ratio | 0.03 | 0.22 | 0.22 | 0.28 | 0.47 | 0.47 | 0.10 | 0.29 | 0.29 | 0.13 | 0.32 | 0.32 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 54 | 845 | 423 | 500 | 1787 | 774 | 335 | 1116 | 484 | 230 | 1227 | 1227 |
| v/s Ratio Prot | 0.00 | 0.12 | | c0.26 | c0.35 | | c0.10 | 0.01 | | c0.12 | c0.19 | |
| v/s Ratio Perm | | | 0.15 | | | 0.03 | | | 0.01 | | | |
| v/c Ratio | 0.06 | 0.56 | 0.67 | 0.93 | 0.73 | 0.07 | 1.04 | 0.02 | 0.03 | 0.95 | 0.60 | 0.60 |
| Uniform Delay, d1 | 48.3 | 35.4 | 36.4 | 36.0 | 22.0 | 14.9 | 46.2 | 25.7 | 25.8 | 44.4 | 29.1 | 29.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.4 | 0.9 | 4.2 | 23.5 | 1.6 | 0.0 | 58.7 | 0.0 | 0.1 | 44.4 | 2.2 | 2.2 |
| Delay (s) | 48.7 | 36.3 | 40.6 | 59.5 | 23.6 | 14.9 | 104.9 | 25.8 | 25.9 | 88.8 | 31.3 | 31.3 |
| Level of Service | D | D | D | E | C | B | F | C | C | F | C | C |
| Approach Delay (s) | | 38.4 | | | 32.2 | | | 90.9 | | | 44.4 | |
| Approach LOS | | D | | | C | | | F | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 42.3 | | | | HCM Level of Service | | | D | | |
| HCM Volume to Capacity ratio | | | 0.81 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 102.5 | | | | Sum of lost time (s) | | | 8.0 | | |
| Intersection Capacity Utilization | | | 81.5% | | | | ICU Level of Service | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: 5th Street & Palm Avenue

Year 2030 Land Use Alt. 2, Acc. Alt. C
P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|--|--|---|---|--|--|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |   |   |  |  |   |   |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 12 | 12 | 12 | 8 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | *1.00 | 1.00 | *1.00 | 1.00 |
| Fr _t | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fl _t Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 3800 | 1800 | 3800 | 1647 |
| Fl _t Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 3800 | 1800 | 3800 | 1647 |
| Volume (vph) | 76 | 785 | 275 | 335 | 535 | 125 | 196 | 974 | 1611 | 61 | 325 | 67 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 80 | 826 | 289 | 353 | 563 | 132 | 206 | 1025 | 1696 | 64 | 342 | 71 |
| RTOR Reduction (vph) | 0 | 0 | 193 | 0 | 0 | 76 | 0 | 0 | 70 | 0 | 0 | 53 |
| Lane Group Flow (vph) | 80 | 826 | 96 | 353 | 563 | 56 | 206 | 1025 | 1626 | 64 | 342 | 18 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | pm+ov | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | 1 | 7 | | 4 |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 7.2 | 29.4 | 29.4 | 26.8 | 49.0 | 49.0 | 18.8 | 42.2 | 69.0 | 5.6 | 29.0 | 29.0 |
| Effective Green, g (s) | 9.2 | 31.4 | 31.4 | 28.8 | 51.0 | 51.0 | 20.8 | 44.2 | 73.0 | 7.6 | 31.0 | 31.0 |
| Actuated g/C Ratio | 0.08 | 0.26 | 0.26 | 0.24 | 0.42 | 0.42 | 0.17 | 0.37 | 0.61 | 0.06 | 0.26 | 0.26 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 138 | 994 | 447 | 816 | 1615 | 727 | 312 | 1400 | 2312 | 114 | 982 | 425 |
| v/s Ratio Prot | 0.04 | c0.22 | | 0.10 | 0.15 | | 0.11 | c0.27 | c0.17 | c0.04 | 0.09 | |
| v/s Ratio Perm | | | 0.06 | | | 0.03 | | | 0.26 | | | 0.01 |
| v/c Ratio | 0.58 | 0.83 | 0.22 | 0.43 | 0.35 | 0.08 | 0.66 | 0.73 | 0.70 | 0.56 | 0.35 | 0.04 |
| Uniform Delay, d ₁ | 53.5 | 41.8 | 34.7 | 38.7 | 23.3 | 20.5 | 46.3 | 32.8 | 16.1 | 54.6 | 36.3 | 33.4 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.56 | 0.41 | 0.08 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d ₂ | 5.8 | 8.1 | 1.1 | 0.3 | 0.5 | 0.2 | 5.2 | 3.4 | 1.0 | 6.2 | 1.0 | 0.2 |
| Delay (s) | 59.3 | 49.8 | 35.8 | 21.9 | 10.1 | 1.9 | 51.5 | 36.2 | 17.1 | 60.8 | 37.2 | 33.6 |
| Level of Service | E | D | D | C | B | A | D | D | B | E | D | C |
| Approach Delay (s) | | 47.1 | | | 13.1 | | | 26.2 | | | 39.9 | |
| Approach LOS | | D | | | B | | | C | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 29.3 | HCM Level of Service | | | | C | | | | |
| HCM Volume to Capacity ratio | | | 0.73 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | Sum of lost time (s) | | | | 8.0 | | | | |
| Intersection Capacity Utilization | | | 91.6% | ICU Level of Service | | | | F | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: 5th Street & Church Avenue

Year 2030 Land Use Alt. 2, Acc. Alt. C
P.M. Peak Hour















| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations | ↖ | ↑↑ | ↗↗ | ↑ | ↙ | ↘ |
| Ideal Flow (vphpl) | 1800 | 1900 | 1700 | 1900 | 1800 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 3400 | 1900 | 1800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 3400 | 1900 | 1800 | 1900 |
| Volume (vph) | 165 | 2293 | 937 | 193 | 89 | 59 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 174 | 2414 | 986 | 203 | 94 | 62 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 95 | 0 | 47 |
| Lane Group Flow (vph) | 174 | 2414 | 986 | 108 | 94 | 16 |
| Turn Type | Prot | | | Perm | | Perm |
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | | | | 6 | | 4 |
| Actuated Green, G (s) | 18.0 | 84.0 | 62.0 | 62.0 | 28.0 | 28.0 |
| Effective Green, g (s) | 20.0 | 86.0 | 64.0 | 64.0 | 30.0 | 30.0 |
| Actuated g/C Ratio | 0.17 | 0.72 | 0.53 | 0.53 | 0.25 | 0.25 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 300 | 2723 | 1813 | 1013 | 450 | 475 |
| v/s Ratio Prot | 0.10 | c0.64 | 0.29 | | c0.05 | |
| v/s Ratio Perm | | | | 0.06 | | 0.01 |
| v/c Ratio | 0.58 | 0.89 | 0.54 | 0.11 | 0.21 | 0.03 |
| Uniform Delay, d1 | 46.1 | 13.2 | 18.4 | 13.9 | 35.6 | 34.0 |
| Progression Factor | 0.84 | 0.56 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.8 | 3.2 | 1.2 | 0.2 | 1.1 | 0.1 |
| Delay (s) | 40.8 | 10.7 | 19.6 | 14.1 | 36.7 | 34.2 |
| Level of Service | D | B | B | B | D | C |
| Approach Delay (s) | | 12.7 | 18.6 | | 35.7 | |
| Approach LOS | | B | B | | D | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 15.4 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 75.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

HCM Signalized Intersection Capacity Analysis
7: 5th Street & SR-30 Southbound Ramps

Year 2030 Land Use Alt. 2, Acc. Alt. C
P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | ↑ | ↑↑ | ↑↑↑ | | | | | | ↑ | ↑ |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1700 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | 2.0 | 2.0 |
| Lane Util. Factor | | *1.00 | *1.00 | *1.00 | *1.00 | | | | | | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Flt Protected | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Flt Permitted | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Volume (vph) | 0 | 1432 | 950 | 504 | 997 | 0 | 0 | 0 | 0 | 251 | 0 | 134 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 1507 | 1000 | 531 | 1049 | 0 | 0 | 0 | 0 | 264 | 0 | 141 |
| RTOR Reduction (vph) | 0 | 24 | 334 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| Lane Group Flow (vph) | 0 | 1681 | 468 | 531 | 1049 | 0 | 0 | 0 | 0 | 0 | 264 | 35 |
| Turn Type | | | Perm | Prot | | | | | | Perm | | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | | 4 | |
| Permitted Phases | | | 2 | | | | | | | 4 | | 4 |
| Actuated Green, G (s) | | 31.0 | 31.0 | 19.0 | 54.0 | | | | | | 18.0 | 18.0 |
| Effective Green, g (s) | | 33.0 | 33.0 | 21.0 | 56.0 | | | | | | 20.0 | 20.0 |
| Actuated g/C Ratio | | 0.41 | 0.41 | 0.26 | 0.70 | | | | | | 0.25 | 0.25 |
| Clearance Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 2351 | 784 | 893 | 3990 | | | | | | 450 | 475 |
| v/s Ratio Prot | | c0.29 | | c0.16 | 0.18 | | | | | | | |
| v/s Ratio Perm | | | 0.25 | | | | | | | | 0.15 | 0.02 |
| v/c Ratio | | 0.71 | 0.60 | 0.59 | 0.26 | | | | | | 0.59 | 0.07 |
| Uniform Delay, d1 | | 19.6 | 18.3 | 25.8 | 4.4 | | | | | | 26.4 | 22.9 |
| Progression Factor | | 1.00 | 1.00 | 1.01 | 0.53 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.9 | 3.3 | 0.9 | 0.1 | | | | | | 5.5 | 0.3 |
| Delay (s) | | 21.5 | 21.6 | 26.9 | 2.5 | | | | | | 31.9 | 23.2 |
| Level of Service | | C | C | C | A | | | | | | C | C |
| Approach Delay (s) | | 21.5 | | | 10.7 | | | 0.0 | | | 28.9 | |
| Approach LOS | | C | | | B | | | A | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 18.4 | | | HCM Level of Service | | | | B | | |
| HCM Volume to Capacity ratio | | | 0.63 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | Sum of lost time (s) | | | | 6.0 | | |
| Intersection Capacity Utilization | | | 81.7% | | | ICU Level of Service | | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 8: 5th Street & SR-30 Northbound Ramps






























Year 2030 Land Use Alt. 2, Acc. Alt. C
 P.M. Peak Hour

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|-------|----------------------|------|-------|------|-------|-------|------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | *1.00 | | | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | | | |
| Fr _t | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Fl _t Protected | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (prot) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Fl _t Permitted | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (perm) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Volume (vph) | 239 | 1444 | 0 | 0 | 882 | 196 | 619 | 0 | 762 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 252 | 1520 | 0 | 0 | 928 | 206 | 652 | 0 | 802 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 147 | 0 | 0 | 12 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 252 | 1520 | 0 | 0 | 928 | 59 | 326 | 326 | 790 | 0 | 0 | 0 |
| Turn Type | Prot | | | | | | Perm | Perm | Perm | | | |
| Protected Phases | 5 | 2 | | | | | 6 | | | 8 | | |
| Permitted Phases | | | | | | | 6 | 8 | 8 | | | |
| Actuated Green, G (s) | 15.0 | 40.0 | | | | | 21.0 | 21.0 | 32.0 | 32.0 | 32.0 | |
| Effective Green, g (s) | 17.0 | 42.0 | | | | | 23.0 | 23.0 | 34.0 | 34.0 | 34.0 | |
| Actuated g/C Ratio | 0.21 | 0.52 | | | | | 0.29 | 0.29 | 0.42 | 0.42 | 0.42 | |
| Clearance Time (s) | 4.0 | 4.0 | | | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 383 | 2993 | | | | | 1639 | 474 | 765 | 765 | 808 | |
| v/s Ratio Prot | c0.14 | 0.27 | | | | | c0.16 | | | | | |
| v/s Ratio Perm | | | | | | | 0.04 | 0.18 | 0.18 | c0.42 | | |
| v/c Ratio | 0.66 | 0.51 | | | | | 0.57 | 0.12 | 0.43 | 0.43 | 0.98 | |
| Uniform Delay, d ₁ | 28.8 | 12.3 | | | | | 24.3 | 21.1 | 16.1 | 16.1 | 22.6 | |
| Progression Factor | 0.44 | 0.26 | | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d ₂ | 2.9 | 0.4 | | | | | 1.4 | 0.5 | 1.7 | 1.7 | 26.7 | |
| Delay (s) | 15.6 | 3.6 | | | | | 25.7 | 21.6 | 17.9 | 17.9 | 49.3 | |
| Level of Service | B | A | | | | | C | C | B | B | D | |
| Approach Delay (s) | 5.3 | | | | | | 24.9 | | 35.2 | | 0.0 | |
| Approach LOS | A | | | | | | C | | D | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | 20.4 | | HCM Level of Service | | | | C | | | | | |
| HCM Volume to Capacity ratio | 0.76 | | | | | | | | | | | |
| Actuated Cycle Length (s) | 80.0 | | Sum of lost time (s) | | | | 6.0 | | | | | |
| Intersection Capacity Utilization | 81.7% | | ICU Level of Service | | | | D | | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 9: 5th Street & Boulder Avenue

Year 2030 Land Use Alt. 2, Acc. Alt. C
 P.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|--|---|---|--|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |   |   |  |  |   |  |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 8 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 |
| Fr't | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fl't Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Fl't Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | 1900 |
| Volume (vph) | 11 | 1000 | 472 | 4 | 155 | 107 | 636 | 1059 | 64 | 321 | 773 | 64 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 12 | 1053 | 497 | 4 | 163 | 113 | 669 | 1115 | 67 | 338 | 814 | 67 |
| RTOR Reduction (vph) | 0 | 0 | 330 | 0 | 0 | 80 | 0 | 0 | 12 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 12 | 1053 | 167 | 4 | 163 | 33 | 669 | 1115 | 55 | 338 | 875 | 0 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | Prot |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | |
| Actuated Green, G (s) | 4.8 | 29.4 | 29.4 | 1.1 | 25.7 | 25.7 | 16.1 | 30.1 | 30.1 | 17.1 | 31.1 | 31.1 |
| Effective Green, g (s) | 6.8 | 31.4 | 31.4 | 3.1 | 27.7 | 27.7 | 18.1 | 32.1 | 32.1 | 19.1 | 33.1 | 33.1 |
| Actuated g/C Ratio | 0.07 | 0.34 | 0.34 | 0.03 | 0.30 | 0.30 | 0.19 | 0.34 | 0.34 | 0.20 | 0.35 | 0.35 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 131 | 1273 | 637 | 60 | 1123 | 487 | 657 | 1302 | 564 | 367 | 1342 | 1342 |
| v/s Ratio Prot | c0.01 | c0.28 | | 0.00 | 0.04 | | c0.20 | c0.29 | | c0.19 | 0.23 | |
| v/s Ratio Perm | | | 0.09 | | | 0.02 | | | 0.03 | | | |
| v/c Ratio | 0.09 | 0.83 | 0.26 | 0.07 | 0.15 | 0.07 | 1.02 | 0.86 | 0.10 | 0.92 | 0.65 | 0.65 |
| Uniform Delay, d1 | 40.6 | 28.7 | 22.7 | 43.9 | 24.3 | 23.7 | 37.8 | 28.7 | 20.9 | 36.6 | 25.5 | 25.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.3 | 4.6 | 0.2 | 0.5 | 0.1 | 0.1 | 39.8 | 7.4 | 0.3 | 27.9 | 2.5 | 2.5 |
| Delay (s) | 40.9 | 33.2 | 22.9 | 44.4 | 24.3 | 23.8 | 77.6 | 36.1 | 21.3 | 64.5 | 27.9 | 27.9 |
| Level of Service | D | C | C | D | C | C | E | D | C | E | C | C |
| Approach Delay (s) | | 30.0 | | | 24.4 | | | 50.5 | | | 38.1 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 39.4 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 93.7 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 85.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: 5th Street & Palm Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. A
A.M. Peak Hour

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|-------|-------|----------------------|-------|------|-------|-------|-------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 12 | 12 | 12 | 8 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | *1.00 | 1.00 | *1.00 | 1.00 |
| Fr _t | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fl _t Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 3800 | 1800 | 3800 | 1647 |
| Fl _t Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 1710 | 3400 | 3800 | 1710 | 1800 | 3800 | 3800 | 1800 | 3800 | 1647 |
| Volume (vph) | 22 | 314 | 224 | 1143 | 995 | 74 | 86 | 134 | 467 | 102 | 893 | 120 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 23 | 331 | 236 | 1203 | 1047 | 78 | 91 | 141 | 492 | 107 | 940 | 126 |
| RTOR Reduction (vph) | 0 | 0 | 74 | 0 | 0 | 34 | 0 | 0 | 177 | 0 | 0 | 88 |
| Lane Group Flow (vph) | 23 | 331 | 162 | 1203 | 1047 | 44 | 91 | 141 | 315 | 107 | 940 | 38 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | pm+ov | Prot | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | 1 | 7 | | 4 |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 3.6 | 30.4 | 30.4 | 38.6 | 65.4 | 65.4 | 6.0 | 29.0 | 67.6 | 6.0 | 29.0 | 29.0 |
| Effective Green, g (s) | 5.6 | 32.4 | 32.4 | 40.6 | 67.4 | 67.4 | 8.0 | 31.0 | 71.6 | 8.0 | 31.0 | 31.0 |
| Actuated g/C Ratio | 0.05 | 0.27 | 0.27 | 0.34 | 0.56 | 0.56 | 0.07 | 0.26 | 0.60 | 0.07 | 0.26 | 0.26 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 84 | 1026 | 462 | 1150 | 2134 | 960 | 120 | 982 | 2267 | 120 | 982 | 425 |
| v/s Ratio Prot | 0.01 | 0.09 | | c0.35 | c0.28 | | c0.05 | 0.04 | 0.05 | 0.06 | c0.25 | |
| v/s Ratio Perm | | | c0.09 | | | 0.03 | | | 0.04 | | | 0.02 |
| v/c Ratio | 0.27 | 0.32 | 0.35 | 1.05 | 0.49 | 0.05 | 0.76 | 0.14 | 0.14 | 0.89 | 0.96 | 0.09 |
| Uniform Delay, d ₁ | 55.2 | 35.0 | 35.3 | 39.7 | 15.9 | 11.8 | 55.0 | 34.3 | 10.6 | 55.6 | 43.8 | 33.8 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.76 | 0.41 | 0.23 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d ₂ | 1.8 | 0.8 | 2.1 | 34.4 | 0.5 | 0.1 | 23.6 | 0.3 | 0.0 | 50.1 | 20.1 | 0.4 |
| Delay (s) | 57.0 | 35.9 | 37.4 | 64.8 | 7.1 | 2.7 | 78.6 | 34.6 | 10.7 | 105.7 | 63.9 | 34.2 |
| Level of Service | E | D | D | E | A | A | E | C | B | F | E | C |
| Approach Delay (s) | | 37.3 | | | 36.7 | | | 23.9 | | | 64.5 | |
| Approach LOS | | D | | | D | | | C | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 41.7 | HCM Level of Service | | | | D | | | | |
| HCM Volume to Capacity ratio | | | 0.82 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | Sum of lost time (s) | | | | 10.0 | | | | |
| Intersection Capacity Utilization | | | 88.2% | ICU Level of Service | | | | E | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: 5th Street & Church Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. A
A.M. Peak Hour















| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations | ↗ | ↑↑ | ↑↑ | ↗ | ↗ | ↗ |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flt Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Flt Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1800 | 3800 | 3800 | 1900 | 1800 | 1900 |
| Volume (vph) | 25 | 857 | 1987 | 76 | 191 | 225 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 26 | 902 | 2092 | 80 | 201 | 237 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 23 | 0 | 92 |
| Lane Group Flow (vph) | 26 | 902 | 2092 | 57 | 201 | 145 |
| Turn Type | Prot | | | Perm | | Perm |
| Protected Phases | 5 | 2 | 6 | | 4 | |
| Permitted Phases | | | | 6 | | 4 |
| Actuated Green, G (s) | 4.8 | 90.0 | 81.2 | 81.2 | 22.0 | 22.0 |
| Effective Green, g (s) | 6.8 | 92.0 | 83.2 | 83.2 | 24.0 | 24.0 |
| Actuated g/C Ratio | 0.06 | 0.77 | 0.69 | 0.69 | 0.20 | 0.20 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 102 | 2913 | 2635 | 1317 | 360 | 380 |
| v/s Ratio Prot | 0.01 | c0.24 | c0.55 | | c0.11 | |
| v/s Ratio Perm | | | | 0.03 | | 0.08 |
| v/c Ratio | 0.25 | 0.31 | 0.79 | 0.04 | 0.56 | 0.38 |
| Uniform Delay, d1 | 54.2 | 4.3 | 12.6 | 5.8 | 43.2 | 41.6 |
| Progression Factor | 0.89 | 0.50 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.3 | 0.3 | 2.6 | 0.1 | 6.1 | 2.9 |
| Delay (s) | 49.6 | 2.4 | 15.1 | 5.9 | 49.4 | 44.5 |
| Level of Service | D | A | B | A | D | D |
| Approach Delay (s) | | 3.7 | 14.8 | | 46.7 | |
| Approach LOS | | A | B | | D | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay | 15.8 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 75.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

HCM Signalized Intersection Capacity Analysis
 7: 5th Street & SR-30 Southbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. A
 A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | ↑ | ↑↑ | ↑↑↑ | | | | | | ↑ | ↑ |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1700 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | 2.0 | 2.0 |
| Lane Util. Factor | | *1.00 | *1.00 | *1.00 | *1.00 | | | | | | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Flt Protected | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Flt Permitted | | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | 5700 | 1900 | 3400 | 5700 | | | | | | 1800 | 1900 |
| Volume (vph) | 0 | 312 | 829 | 747 | 1701 | 0 | 0 | 0 | 0 | 269 | 0 | 449 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 328 | 873 | 786 | 1791 | 0 | 0 | 0 | 0 | 283 | 0 | 473 |
| RTOR Reduction (vph) | 0 | 298 | 350 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Lane Group Flow (vph) | 0 | 466 | 87 | 786 | 1791 | 0 | 0 | 0 | 0 | 0 | 283 | 468 |
| Turn Type | | | Perm | Prot | | | | | | Perm | | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | | 4 | |
| Permitted Phases | | | 2 | | | | | | | 4 | | 4 |
| Actuated Green, G (s) | | 14.0 | 14.0 | 21.0 | 39.0 | | | | | | 33.0 | 33.0 |
| Effective Green, g (s) | | 16.0 | 16.0 | 23.0 | 41.0 | | | | | | 35.0 | 35.0 |
| Actuated g/C Ratio | | 0.20 | 0.20 | 0.29 | 0.51 | | | | | | 0.44 | 0.44 |
| Clearance Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 1140 | 380 | 978 | 2921 | | | | | | 788 | 831 |
| v/s Ratio Prot | | 0.08 | | c0.23 | c0.31 | | | | | | | |
| v/s Ratio Perm | | | 0.05 | | | | | | | | 0.16 | c0.25 |
| v/c Ratio | | 0.41 | 0.23 | 0.80 | 0.61 | | | | | | 0.36 | 0.56 |
| Uniform Delay, d1 | | 27.9 | 26.8 | 26.4 | 13.9 | | | | | | 15.0 | 16.8 |
| Progression Factor | | 1.00 | 1.00 | 0.86 | 0.62 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.1 | 1.4 | 3.6 | 0.7 | | | | | | 1.3 | 2.8 |
| Delay (s) | | 29.0 | 28.2 | 26.2 | 9.2 | | | | | | 16.3 | 19.5 |
| Level of Service | | C | C | C | A | | | | | | B | B |
| Approach Delay (s) | | 28.7 | | | 14.4 | | | 0.0 | | | 18.3 | |
| Approach LOS | | C | | | B | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 18.9 | | | HCM Level of Service | | | | B | | |
| HCM Volume to Capacity ratio | | | 0.64 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | Sum of lost time (s) | | | 4.0 | | | |
| Intersection Capacity Utilization | | | 83.8% | | | ICU Level of Service | | | E | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |





























HCM Signalized Intersection Capacity Analysis
8: 5th Street & SR-30 Northbound Ramps

Year 2030 Land Use Alt. 1, Acc. Alt. A
A.M. Peak Hour

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|-------|------|------|----------------------|------|-------|-------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | *1.00 | | | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | | | |
| Fr't | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Fl't Protected | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (prot) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Fl't Permitted | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Satd. Flow (perm) | 1800 | 5700 | | | 5700 | 1647 | 1800 | 1800 | 1900 | | | |
| Volume (vph) | 121 | 460 | 0 | 0 | 1551 | 277 | 897 | 0 | 416 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 127 | 484 | 0 | 0 | 1633 | 292 | 944 | 0 | 438 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 174 | 0 | 0 | 209 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 127 | 484 | 0 | 0 | 1633 | 118 | 472 | 472 | 229 | 0 | 0 | 0 |
| Turn Type | Prot | | | | Perm | | Perm | Perm | | | | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | | |
| Permitted Phases | | | | | 6 | | 8 | 8 | | | | |
| Actuated Green, G (s) | 7.8 | 42.0 | | | 30.2 | 30.2 | 30.0 | 30.0 | 30.0 | | | |
| Effective Green, g (s) | 9.8 | 44.0 | | | 32.2 | 32.2 | 32.0 | 32.0 | 32.0 | | | |
| Actuated g/C Ratio | 0.12 | 0.55 | | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | | | |
| Clearance Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 221 | 3135 | | | 2294 | 663 | 720 | 720 | 760 | | | |
| v/s Ratio Prot | c0.07 | 0.08 | | | c0.29 | | | | | | | |
| v/s Ratio Perm | | | | | | 0.07 | c0.26 | 0.26 | 0.12 | | | |
| v/c Ratio | 0.57 | 0.15 | | | 0.71 | 0.18 | 0.66 | 0.66 | 0.30 | | | |
| Uniform Delay, d1 | 33.1 | 8.9 | | | 20.0 | 15.4 | 19.5 | 19.5 | 16.4 | | | |
| Progression Factor | 0.66 | 0.81 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 3.3 | 0.1 | | | 1.9 | 0.6 | 4.6 | 4.6 | 1.0 | | | |
| Delay (s) | 25.1 | 7.2 | | | 21.9 | 16.0 | 24.1 | 24.1 | 17.4 | | | |
| Level of Service | C | A | | | C | B | C | C | B | | | |
| Approach Delay (s) | 11.0 | | | | 21.0 | | | 22.0 | | | 0.0 | |
| Approach LOS | B | | | | C | | | C | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | 19.8 | | | | HCM Level of Service | | | | B | | | |
| HCM Volume to Capacity ratio | 0.66 | | | | | | | | | | | |
| Actuated Cycle Length (s) | 80.0 | | | | Sum of lost time (s) | | | | 6.0 | | | |
| Intersection Capacity Utilization | 83.8% | | | | ICU Level of Service | | | | E | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
9: 5th Street & Boulder Avenue

Year 2030 Land Use Alt. 1, Acc. Alt. A
A.M. Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|---|--|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |   |   |  |  |   | |
| Ideal Flow (vphpl) | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1700 | 1900 | 1900 | 1800 | 1900 | 1900 |
| Lane Width | 12 | 12 | 12 | 12 | 12 | 8 | 12 | 12 | 8 | 12 | 12 | 12 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | *1.00 | 1.00 | 1.00 | *1.00 | 1.00 | *1.00 | *1.00 | 1.00 | 1.00 | *1.00 | |
| Fr't | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Fl't Protected | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Sat'd. Flow (prot) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | |
| Fl't Permitted | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Sat'd. Flow (perm) | 1800 | 3800 | 1900 | 1800 | 3800 | 1647 | 3400 | 3800 | 1647 | 1800 | 3800 | |
| Volume (vph) | 3 | 450 | 322 | 441 | 1246 | 76 | 250 | 220 | 49 | 207 | 687 | 11 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 3 | 474 | 339 | 464 | 1312 | 80 | 263 | 232 | 52 | 218 | 723 | 12 |
| RTOR Reduction (vph) | 0 | 0 | 191 | 0 | 0 | 32 | 0 | 0 | 36 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 3 | 474 | 148 | 464 | 1312 | 48 | 263 | 232 | 16 | 218 | 734 | 0 |
| Turn Type | Prot | | Perm | Prot | | Perm | Prot | | Perm | Prot | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | |
| Actuated Green, G (s) | 1.2 | 18.5 | 18.5 | 25.6 | 42.9 | 42.9 | 10.0 | 29.1 | 29.1 | 12.0 | 31.1 | |
| Effective Green, g (s) | 3.2 | 20.5 | 20.5 | 27.6 | 44.9 | 44.9 | 12.0 | 31.1 | 31.1 | 14.0 | 33.1 | |
| Actuated g/C Ratio | 0.03 | 0.20 | 0.20 | 0.27 | 0.44 | 0.44 | 0.12 | 0.31 | 0.31 | 0.14 | 0.33 | |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 57 | 770 | 385 | 491 | 1686 | 731 | 403 | 1168 | 506 | 249 | 1243 | |
| v/s Ratio Prot | 0.00 | 0.12 | | c0.26 | c0.35 | | c0.08 | 0.06 | | c0.12 | c0.19 | |
| v/s Ratio Perm | | | 0.08 | | | 0.03 | | | 0.01 | | | |
| v/c Ratio | 0.05 | 0.62 | 0.38 | 0.95 | 0.78 | 0.07 | 0.65 | 0.20 | 0.03 | 0.88 | 0.59 | |
| Uniform Delay, d1 | 47.5 | 36.8 | 34.9 | 36.1 | 23.9 | 16.1 | 42.6 | 25.9 | 24.5 | 42.7 | 28.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.4 | 1.5 | 0.6 | 27.2 | 2.3 | 0.0 | 3.8 | 0.4 | 0.1 | 27.1 | 2.1 | |
| Delay (s) | 47.9 | 38.2 | 35.5 | 63.2 | 26.3 | 16.2 | 46.4 | 26.2 | 24.6 | 69.9 | 30.5 | |
| Level of Service | D | D | D | E | C | B | D | C | C | E | C | |
| Approach Delay (s) | | 37.1 | | | 35.1 | | | 35.8 | | | 39.5 | |
| Approach LOS | | D | | | D | | | D | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 36.6 | HCM Level of Service | | | | D | | | | |
| HCM Volume to Capacity ratio | | | 0.77 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 101.2 | Sum of lost time (s) | | | | 8.0 | | | | |
| Intersection Capacity Utilization | | | 78.9% | ICU Level of Service | | | | D | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

