



APPENDIX L

2020 & 2040 Build 1 Synchro Intersection Analysis

Queues

1: SW 12th Avenue & Hillsboro Blvd


























| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|------|-------|------|------|------|-------|------|------|------|------|
| Lane Group Flow (vph) | 277 | 2168 | 321 | 1457 | 495 | 98 | 147 | 196 | 22 | 22 | 22 |
| v/c Ratio | 0.89 | 0.68 | 0.90 | 0.51 | 0.44 | 0.28 | 0.77 | 0.38 | 0.31 | 0.30 | 0.06 |
| Control Delay | 102.0 | 23.3 | 104.9 | 20.5 | 4.3 | 75.1 | 102.7 | 8.1 | 94.0 | 93.2 | 0.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 102.0 | 23.3 | 104.9 | 20.9 | 4.5 | 75.1 | 102.7 | 8.1 | 94.0 | 93.2 | 0.3 |
| Queue Length 50th (ft) | 320 | 570 | 199 | 281 | 42 | 56 | 172 | 0 | 27 | 27 | 0 |
| Queue Length 95th (ft) | #473 | 723 | #294 | 485 | 127 | 85 | 247 | 67 | 63 | 63 | 0 |
| Internal Link Dist (ft) | | 580 | | 548 | | | 436 | | | 396 | |
| Turn Bay Length (ft) | 450 | | 375 | | 350 | 225 | | 250 | 200 | | |
| Base Capacity (vph) | 331 | 3187 | 356 | 2859 | 1254 | 610 | 331 | 514 | 252 | 259 | 387 |
| Starvation Cap Reductn | 0 | 0 | 0 | 715 | 219 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.84 | 0.68 | 0.90 | 0.68 | 0.48 | 0.16 | 0.44 | 0.38 | 0.09 | 0.08 | 0.06 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

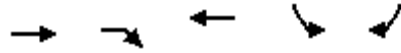
HCM Signalized Intersection Capacity Analysis

1: SW 12th Avenue & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 255 | 1830 | 165 | 295 | 1340 | 455 | 90 | 135 | 180 | 30 | 10 | 20 |
| Future Volume (vph) | 255 | 1830 | 165 | 295 | 1340 | 455 | 90 | 135 | 180 | 30 | 10 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.0 | 6.0 | 6.0 | 6.5 | 6.0 | 6.0 | 6.5 |
| Lane Util. Factor | 1.00 | 0.91 | | 0.97 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |
| Frt | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.98 | 1.00 |
| Satd. Flow (prot) | 1770 | 5022 | | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1681 | 1726 | 1583 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.98 | 1.00 |
| Satd. Flow (perm) | 1770 | 5022 | | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1681 | 1726 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 277 | 1989 | 179 | 321 | 1457 | 495 | 98 | 147 | 196 | 33 | 11 | 22 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 0 | 107 | 0 | 0 | 158 | 0 | 0 | 17 |
| Lane Group Flow (vph) | 277 | 2164 | 0 | 321 | 1457 | 388 | 98 | 147 | 38 | 22 | 22 | 5 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | pm+ov | Split | NA | pm+ov | Split | NA | pm+ov |
| Protected Phases | 1 | 6 | | 5 | 2 | 3 | 4 | 4 | 5 | 3 | 3 | 1 |
| Permitted Phases | | | | | | 2 | | | 4 | | | 3 |
| Actuated Green, G (s) | 29.5 | 112.0 | | 16.7 | 99.2 | 106.9 | 18.6 | 18.6 | 35.3 | 7.7 | 7.7 | 37.2 |
| Effective Green, g (s) | 31.5 | 114.0 | | 18.7 | 101.2 | 110.9 | 18.6 | 18.6 | 35.3 | 7.7 | 7.7 | 37.2 |
| Actuated g/C Ratio | 0.18 | 0.63 | | 0.10 | 0.56 | 0.62 | 0.10 | 0.10 | 0.20 | 0.04 | 0.04 | 0.21 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | 6.0 | 6.0 | 6.0 | 6.5 | 6.0 | 6.0 | 6.5 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 2.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.5 |
| Lane Grp Cap (vph) | 309 | 3180 | | 356 | 2858 | 975 | 354 | 192 | 310 | 71 | 73 | 327 |
| v/s Ratio Prot | c0.16 | c0.43 | | 0.09 | 0.29 | c0.02 | 0.03 | c0.08 | 0.01 | 0.01 | 0.01 | 0.00 |
| v/s Ratio Perm | | | | | | 0.22 | | | 0.01 | | | 0.00 |
| v/c Ratio | 0.90 | 0.68 | | 0.90 | 0.51 | 0.40 | 0.28 | 0.77 | 0.12 | 0.31 | 0.30 | 0.01 |
| Uniform Delay, d1 | 72.7 | 21.3 | | 79.7 | 24.2 | 17.6 | 74.5 | 78.6 | 59.6 | 83.6 | 83.5 | 56.8 |
| Progression Factor | 1.00 | 1.00 | | 1.01 | 0.79 | 0.45 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 26.0 | 1.2 | | 22.1 | 0.6 | 0.1 | 0.2 | 15.0 | 0.1 | 0.9 | 0.8 | 0.0 |
| Delay (s) | 98.6 | 22.5 | | 102.6 | 19.6 | 8.0 | 74.6 | 93.6 | 59.7 | 84.5 | 84.4 | 56.8 |
| Level of Service | F | C | | F | B | A | E | F | E | F | F | E |
| Approach Delay (s) | | 31.1 | | | 28.8 | | | 74.3 | | | 75.2 | |
| Approach LOS | | C | | | C | | | E | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 34.3 | HCM 2000 Level of Service | | | | C | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.74 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | Sum of lost time (s) | | | | 23.0 | | | | |
| Intersection Capacity Utilization | | | 73.3% | ICU Level of Service | | | | D | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: Hillsboro Blvd & I-95 SB RAMP



| Lane Group | EBT | EBR | WBT | SBL2 | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 1413 | 779 | 1505 | 542 | 742 |
| v/c Ratio | 0.28 | 0.49 | 0.51 | 0.83 | 0.72 |
| Control Delay | 0.1 | 2.7 | 16.8 | 62.1 | 52.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.1 | 2.7 | 16.8 | 62.1 | 52.1 |
| Queue Length 50th (ft) | 0 | 38 | 411 | 581 | 427 |
| Queue Length 95th (ft) | 0 | 62 | 483 | 653 | 448 |
| Internal Link Dist (ft) | 548 | | 319 | | |
| Turn Bay Length (ft) | | 150 | | | |
| Base Capacity (vph) | 5085 | 1583 | 2947 | 889 | 1401 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.28 | 0.49 | 0.51 | 0.61 | 0.53 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: Hillsboro Bvd & I-95 SB RAMP



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | SBL2 | SBL | SBR | NWL | NWR |
|------------------------|------|-------|-------|------|-------|------|-------|------|------|------|------|
| Lane Configurations | | ↑↑↑ | ↑ | | ↑↑↑ | | ↑ | | ↑↑ | | |
| Traffic Volume (vph) | 0 | 1300 | 740 | 0 | 1385 | 0 | 515 | 0 | 705 | 0 | 0 |
| Future Volume (vph) | 0 | 1300 | 740 | 0 | 1385 | 0 | 515 | 0 | 705 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | | 4.5 | | 4.5 | | 4.5 | | |
| Lane Util. Factor | | 0.91 | 1.00 | | 0.91 | | 1.00 | | 0.88 | | |
| Frt | | 1.00 | 0.85 | | 1.00 | | 1.00 | | 0.85 | | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (prot) | | 5085 | 1583 | | 5085 | | 1770 | | 2787 | | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (perm) | | 5085 | 1583 | | 5085 | | 1770 | | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1413 | 779 | 0 | 1505 | 0 | 542 | 0 | 742 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1413 | 779 | 0 | 1505 | 0 | 542 | 0 | 742 | 0 | 0 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | | NA | Perm | | NA | | Prot | | Prot | | |
| Protected Phases | | Free! | | | 2 | | 8! | | 3 | | |
| Permitted Phases | | | Free | | | | | | | | |
| Actuated Green, G (s) | | 180.0 | 180.0 | | 102.3 | | 64.7 | | 64.7 | | |
| Effective Green, g (s) | | 180.0 | 180.0 | | 104.3 | | 66.7 | | 66.7 | | |
| Actuated g/C Ratio | | 1.00 | 1.00 | | 0.58 | | 0.37 | | 0.37 | | |
| Clearance Time (s) | | | | | 6.5 | | 6.5 | | 6.5 | | |
| Vehicle Extension (s) | | | | | 3.0 | | 2.5 | | 2.5 | | |
| Lane Grp Cap (vph) | | 5085 | 1583 | | 2946 | | 655 | | 1032 | | |
| v/s Ratio Prot | | 0.28 | | | 0.30 | | c0.31 | | 0.27 | | |
| v/s Ratio Perm | | | c0.49 | | | | | | | | |
| v/c Ratio | | 0.28 | 0.49 | | 0.51 | | 0.83 | | 0.72 | | |
| Uniform Delay, d1 | | 0.0 | 0.0 | | 22.6 | | 51.4 | | 48.6 | | |
| Progression Factor | | 1.00 | 1.00 | | 0.68 | | 1.00 | | 1.00 | | |
| Incremental Delay, d2 | | 0.1 | 0.8 | | 0.6 | | 8.3 | | 2.3 | | |
| Delay (s) | | 0.1 | 0.8 | | 15.9 | | 59.7 | | 50.9 | | |
| Level of Service | | A | A | | B | | E | | D | | |
| Approach Delay (s) | | 0.4 | | | 15.9 | | | 54.6 | | 0.0 | |
| Approach LOS | | A | | | B | | | D | | A | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay | 19.0 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 58.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.

c Critical Lane Group

Queues

3: I-95 NB Ramp & Hillsboro Blvd















| Lane Group | EBT | WBT | WBR | NBL | NBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 1364 | 1549 | 772 | 641 | 758 |
| v/c Ratio | 0.47 | 0.54 | 0.49 | 0.36 | 0.73 |
| Control Delay | 9.8 | 12.2 | 2.1 | 21.1 | 27.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 9.8 | 12.2 | 2.1 | 21.1 | 27.3 |
| Queue Length 50th (ft) | 104 | 323 | 16 | 92 | 194 |
| Queue Length 95th (ft) | 232 | m245 | m3 | 110 | 242 |
| Internal Link Dist (ft) | 286 | 371 | | | |
| Turn Bay Length (ft) | | | 250 | 350 | 350 |
| Base Capacity (vph) | 2886 | 2886 | 1568 | 2106 | 1205 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.54 | 0.49 | 0.30 | 0.63 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.













HCM Signalized Intersection Capacity Analysis

3: I-95 NB Ramp & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | | | ↑↑↑ | ↑ | ↑↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1255 | 0 | 0 | 1425 | 710 | 590 | 0 | 720 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 1255 | 0 | 0 | 1425 | 710 | 590 | 0 | 720 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | 2.0 | 2.0 | | 2.0 | | | |
| Lane Util. Factor | | 0.91 | | | 0.91 | 1.00 | 0.94 | | 0.88 | | | |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 5085 | | | 5085 | 1568 | 4990 | | 2787 | | | |
| Flt Permitted | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 5085 | | | 5085 | 1568 | 4990 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1364 | 0 | 0 | 1549 | 772 | 641 | 0 | 758 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1364 | 0 | 0 | 1549 | 772 | 641 | 0 | 726 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 3% | 2% | 3% | 2% | 3% | 3% | 3% |
| Turn Type | | NA | | | NA | Free | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 4 | | 4 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | | 49.1 | | | 49.1 | 90.0 | 30.4 | | 30.4 | | | |
| Effective Green, g (s) | | 51.1 | | | 51.1 | 90.0 | 32.4 | | 32.4 | | | |
| Actuated g/C Ratio | | 0.57 | | | 0.57 | 1.00 | 0.36 | | 0.36 | | | |
| Clearance Time (s) | | 6.5 | | | 6.5 | | 4.0 | | 4.0 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | | 3.0 | | | |
| Lane Grp Cap (vph) | | 2887 | | | 2887 | 1568 | 1796 | | 1003 | | | |
| v/s Ratio Prot | | 0.27 | | | c0.30 | | 0.13 | | c0.26 | | | |
| v/s Ratio Perm | | | | | | 0.49 | | | | | | |
| v/c Ratio | | 0.47 | | | 0.54 | 0.49 | 0.36 | | 0.72 | | | |
| Uniform Delay, d1 | | 11.5 | | | 12.1 | 0.0 | 21.1 | | 24.9 | | | |
| Progression Factor | | 0.77 | | | 0.92 | 1.00 | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 0.5 | | | 0.5 | 0.7 | 0.1 | | 2.6 | | | |
| Delay (s) | | 9.3 | | | 11.6 | 0.7 | 21.3 | | 27.5 | | | |
| Level of Service | | A | | | B | A | C | | C | | | |
| Approach Delay (s) | | 9.3 | | | 8.0 | | | 24.7 | | | 0.0 | |
| Approach LOS | | A | | | A | | | C | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 12.9 | | | HCM 2000 Level of Service | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.60 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | Sum of lost time (s) | | | | 6.5 | | |
| Intersection Capacity Utilization | | | 56.5% | | | ICU Level of Service | | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd
































| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 315 | 1717 | 114 | 76 | 1815 | 87 | 435 | 87 | 147 | 33 | 5 | 71 |
| v/c Ratio | 0.83 | 0.54 | 0.11 | 0.60 | 0.61 | 0.09 | 1.33 | 0.26 | 0.37 | 0.40 | 0.08 | 0.39 |
| Control Delay | 86.1 | 16.5 | 2.1 | 100.5 | 25.5 | 0.6 | 218.5 | 67.4 | 11.2 | 75.0 | 87.0 | 6.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 86.1 | 16.5 | 2.1 | 100.5 | 25.5 | 0.6 | 218.5 | 67.4 | 11.2 | 75.0 | 87.0 | 6.3 |
| Queue Length 50th (ft) | 200 | 281 | 4 | 88 | 499 | 0 | ~601 | 91 | 0 | 31 | 6 | 0 |
| Queue Length 95th (ft) | #263 | 358 | 29 | 150 | 545 | 5 | #828 | 151 | 68 | 66 | 22 | 0 |
| Internal Link Dist (ft) | | 660 | | | 631 | | | 513 | | | 403 | |
| Turn Bay Length (ft) | 300 | | 150 | 100 | | 200 | 125 | | | | | 340 |
| Base Capacity (vph) | 390 | 3167 | 1035 | 149 | 2965 | 977 | 326 | 641 | 641 | 82 | 393 | 439 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.81 | 0.54 | 0.11 | 0.51 | 0.61 | 0.09 | 1.33 | 0.14 | 0.23 | 0.40 | 0.01 | 0.16 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |   |    |  |  |    |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 290 | 1580 | 105 | 70 | 1670 | 80 | 400 | 80 | 135 | 30 | 5 | 65 | |
| Future Volume (vph) | 290 | 1580 | 105 | 70 | 1670 | 80 | 400 | 80 | 135 | 30 | 5 | 65 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5085 | 1583 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.41 | 1.00 | 1.00 | 0.70 | 1.00 | 1.00 | |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 1770 | 5085 | 1583 | 767 | 1863 | 1583 | 1305 | 1863 | 1583 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 315 | 1717 | 114 | 76 | 1815 | 87 | 435 | 87 | 147 | 33 | 5 | 71 | |
| RTOR Reduction (vph) | 0 | 0 | 44 | 0 | 0 | 37 | 0 | 0 | 121 | 0 | 0 | 68 | |
| Lane Group Flow (vph) | 315 | 1717 | 70 | 76 | 1815 | 50 | 435 | 87 | 26 | 33 | 5 | 3 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 | |
| Actuated Green, G (s) | 18.0 | 109.0 | 109.0 | 10.8 | 101.8 | 101.8 | 41.2 | 32.0 | 32.0 | 10.4 | 7.2 | 7.2 | |
| Effective Green, g (s) | 20.0 | 111.0 | 111.0 | 12.8 | 103.8 | 103.8 | 41.2 | 32.0 | 32.0 | 10.4 | 7.2 | 7.2 | |
| Actuated g/C Ratio | 0.11 | 0.62 | 0.62 | 0.07 | 0.58 | 0.58 | 0.23 | 0.18 | 0.18 | 0.06 | 0.04 | 0.04 | |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | |
| Vehicle Extension (s) | 2.0 | 3.0 | 3.0 | 1.5 | 3.0 | 3.0 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 381 | 3135 | 976 | 125 | 2932 | 912 | 331 | 331 | 281 | 83 | 74 | 63 | |
| v/s Ratio Prot | c0.09 | 0.34 | | 0.04 | c0.36 | | c0.20 | 0.05 | | 0.01 | 0.00 | | |
| v/s Ratio Perm | | | 0.04 | | | 0.03 | c0.10 | | 0.02 | 0.02 | | 0.00 | |
| v/c Ratio | 0.83 | 0.55 | 0.07 | 0.61 | 0.62 | 0.06 | 1.31 | 0.26 | 0.09 | 0.40 | 0.07 | 0.05 | |
| Uniform Delay, d1 | 78.3 | 20.0 | 13.8 | 81.2 | 25.1 | 16.7 | 66.8 | 63.8 | 61.9 | 81.4 | 83.2 | 83.1 | |
| Progression Factor | 0.89 | 0.81 | 1.46 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 11.5 | 0.6 | 0.1 | 5.6 | 1.0 | 0.1 | 161.3 | 0.2 | 0.1 | 1.1 | 0.1 | 0.1 | |
| Delay (s) | 81.5 | 16.8 | 20.4 | 86.8 | 26.1 | 16.8 | 228.1 | 64.0 | 61.9 | 82.6 | 83.3 | 83.2 | |
| Level of Service | F | B | C | F | C | B | F | E | E | F | F | F | |
| Approach Delay (s) | | 26.4 | | | 28.0 | | | 170.2 | | | 83.0 | | |
| Approach LOS | | C | | | C | | | F | | | F | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 48.0 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.83 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | | | | | | | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | | | 81.9% | | | | | | | | | ICU Level of Service | D |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | | |

Phasings

1: S Military Trail & SR 869/SW 10th Street

06/04/2021



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖↗ | ↑↑ | ↖ | ↖↗ | ↑↑ | ↖ | ↖↗ | ↑↑ | ↖ | ↖↗ | ↑↑ | ↖ |
| Traffic Volume (vph) | 315 | 2220 | 100 | 305 | 1395 | 300 | 185 | 800 | 580 | 440 | 550 | 285 |
| Future Volume (vph) | 315 | 2220 | 100 | 305 | 1395 | 300 | 185 | 800 | 580 | 440 | 550 | 285 |
| Lane Group Flow (vph) | 342 | 2413 | 109 | 332 | 1516 | 326 | 201 | 870 | 630 | 478 | 598 | 310 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | Perm |
| Protected Phases | 1 | 6 | 7 | 5 | 2 | 3 | 7 | 4 | 5 | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | | | 4 | | | 8 |
| Detector Phase | 1 | 6 | 7 | 5 | 2 | 3 | 7 | 4 | 5 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 15.0 | 5.0 | 5.0 | 15.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 | 6.0 | 6.0 |
| Minimum Split (s) | 12.5 | 21.0 | 12.9 | 12.5 | 21.0 | 12.9 | 12.9 | 13.9 | 12.5 | 12.9 | 13.9 | 13.9 |
| Total Split (s) | 25.7 | 95.0 | 19.4 | 23.0 | 92.3 | 24.0 | 19.4 | 38.0 | 23.0 | 24.0 | 42.6 | 42.6 |
| Total Split (%) | 14.3% | 52.8% | 10.8% | 12.8% | 51.3% | 13.3% | 10.8% | 21.1% | 12.8% | 13.3% | 23.7% | 23.7% |
| Yellow Time (s) | 4.0 | 4.0 | 4.4 | 4.0 | 4.0 | 4.4 | 4.4 | 4.4 | 4.0 | 4.4 | 4.4 | 4.4 |
| All-Red Time (s) | 3.5 | 2.0 | 3.5 | 3.5 | 2.0 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Lost Time Adjust (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 |
| Total Lost Time (s) | 5.5 | 4.0 | 5.9 | 5.5 | 4.0 | 5.9 | 5.9 | 5.9 | 5.5 | 5.9 | 5.9 | 5.9 |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Min | None | None | C-Min | None | None | None | None | None | None | None |
| v/c Ratio | 0.81 | 1.35 | 0.11 | 1.00 | 0.89 | 0.33 | 0.79 | 1.38 | 1.21 | 1.39 | 0.83 | 0.64 |
| Control Delay | 91.8 | 196.7 | 1.7 | 138.7 | 44.7 | 17.2 | 102.9 | 231.1 | 144.9 | 244.7 | 79.3 | 29.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 91.8 | 196.7 | 1.7 | 138.7 | 44.7 | 17.2 | 102.9 | 231.1 | 144.9 | 244.7 | 79.3 | 29.8 |
| Queue Length 50th (ft) | 209 | ~1954 | 0 | 213 | 475 | 133 | 122 | ~713 | ~614 | ~385 | 361 | 123 |
| Queue Length 95th (ft) | #298 | #2062 | 21 | #324 | 567 | 211 | #184 | #852 | #871 | #507 | 437 | 241 |
| Internal Link Dist (ft) | | 620 | | | 1082 | | | 569 | | | 457 | |
| Turn Bay Length (ft) | 550 | | 500 | 550 | | 500 | 300 | | 300 | 650 | | 650 |
| Base Capacity (vph) | 424 | 1789 | 1003 | 333 | 1736 | 1002 | 257 | 631 | 520 | 345 | 723 | 481 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.81 | 1.35 | 0.11 | 1.00 | 0.87 | 0.33 | 0.78 | 1.38 | 1.21 | 1.39 | 0.83 | 0.64 |

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 162 (90%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

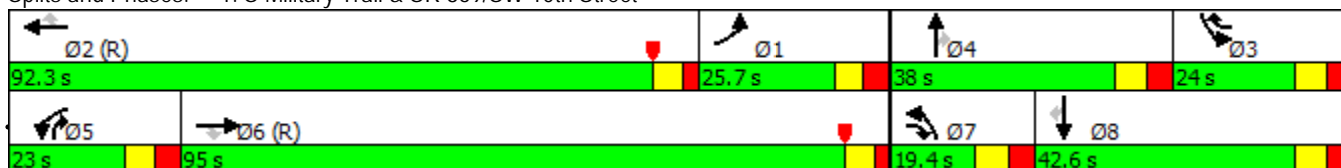
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: S Military Trail & SR 869/SW 10th Street



HCM Signalized Intersection Capacity Analysis

1: S Military Trail & SR 869/SW 10th Street

06/04/2021



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|-------|-------|------|-------|------|-------|-------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 315 | 2220 | 100 | 305 | 1395 | 300 | 185 | 800 | 580 | 440 | 550 | 285 |
| Future Volume (vph) | 315 | 2220 | 100 | 305 | 1395 | 300 | 185 | 800 | 580 | 440 | 550 | 285 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.5 | 4.0 | 5.9 | 5.5 | 4.0 | 5.9 | 5.9 | 5.9 | 5.5 | 5.9 | 5.9 | 5.9 |
| Lane Util. Factor | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 342 | 2413 | 109 | 332 | 1516 | 326 | 201 | 870 | 630 | 478 | 598 | 310 |
| RTOR Reduction (vph) | 0 | 0 | 46 | 0 | 0 | 52 | 0 | 0 | 81 | 0 | 0 | 158 |
| Lane Group Flow (vph) | 342 | 2413 | 63 | 332 | 1516 | 274 | 201 | 870 | 549 | 478 | 598 | 152 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | Perm |
| Protected Phases | 1 | 6 | 7 | 5 | 2 | 3 | 7 | 4 | 5 | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | | | 4 | | | 8 |
| Actuated Green, G (s) | 20.2 | 89.0 | 100.4 | 15.5 | 84.3 | 100.4 | 11.4 | 30.1 | 45.6 | 16.1 | 34.8 | 34.8 |
| Effective Green, g (s) | 22.2 | 91.0 | 104.4 | 17.5 | 86.3 | 104.4 | 13.4 | 32.1 | 49.6 | 18.1 | 36.8 | 36.8 |
| Actuated g/C Ratio | 0.12 | 0.51 | 0.58 | 0.10 | 0.48 | 0.58 | 0.07 | 0.18 | 0.28 | 0.10 | 0.20 | 0.20 |
| Clearance Time (s) | 7.5 | 6.0 | 7.9 | 7.5 | 6.0 | 7.9 | 7.9 | 7.9 | 7.5 | 7.9 | 7.9 | 7.9 |
| Vehicle Extension (s) | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 423 | 1789 | 918 | 333 | 1696 | 970 | 255 | 631 | 436 | 345 | 723 | 323 |
| v/s Ratio Prot | 0.10 | c0.68 | 0.01 | 0.10 | 0.43 | 0.03 | 0.06 | c0.25 | c0.12 | c0.14 | 0.17 | |
| v/s Ratio Perm | | | 0.03 | | | 0.14 | | | 0.22 | | | 0.10 |
| v/c Ratio | 0.81 | 1.35 | 0.07 | 1.00 | 0.89 | 0.28 | 0.79 | 1.38 | 1.26 | 1.39 | 0.83 | 0.47 |
| Uniform Delay, d1 | 76.8 | 44.5 | 16.5 | 81.2 | 42.7 | 19.0 | 81.9 | 74.0 | 65.2 | 81.0 | 68.6 | 63.0 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.23 | 0.90 | 1.61 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 10.3 | 160.8 | 0.0 | 42.5 | 6.2 | 0.0 | 13.8 | 180.3 | 133.9 | 190.5 | 7.7 | 1.1 |
| Delay (s) | 87.1 | 205.3 | 16.5 | 142.5 | 44.5 | 30.6 | 95.7 | 254.2 | 199.1 | 271.5 | 76.3 | 64.1 |
| Level of Service | F | F | B | F | D | C | F | F | F | F | E | E |
| Approach Delay (s) | | 184.0 | | | 57.4 | | | 215.1 | | | 140.9 | |
| Approach LOS | | F | | | E | | | F | | | F | |

Intersection Summary

| | | | |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay | 149.3 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.35 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 21.3 |
| Intersection Capacity Utilization | 122.7% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Phasings

2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

06/04/2021

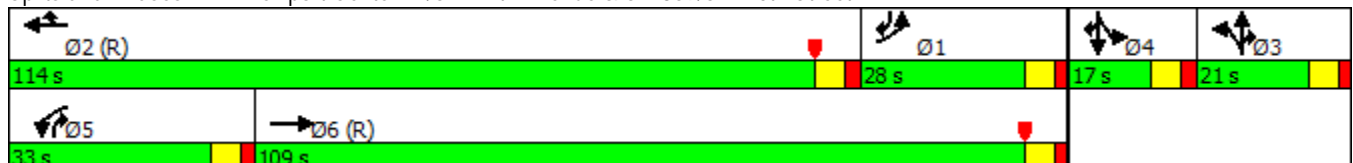


| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 280 | 2465 | 360 | 1870 | 330 | 50 | 10 | 95 | 10 | 80 |
| Future Volume (vph) | 280 | 2465 | 360 | 1870 | 330 | 50 | 10 | 95 | 10 | 80 |
| Lane Group Flow (vph) | 304 | 3217 | 391 | 2033 | 359 | 32 | 33 | 103 | 49 | 87 |
| Turn Type | Prot | NA | Prot | NA | Prot | Split | NA | pt+ov | NA | pt+ov |
| Protected Phases | 1 | 6 | 5 | 2 | 2 | 3 | 3 | 3 5 | 4 | 4 1 |
| Permitted Phases | | | | | | | | | | |
| Detector Phase | 1 | 6 | 5 | 2 | 2 | 3 | 3 | 3 5 | 4 | 4 1 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 7.0 | 4.0 | 15.0 | 15.0 | 15.0 | 15.0 | | 7.0 | |
| Minimum Split (s) | 10.0 | 13.0 | 10.0 | 21.0 | 21.0 | 21.0 | 21.0 | | 13.0 | |
| Total Split (s) | 28.0 | 109.0 | 33.0 | 114.0 | 114.0 | 21.0 | 21.0 | | 17.0 | |
| Total Split (%) | 15.6% | 60.6% | 18.3% | 63.3% | 63.3% | 11.7% | 11.7% | | 9.4% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | 0.0 | 0.0 | | 0.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 6.0 | 6.0 | | 6.0 | |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | C-Min | None | C-Min | C-Min | Min | Min | | Min | |
| v/c Ratio | 0.51 | 0.85 | 0.78 | 0.70 | 0.35 | 0.23 | 0.23 | 0.22 | 0.57 | 0.15 |
| Control Delay | 53.2 | 14.9 | 87.7 | 26.6 | 4.0 | 81.6 | 81.6 | 12.6 | 107.3 | 9.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.2 | 14.9 | 87.7 | 26.7 | 4.0 | 81.6 | 81.6 | 12.6 | 107.3 | 9.2 |
| Queue Length 50th (ft) | 163 | 497 | 230 | 534 | 56 | 37 | 38 | 11 | 57 | 0 |
| Queue Length 95th (ft) | m125 | m271 | m267 | m513 | m28 | 81 | 82 | 63 | 108 | 26 |
| Internal Link Dist (ft) | | 818 | | 925 | | | 695 | | 185 | |
| Turn Bay Length (ft) | 700 | | 750 | | 750 | | | 150 | | |
| Base Capacity (vph) | 591 | 3799 | 553 | 3107 | 1070 | 140 | 142 | 488 | 97 | 593 |
| Starvation Cap Reductn | 0 | 0 | 0 | 211 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.85 | 0.71 | 0.70 | 0.34 | 0.23 | 0.23 | 0.21 | 0.51 | 0.15 |

Intersection Summary

Cycle Length: 180
 Actuated Cycle Length: 180
 Offset: 12 (7%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street



HCM Signalized Intersection Capacity Analysis

2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

06/04/2021



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 280 | 2465 | 495 | 360 | 1870 | 330 | 50 | 10 | 95 | 35 | 10 | 80 |
| Future Volume (vph) | 280 | 2465 | 495 | 360 | 1870 | 330 | 50 | 10 | 95 | 35 | 10 | 80 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.86 | | 0.97 | 0.91 | 1.00 | 0.95 | 0.95 | 1.00 | | 1.00 | 0.88 |
| Frt | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 | | 0.96 | 1.00 |
| Satd. Flow (prot) | 3367 | 6247 | | 3433 | 5085 | 1524 | 1681 | 1713 | 1583 | | 1599 | 2030 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 | | 0.96 | 1.00 |
| Satd. Flow (perm) | 3367 | 6247 | | 3433 | 5085 | 1524 | 1681 | 1713 | 1583 | | 1599 | 2030 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 304 | 2679 | 538 | 391 | 2033 | 359 | 54 | 11 | 103 | 38 | 11 | 87 |
| RTOR Reduction (vph) | 0 | 19 | 0 | 0 | 0 | 152 | 0 | 0 | 68 | 0 | 0 | 65 |
| Lane Group Flow (vph) | 304 | 3198 | 0 | 391 | 2033 | 207 | 32 | 33 | 35 | 0 | 49 | 22 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 6% | 2% | 2% | 2% | 18% | 2% | 40% |
| Turn Type | Prot | NA | | Prot | NA | Prot | Split | NA | pt+ov | Split | NA | pt+ov |
| Protected Phases | 1 | 6 | | 5 | 2 | 2 | 3 | 3 | 3 5 | 4 | 4 | 4 1 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | 29.6 | 106.9 | | 24.3 | 101.6 | 101.6 | 15.0 | 15.0 | 45.3 | | 9.8 | 45.4 |
| Effective Green, g (s) | 31.6 | 108.9 | | 26.3 | 103.6 | 103.6 | 15.0 | 15.0 | 45.3 | | 9.8 | 45.4 |
| Actuated g/C Ratio | 0.18 | 0.61 | | 0.15 | 0.58 | 0.58 | 0.08 | 0.08 | 0.25 | | 0.05 | 0.25 |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 591 | 3779 | | 501 | 2926 | 877 | 140 | 142 | 398 | | 87 | 512 |
| v/s Ratio Prot | 0.09 | c0.51 | | c0.11 | 0.40 | 0.14 | 0.02 | c0.02 | 0.02 | | c0.03 | 0.01 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | 0.51 | 0.85 | | 0.78 | 0.69 | 0.24 | 0.23 | 0.23 | 0.09 | | 0.56 | 0.04 |
| Uniform Delay, d1 | 67.2 | 28.8 | | 74.1 | 27.0 | 18.8 | 77.1 | 77.1 | 51.5 | | 83.0 | 50.9 |
| Progression Factor | 0.76 | 0.50 | | 1.08 | 0.96 | 2.62 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.0 | 0.2 | | 5.2 | 1.0 | 0.4 | 0.8 | 0.8 | 0.1 | | 8.1 | 0.0 |
| Delay (s) | 51.3 | 14.7 | | 85.0 | 26.8 | 49.6 | 77.9 | 78.0 | 51.6 | | 91.1 | 50.9 |
| Level of Service | D | B | | F | C | D | E | E | D | | F | D |
| Approach Delay (s) | | 17.8 | | | 37.9 | | | 61.8 | | | 65.4 | |
| Approach LOS | | B | | | D | | | E | | | E | |

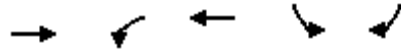
Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 28.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 22.0 |
| Intersection Capacity Utilization | 78.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

Phasings

3: SR 869/SW 10th Street & I-95 SB Off-Ramp

06/04/2021

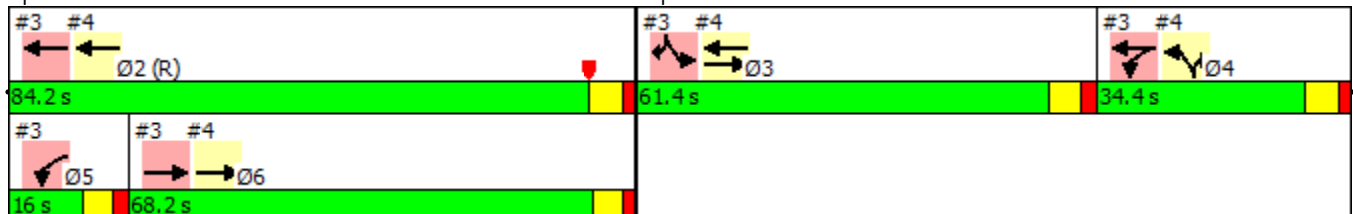


| Lane Group | EBT | WBL | WBT | SBL | SBR | Ø2 | Ø4 | Ø5 |
|-------------------------|--------|------|------|-------|-------|-------|------|------|
| Lane Configurations | ↑↑↑↑ | ↘↘ | ↑↑↑ | ↘↘ | ↘↘ | | | |
| Traffic Volume (vph) | 1960 | 585 | 1700 | 320 | 860 | | | |
| Future Volume (vph) | 1960 | 585 | 1700 | 320 | 860 | | | |
| Lane Group Flow (vph) | 2798 | 616 | 1848 | 337 | 905 | | | |
| Turn Type | NA | Prot | NA | Prot | Prot | | | |
| Protected Phases | 6 | 5 4 | 2 4 | 3 | 3 | 2 | 4 | 5 |
| Permitted Phases | | | | | | | | |
| Detector Phase | 6 | 5 4 | 2 4 | 3 | 3 | | | |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 10.0 | | | 5.0 | 5.0 | 10.0 | 28.0 | 10.0 |
| Minimum Split (s) | 16.0 | | | 11.4 | 11.4 | 16.5 | 34.4 | 16.0 |
| Total Split (s) | 68.2 | | | 61.4 | 61.4 | 84.2 | 34.4 | 16.0 |
| Total Split (%) | 37.9% | | | 34.1% | 34.1% | 47% | 19% | 9% |
| Yellow Time (s) | 4.0 | | | 4.4 | 4.4 | 4.5 | 4.4 | 4.0 |
| All-Red Time (s) | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | | | -2.0 | -2.0 | | | |
| Total Lost Time (s) | 4.0 | | | 4.4 | 4.4 | | | |
| Lead/Lag | Lag | | | Lead | Lead | | Lag | Lead |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | Max | | | None | None | C-Max | Min | None |
| v/c Ratio | 1.10dr | 0.70 | 0.57 | 0.31 | 1.03 | | | |
| Control Delay | 64.2 | 81.3 | 8.5 | 47.6 | 95.9 | | | |
| Queue Delay | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | | | |
| Total Delay | 64.2 | 81.3 | 8.7 | 47.6 | 95.9 | | | |
| Queue Length 50th (ft) | ~887 | 335 | 154 | 156 | ~644 | | | |
| Queue Length 95th (ft) | #931 | 405 | 197 | 203 | #794 | | | |
| Internal Link Dist (ft) | 925 | | 295 | | | | | |
| Turn Bay Length (ft) | | 500 | | 500 | 500 | | | |
| Base Capacity (vph) | 2625 | 884 | 3223 | 1087 | 882 | | | |
| Starvation Cap Reductn | 0 | 0 | 524 | 0 | 0 | | | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced v/c Ratio | 1.07 | 0.70 | 0.68 | 0.31 | 1.03 | | | |

Intersection Summary

Cycle Length: 180
 Actuated Cycle Length: 180
 Offset: 60 (33%), Referenced to phase 2:WBT, Start of Yellow
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: SR 869/SW 10th Street & I-95 SB Off-Ramp



HCM Signalized Intersection Capacity Analysis

3: SR 869/SW 10th Street & I-95 SB Off-Ramp

06/04/2021



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|--------|------|-------|-------|------|------|------|------|------|------|-------|
| Lane Configurations | | ↑↑↑↑ | | ↔↔ | ↑↑↑ | | | | | ↔↔ | | ↔↔ |
| Traffic Volume (vph) | 0 | 1960 | 635 | 585 | 1700 | 0 | 0 | 0 | 0 | 320 | 0 | 860 |
| Future Volume (vph) | 0 | 1960 | 635 | 585 | 1700 | 0 | 0 | 0 | 0 | 320 | 0 | 860 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.0 | | 4.0 | 4.5 | | | | | 4.4 | | 4.4 |
| Lane Util. Factor | | 0.81 | | 0.97 | 0.91 | | | | | 0.97 | | 0.88 |
| Frt | | 0.96 | | 1.00 | 1.00 | | | | | 1.00 | | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | 0.95 | | 1.00 |
| Satd. Flow (prot) | | 7274 | | 3433 | 5085 | | | | | 3433 | | 2787 |
| Flt Permitted | | 1.00 | | 0.95 | 1.00 | | | | | 0.95 | | 1.00 |
| Satd. Flow (perm) | | 7274 | | 3433 | 5085 | | | | | 3433 | | 2787 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.95 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 2130 | 668 | 616 | 1848 | 0 | 0 | 0 | 0 | 337 | 0 | 905 |
| RTOR Reduction (vph) | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2766 | 0 | 616 | 1848 | 0 | 0 | 0 | 0 | 337 | 0 | 905 |
| Turn Type | | NA | | Prot | NA | | | | | Prot | | Prot |
| Protected Phases | | 6 | | 5 4 | 2 4 | | | | | 3 | | 3 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 62.2 | | 44.4 | 112.1 | | | | | 55.0 | | 55.0 |
| Effective Green, g (s) | | 64.2 | | 42.0 | 109.7 | | | | | 57.0 | | 57.0 |
| Actuated g/C Ratio | | 0.36 | | 0.23 | 0.61 | | | | | 0.32 | | 0.32 |
| Clearance Time (s) | | 6.0 | | | | | | | | 6.4 | | 6.4 |
| Vehicle Extension (s) | | 3.0 | | | | | | | | 2.0 | | 2.0 |
| Lane Grp Cap (vph) | | 2594 | | 801 | 3099 | | | | | 1087 | | 882 |
| v/s Ratio Prot | | c0.38 | | c0.18 | 0.36 | | | | | 0.10 | | c0.32 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 1.10dr | | 0.77 | 0.60 | | | | | 0.31 | | 1.03 |
| Uniform Delay, d1 | | 57.9 | | 64.5 | 21.6 | | | | | 46.6 | | 61.5 |
| Progression Factor | | 0.51 | | 1.27 | 0.41 | | | | | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 35.1 | | 4.0 | 0.3 | | | | | 0.1 | | 37.1 |
| Delay (s) | | 64.9 | | 85.9 | 9.2 | | | | | 46.7 | | 98.6 |
| Level of Service | | E | | F | A | | | | | D | | F |
| Approach Delay (s) | | 64.9 | | | 28.3 | | | 0.0 | | | 84.5 | |
| Approach LOS | | E | | | C | | | A | | | F | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 54.8 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 16.8 |
| Intersection Capacity Utilization | 70.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Phasings

4: I-95 NB On/Off-Ramp & SR 869/SW 10th Street

06/04/2021



| Lane Group | EBT | EBR | WBT | NBL | NBR | Ø2 | Ø3 | Ø5 | Ø6 |
|-------------------------|------|------|------|-------|-------|-------|------|------|------|
| Lane Configurations | ↑↑↑ | ↗↗ | ↑↑↑ | ↙↙↙ | ↗↗↗ | | | | |
| Traffic Volume (vph) | 1090 | 1190 | 1905 | 650 | 420 | | | | |
| Future Volume (vph) | 1090 | 1190 | 1905 | 650 | 420 | | | | |
| Lane Group Flow (vph) | 1185 | 1253 | 2071 | 684 | 442 | | | | |
| Turn Type | NA | Free | NA | Prot | Prot | | | | |
| Protected Phases | 6 3 | | 2 3 | 4 | 4 | 2 | 3 | 5 | 6 |
| Permitted Phases | | Free | | | | | | | |
| Detector Phase | 6 3 | | 2 3 | 4 | 4 | | | | |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | | | | 28.0 | 28.0 | 10.0 | 5.0 | 10.0 | 10.0 |
| Minimum Split (s) | | | | 34.4 | 34.4 | 16.5 | 11.4 | 16.0 | 16.0 |
| Total Split (s) | | | | 34.4 | 34.4 | 84.2 | 61.4 | 16.0 | 68.2 |
| Total Split (%) | | | | 19.1% | 19.1% | 47% | 34% | 9% | 38% |
| Yellow Time (s) | | | | 4.4 | 4.4 | 4.5 | 4.4 | 4.0 | 4.0 |
| All-Red Time (s) | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | -2.0 | -2.0 | | | | |
| Total Lost Time (s) | | | | 4.4 | 4.4 | | | | |
| Lead/Lag | | | | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | | | | Min | Min | C-Max | None | None | Max |
| v/c Ratio | 0.33 | 0.45 | 0.35 | 0.82 | 0.74 | | | | |
| Control Delay | 0.7 | 3.3 | 6.8 | 81.7 | 79.4 | | | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Total Delay | 0.7 | 3.3 | 6.8 | 81.7 | 79.4 | | | | |
| Queue Length 50th (ft) | 7 | 51 | 162 | 281 | 221 | | | | |
| Queue Length 95th (ft) | m7 | m19 | 87 | 331 | 276 | | | | |
| Internal Link Dist (ft) | 260 | | 630 | 1225 | | | | | |
| Turn Bay Length (ft) | | 700 | | 410 | 430 | | | | |
| Base Capacity (vph) | 3548 | 2787 | 5913 | 831 | 601 | | | | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | | | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | | | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced v/c Ratio | 0.33 | 0.45 | 0.35 | 0.82 | 0.74 | | | | |

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

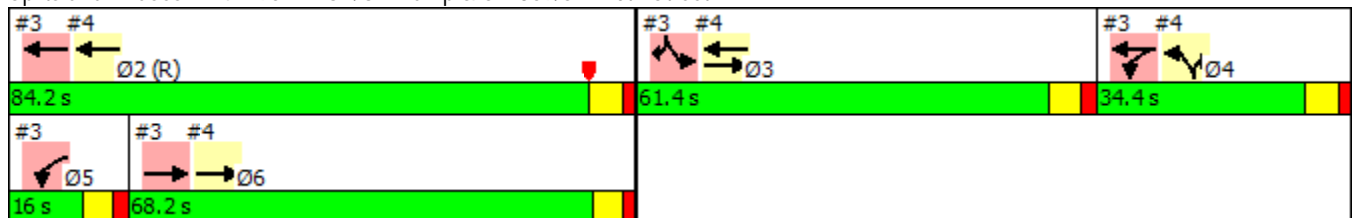
Offset: 60 (33%), Referenced to phase 2:WBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: I-95 NB On/Off-Ramp & SR 869/SW 10th Street



HCM Signalized Intersection Capacity Analysis
 4: I-95 NB On/Off-Ramp & SR 869/SW 10th Street

06/04/2021



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↑↑↑ | ↑↑ | | ↑↑↑↑ | ↑↑↑ | ↑↑↑ |
| Traffic Volume (vph) | 1090 | 1190 | 0 | 1905 | 650 | 420 |
| Future Volume (vph) | 1090 | 1190 | 0 | 1905 | 650 | 420 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 2.0 | | 4.5 | 4.4 | 4.4 |
| Lane Util. Factor | 0.91 | 0.88 | | 0.81 | 0.94 | 0.76 |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 5085 | 2787 | | 7544 | 4990 | 3610 |
| Flt Permitted | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 5085 | 2787 | | 7544 | 4990 | 3610 |
| Peak-hour factor, PHF | 0.92 | 0.95 | 0.92 | 0.92 | 0.95 | 0.95 |
| Adj. Flow (vph) | 1185 | 1253 | 0 | 2071 | 684 | 442 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 1185 | 1253 | 0 | 2071 | 684 | 442 |
| Turn Type | NA | Free | | NA | Prot | Prot |
| Protected Phases | 6 3 | | | 2 3 | 4 | 4 |
| Permitted Phases | | Free | | | | |
| Actuated Green, G (s) | 123.2 | 180.0 | | 139.2 | 28.0 | 28.0 |
| Effective Green, g (s) | 125.2 | 180.0 | | 141.2 | 30.0 | 30.0 |
| Actuated g/C Ratio | 0.70 | 1.00 | | 0.78 | 0.17 | 0.17 |
| Clearance Time (s) | | | | | 6.4 | 6.4 |
| Vehicle Extension (s) | | | | | 3.5 | 3.5 |
| Lane Grp Cap (vph) | 3536 | 2787 | | 5917 | 831 | 601 |
| v/s Ratio Prot | 0.23 | | | 0.27 | c0.14 | 0.12 |
| v/s Ratio Perm | | c0.45 | | | | |
| v/c Ratio | 0.34 | 0.45 | | 0.35 | 0.82 | 0.74 |
| Uniform Delay, d1 | 10.9 | 0.0 | | 5.8 | 72.4 | 71.2 |
| Progression Factor | 0.06 | 1.00 | | 1.14 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.0 | 0.2 | | 0.0 | 6.8 | 4.8 |
| Delay (s) | 0.6 | 0.2 | | 6.6 | 79.2 | 76.0 |
| Level of Service | A | A | | A | E | E |
| Approach Delay (s) | 0.4 | | | 6.6 | 78.0 | |
| Approach LOS | A | | | A | E | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 18.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.56 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 52.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Phasings

5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

06/04/2021



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖↖ | ↑↑↑ | ↗ | ↖↖ | ↑↑↑ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑ | ↗ |
| Traffic Volume (vph) | 190 | 1070 | 250 | 95 | 1425 | 80 | 200 | 130 | 120 | 220 | 150 | 280 |
| Future Volume (vph) | 190 | 1070 | 250 | 95 | 1425 | 80 | 200 | 130 | 120 | 220 | 150 | 280 |
| Lane Group Flow (vph) | 207 | 1163 | 272 | 103 | 1549 | 87 | 217 | 141 | 130 | 239 | 163 | 304 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 2 | 7 | 4 | 4 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 15.0 | 15.0 | 4.0 | 15.0 | 15.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Minimum Split (s) | 10.4 | 21.4 | 21.4 | 10.4 | 21.4 | 21.4 | 9.7 | 11.7 | 11.7 | 9.7 | 11.7 | 11.7 |
| Total Split (s) | 24.0 | 91.0 | 91.0 | 16.0 | 83.0 | 83.0 | 29.0 | 43.0 | 43.0 | 30.0 | 44.0 | 44.0 |
| Total Split (%) | 13.3% | 50.6% | 50.6% | 8.9% | 46.1% | 46.1% | 16.1% | 23.9% | 23.9% | 16.7% | 24.4% | 24.4% |
| Yellow Time (s) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| All-Red 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 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Min | C-Min | None | Min | Min | None | None | None | None | None | None |
| v/c Ratio | 0.66 | 0.38 | 0.26 | 0.51 | 0.54 | 0.09 | 0.78 | 0.36 | 0.45 | 0.70 | 0.78 | 0.79 |
| Control Delay | 73.5 | 13.8 | 3.1 | 91.1 | 26.7 | 3.8 | 74.4 | 75.8 | 13.9 | 67.0 | 100.6 | 33.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 73.5 | 13.8 | 3.1 | 91.1 | 26.7 | 3.8 | 74.4 | 75.8 | 13.9 | 67.0 | 100.6 | 33.1 |
| Queue Length 50th (ft) | 116 | 207 | 39 | 61 | 421 | 0 | 214 | 82 | 0 | 240 | 191 | 79 |
| Queue Length 95th (ft) | 173 | 176 | 65 | 97 | 531 | 31 | 285 | 116 | 64 | 315 | 267 | 194 |
| Internal Link Dist (ft) | | 630 | | | 1233 | | | 1112 | | | 1327 | |
| Turn Bay Length (ft) | 300 | | 300 | 200 | | 300 | 260 | | 260 | 170 | | 170 |
| Base Capacity (vph) | 373 | 3039 | 1055 | 221 | 2872 | 933 | 297 | 733 | 433 | 363 | 396 | 521 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.38 | 0.26 | 0.47 | 0.54 | 0.09 | 0.73 | 0.19 | 0.30 | 0.66 | 0.41 | 0.58 |

Intersection Summary

Cycle Length: 180

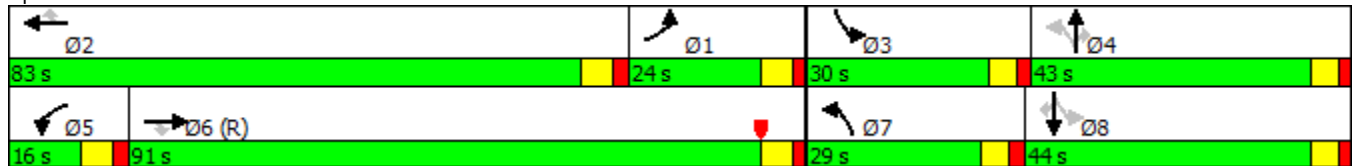
Actuated Cycle Length: 180

Offset: 112 (62%), Referenced to phase 6:EBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street



HCM Signalized Intersection Capacity Analysis

5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

06/04/2021



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|-------|-------|------|-------|-------|-------|------|------|-------|-------|------|
| Lane Configurations | ↖↗ | ↑↑↑ | ↖ | ↖↗ | ↑↑↑ | ↖ | ↖ | ↑↑ | ↖ | ↖ | ↑ | ↖ |
| Traffic Volume (vph) | 190 | 1070 | 250 | 95 | 1425 | 80 | 200 | 130 | 120 | 220 | 150 | 280 |
| Future Volume (vph) | 190 | 1070 | 250 | 95 | 1425 | 80 | 200 | 130 | 120 | 220 | 150 | 280 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.34 | 1.00 | 1.00 | 0.60 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 628 | 3539 | 1583 | 1126 | 1863 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 207 | 1163 | 272 | 103 | 1549 | 87 | 217 | 141 | 130 | 239 | 163 | 304 |
| RTOR Reduction (vph) | 0 | 0 | 110 | 0 | 0 | 38 | 0 | 0 | 116 | 0 | 0 | 208 |
| Lane Group Flow (vph) | 207 | 1163 | 162 | 103 | 1549 | 49 | 217 | 141 | 14 | 239 | 163 | 96 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 14.5 | 105.5 | 105.5 | 8.6 | 99.6 | 99.6 | 41.1 | 19.8 | 19.8 | 42.3 | 20.4 | 20.4 |
| Effective Green, g (s) | 16.5 | 107.5 | 107.5 | 10.6 | 101.6 | 101.6 | 41.1 | 19.8 | 19.8 | 42.3 | 20.4 | 20.4 |
| Actuated g/C Ratio | 0.09 | 0.60 | 0.60 | 0.06 | 0.56 | 0.56 | 0.23 | 0.11 | 0.11 | 0.23 | 0.11 | 0.11 |
| Clearance Time (s) | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | 1.5 | 3.0 | 3.0 | 1.5 | 3.0 | 3.0 | 1.5 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 314 | 3036 | 945 | 202 | 2870 | 893 | 278 | 389 | 174 | 342 | 211 | 179 |
| v/s Ratio Prot | c0.06 | 0.23 | | 0.03 | c0.30 | | c0.09 | 0.04 | | 0.08 | c0.09 | |
| v/s Ratio Perm | | | 0.10 | | | 0.03 | 0.09 | | 0.01 | 0.08 | | 0.06 |
| v/c Ratio | 0.66 | 0.38 | 0.17 | 0.51 | 0.54 | 0.05 | 0.78 | 0.36 | 0.08 | 0.70 | 0.77 | 0.53 |
| Uniform Delay, d1 | 79.0 | 18.9 | 16.3 | 82.2 | 24.6 | 17.6 | 61.4 | 74.2 | 71.9 | 60.9 | 77.5 | 75.3 |
| Progression Factor | 0.81 | 0.67 | 1.29 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 3.5 | 0.3 | 0.4 | 0.7 | 0.2 | 0.0 | 12.3 | 0.2 | 0.1 | 5.0 | 14.7 | 1.5 |
| Delay (s) | 67.5 | 13.1 | 21.4 | 82.9 | 24.8 | 17.6 | 73.7 | 74.5 | 72.0 | 65.9 | 92.2 | 76.9 |
| Level of Service | E | B | C | F | C | B | E | E | E | E | F | E |
| Approach Delay (s) | | 21.3 | | | 27.8 | | | 73.5 | | | 76.7 | |
| Approach LOS | | C | | | C | | | E | | | E | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 37.9 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.61 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 20.2 |
| Intersection Capacity Utilization | 69.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Queues

1: NW 5th Terr & Sample Road

| | → | ↙ | ← | ↘ | ↗ |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | WBL | WBT | NBL | NBR |
| Lane Group Flow (vph) | 2299 | 152 | 1821 | 147 | 190 |
| v/c Ratio | 0.54 | 0.64 | 0.48 | 0.68 | 0.53 |
| Control Delay | 17.1 | 62.0 | 1.6 | 65.1 | 11.8 |
| Queue Delay | 0.0 | 1.4 | 0.1 | 0.0 | 0.0 |
| Total Delay | 17.1 | 63.4 | 1.7 | 65.1 | 11.8 |
| Queue Length 50th (ft) | 257 | 84 | 27 | 111 | 0 |
| Queue Length 95th (ft) | 325 | #155 | 27 | 170 | 64 |
| Internal Link Dist (ft) | 575 | | 175 | 531 | |
| Turn Bay Length (ft) | | | | | |
| Base Capacity (vph) | 4265 | 236 | 3824 | 545 | 619 |
| Starvation Cap Reductn | 0 | 18 | 458 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.70 | 0.54 | 0.27 | 0.31 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis







1: NW 5th Terr & Sample Road

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------|------|-------|-------|---------------------------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | > | | > | > | > | > |
| Traffic Volume (vph) | 2010 | 105 | 140 | 1675 | 135 | 175 |
| Future Volume (vph) | 2010 | 105 | 140 | 1675 | 135 | 175 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | | 6.0 | 6.0 | 9.0 | 9.0 |
| Lane Util. Factor | 0.81 | | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | 0.99 | | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 7488 | | 1770 | 5085 | 1770 | 1583 |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 7488 | | 1770 | 5085 | 1770 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2185 | 114 | 152 | 1821 | 147 | 190 |
| RTOR Reduction (vph) | 5 | 0 | 0 | 0 | 0 | 167 |
| Lane Group Flow (vph) | 2294 | 0 | 152 | 1821 | 147 | 23 |
| Turn Type | NA | | Prot | NA | Prot | Perm |
| Protected Phases | 2 3 | | 1 | 1 2 3 | 4 | |
| Permitted Phases | | | | | 4 | 4 |
| Actuated Green, G (s) | 66.2 | | 14.0 | 88.2 | 14.8 | 14.8 |
| Effective Green, g (s) | 68.2 | | 16.0 | 90.2 | 14.8 | 14.8 |
| Actuated g/C Ratio | 0.57 | | 0.13 | 0.75 | 0.12 | 0.12 |
| Clearance Time (s) | | | 8.0 | | 9.0 | 9.0 |
| Vehicle Extension (s) | | | 1.5 | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 4255 | | 236 | 3822 | 218 | 195 |
| v/s Ratio Prot | c0.31 | | c0.09 | 0.36 | c0.08 | |
| v/s Ratio Perm | | | | | | 0.01 |
| v/c Ratio | 0.54 | | 0.64 | 0.48 | 0.67 | 0.12 |
| Uniform Delay, d1 | 16.1 | | 49.3 | 5.8 | 50.3 | 46.8 |
| Progression Factor | 1.00 | | 1.00 | 0.20 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.1 | | 4.1 | 0.0 | 6.3 | 0.1 |
| Delay (s) | 16.2 | | 53.6 | 1.2 | 56.6 | 46.9 |
| Level of Service | B | | D | A | E | D |
| Approach Delay (s) | 16.2 | | | 5.2 | 51.1 | |
| Approach LOS | B | | | A | D | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 14.0 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.61 | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | 27.0 |
| Intersection Capacity Utilization | | | 57.4% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

Queues

2: Sample Road & NW 5th Ave

| |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Group Flow (vph) | 92 | 2283 | 1810 | 82 | 250 | 163 |
| v/c Ratio | 0.70 | 0.47 | 0.45 | 0.08 | 0.59 | 0.49 |
| Control Delay | 63.6 | 2.4 | 9.8 | 1.4 | 55.0 | 13.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.6 | 2.4 | 9.8 | 1.4 | 55.0 | 13.2 |
| Queue Length 50th (ft) | 70 | 26 | 182 | 2 | 95 | 5 |
| Queue Length 95th (ft) | #153 | 43 | 251 | m5 | 130 | 64 |
| Internal Link Dist (ft) | | 175 | 1004 | | 271 | |
| Turn Bay Length (ft) | | | | 450 | | |
| Base Capacity (vph) | 132 | 4818 | 4017 | 1023 | 1058 | 595 |
| Starvation Cap Reductn | 0 | 529 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 14 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.70 | 0.53 | 0.45 | 0.08 | 0.24 | 0.27 |

Intersection Summary



















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Sample Road & NW 5th Ave

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |    |    |  |   |   |
| Traffic Volume (vph) | 85 | 2100 | 1665 | 75 | 230 | 150 |
| Future Volume (vph) | 85 | 2100 | 1665 | 75 | 230 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 9.0 | 9.0 |
| Lane Util. Factor | 1.00 | 0.86 | 0.86 | 1.00 | 0.97 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 0.85 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 1770 | 6408 | 6408 | 1583 | 3433 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 1770 | 6408 | 6408 | 1583 | 3433 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 92 | 2283 | 1810 | 82 | 250 | 163 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 31 | 0 | 137 |
| Lane Group Flow (vph) | 92 | 2283 | 1810 | 51 | 250 | 26 |
| Turn Type | Prot | NA | NA | Perm | Prot | Perm |
| Protected Phases | 3 | 1 2 3 | 1 2 | | 4 | |
| Permitted Phases | | | | 1 2 | | 4 |
| Actuated Green, G (s) | 7.0 | 88.2 | 73.2 | 73.2 | 14.8 | 14.8 |
| Effective Green, g (s) | 9.0 | 90.2 | 75.2 | 75.2 | 14.8 | 14.8 |
| Actuated g/C Ratio | 0.08 | 0.75 | 0.63 | 0.63 | 0.12 | 0.12 |
| Clearance Time (s) | 8.0 | | | | 9.0 | 9.0 |
| Vehicle Extension (s) | 1.5 | | | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 132 | 4816 | 4015 | 992 | 423 | 195 |
| v/s Ratio Prot | c0.05 | c0.36 | 0.28 | | c0.07 | |
| v/s Ratio Perm | | | | 0.03 | | 0.02 |
| v/c Ratio | 0.70 | 0.47 | 0.45 | 0.05 | 0.59 | 0.13 |
| Uniform Delay, d1 | 54.2 | 5.7 | 11.7 | 8.6 | 49.7 | 46.9 |
| Progression Factor | 0.72 | 0.34 | 0.78 | 0.55 | 1.00 | 1.00 |
| Incremental Delay, d2 | 10.6 | 0.0 | 0.0 | 0.0 | 1.5 | 0.1 |
| Delay (s) | 49.6 | 2.0 | 9.1 | 4.8 | 51.2 | 47.0 |
| Level of Service | D | A | A | A | D | D |
| Approach Delay (s) | | 3.8 | 8.9 | | 49.6 | |
| Approach LOS | | A | A | | D | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 9.9 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.56 | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | 27.0 |
| Intersection Capacity Utilization | | | 52.9% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

Queues












3: Sample Road & I-95 SB RAMP

| | → | ↘ | ← | ↙ | ↘ |
|-----------------------------|------|------|------|------|------|
| Lane Group | EBT | EBR | WBT | SBL2 | SBR |
| Lane Group Flow (vph) | 1554 | 947 | 1391 | 442 | 484 |
| v/c Ratio | 0.43 | 0.60 | 0.48 | 0.52 | 0.70 |
| Control Delay | 5.3 | 7.8 | 7.1 | 21.9 | 26.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 5.3 | 7.8 | 7.1 | 21.9 | 26.7 |
| Queue Length 50th (ft) | 74 | 244 | 109 | 70 | 89 |
| Queue Length 95th (ft) | 124 | 360 | 144 | 108 | 138 |
| Internal Link Dist (ft) | 1004 | | 259 | | |
| Turn Bay Length (ft) | | 250 | | | |
| Base Capacity (vph) | 3650 | 1583 | 2897 | 886 | 719 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.43 | 0.60 | 0.48 | 0.50 | 0.67 |
| Intersection Summary | | | | | |

2020AM Build 1_Sample Road.syn

HCM Signalized Intersection Capacity Analysis

3: Sample Road & I-95 SB RAMP

| |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | SBL2 | SBL | SBR | NWL | NWR |
| Lane Configurations | | ↑↑↑ | ↑ | | ↑↑↑ | | ↑↑ | | ↑↑ | | |
| Traffic Volume (vph) | 0 | 1430 | 900 | 0 | 1280 | 0 | 420 | 0 | 460 | 0 | 0 |
| Future Volume (vph) | 0 | 1430 | 900 | 0 | 1280 | 0 | 420 | 0 | 460 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 5.5 | 2.0 | | 5.5 | | 5.5 | | 5.5 | | |
| Lane Util. Factor | | 0.86 | 1.00 | | 0.91 | | 0.97 | | 0.88 | | |
| Flt | | 1.00 | 0.85 | | 1.00 | | 1.00 | | 0.85 | | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (prot) | | 6408 | 1583 | | 5085 | | 3433 | | 2787 | | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (perm) | | 6408 | 1583 | | 5085 | | 3433 | | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1554 | 947 | 0 | 1391 | 0 | 442 | 0 | 484 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1554 | 947 | 0 | 1391 | 0 | 442 | 0 | 484 | 0 | 0 |
| Turn Type | | NA | Free | | NA | | Prot | | Prot | | |
| Protected Phases | | 6 | | | 2 | | 3 | | 3 | | |
| Permitted Phases | | | Free | | | | | | | | |
| Actuated Green, G (s) | | 32.2 | 60.0 | | 32.2 | | 12.8 | | 12.8 | | |
| Effective Green, g (s) | | 34.2 | 60.0 | | 34.2 | | 14.8 | | 14.8 | | |
| Actuated g/C Ratio | | 0.57 | 1.00 | | 0.57 | | 0.25 | | 0.25 | | |
| Clearance Time (s) | | 7.5 | | | 7.5 | | 7.5 | | 7.5 | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 2.5 | | 2.5 | | |
| Lane Grp Cap (vph) | | 3652 | 1583 | | 2898 | | 846 | | 687 | | |
| v/s Ratio Prot | | 0.24 | | | 0.27 | | 0.13 | | 0.17 | | |
| v/s Ratio Perm | | | c0.60 | | | | | | | | |
| v/c Ratio | | 0.43 | 0.60 | | 0.48 | | 0.52 | | 0.70 | | |
| Uniform Delay, d1 | | 7.3 | 0.0 | | 7.6 | | 19.5 | | 20.6 | | |
| Progression Factor | | 0.67 | 1.00 | | 0.85 | | 1.00 | | 1.00 | | |
| Incremental Delay, d2 | | 0.3 | 1.5 | | 0.5 | | 0.4 | | 3.1 | | |
| Delay (s) | | 5.2 | 1.5 | | 6.9 | | 20.0 | | 23.7 | | |
| Level of Service | | A | A | | A | | B | | C | | |
| Approach Delay (s) | | 3.8 | | | 6.9 | | | 21.9 | | 0.0 | |
| Approach LOS | | A | | | A | | | C | | A | |
| Intersection Summary | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 8.2 | | | | HCM 2000 Level of Service | | | A | |
| HCM 2000 Volume to Capacity ratio | | | 0.73 | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | | Sum of lost time (s) | | | 11.0 | |
| Intersection Capacity Utilization | | | 58.4% | | | | ICU Level of Service | | | B | |
| Analysis Period (min) | | | 15 | | | | | | | | |

c Critical Lane Group

Queues

4: I-95 NB RAMP & Sample Road













| | → | ← | ↖ | ↗ | |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | WBT | WBR | NBL2 | NBR |
| Lane Group Flow (vph) | 1130 | 1848 | 463 | 495 | 358 |
| v/c Ratio | 0.38 | 0.62 | 0.29 | 0.63 | 0.56 |
| Control Delay | 5.2 | 4.7 | 0.2 | 24.7 | 24.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 5.2 | 4.7 | 0.2 | 24.7 | 24.0 |
| Queue Length 50th (ft) | 81 | 90 | 0 | 81 | 64 |
| Queue Length 95th (ft) | 56 | m145 | m0 | 124 | 104 |
| Internal Link Dist (ft) | 270 | 1155 | | | |
| Turn Bay Length (ft) | | | 250 | | |
| Base Capacity (vph) | 2984 | 2984 | 1583 | 829 | 673 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.38 | 0.62 | 0.29 | 0.60 | 0.53 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis











4: I-95 NB RAMP & Sample Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL2 | NBL | NBR | SEL | SER | |
| Lane Configurations | | ↑↑↑ | | | ↑↑↑ | ↑ | ↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1040 | 0 | 0 | 1700 | 440 | 470 | 0 | 340 | 0 | 0 | |
| Future Volume (vph) | 0 | 1040 | 0 | 0 | 1700 | 440 | 470 | 0 | 340 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | 5.5 | | | 5.5 | 2.0 | 5.5 | | 5.5 | | | |
| Lane Util. Factor | | 0.91 | | | 0.91 | 1.00 | 0.97 | | 0.88 | | | |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 5085 | | | 5085 | 1583 | 3433 | | 2787 | | | |
| Flt Permitted | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 5085 | | | 5085 | 1583 | 3433 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 1130 | 0 | 0 | 1848 | 463 | 495 | 0 | 358 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 1130 | 0 | 0 | 1848 | 463 | 495 | 0 | 358 | 0 | 0 | |
| Turn Type | | NA | | | NA | Free | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 4 | | 4 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | | 33.2 | | | 33.2 | 60.0 | 11.8 | | 11.8 | | | |
| Effective Green, g (s) | | 35.2 | | | 35.2 | 60.0 | 13.8 | | 13.8 | | | |
| Actuated g/C Ratio | | 0.59 | | | 0.59 | 1.00 | 0.23 | | 0.23 | | | |
| Clearance Time (s) | | 7.5 | | | 7.5 | | 7.5 | | 7.5 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 2.5 | | 2.5 | | | |
| Lane Grp Cap (vph) | | 2983 | | | 2983 | 1583 | 789 | | 641 | | | |
| v/s Ratio Prot | | 0.22 | | | c0.36 | | c0.14 | | 0.13 | | | |
| v/s Ratio Perm | | | | | | 0.29 | | | | | | |
| v/c Ratio | | 0.38 | | | 0.62 | 0.29 | 0.63 | | 0.56 | | | |
| Uniform Delay, d1 | | 6.6 | | | 8.1 | 0.0 | 20.8 | | 20.4 | | | |
| Progression Factor | | 0.72 | | | 0.51 | 1.00 | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 0.3 | | | 0.5 | 0.2 | 1.4 | | 0.8 | | | |
| Delay (s) | | 5.1 | | | 4.6 | 0.2 | 22.1 | | 21.3 | | | |
| Level of Service | | A | | | A | A | C | | C | | | |
| Approach Delay (s) | | 5.1 | | | 3.7 | | | 21.8 | | 0.0 | | |
| Approach LOS | | A | | | A | | | C | | A | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 7.7 | | | | | | | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.62 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | | | | | | Sum of lost time (s) | 11.0 |
| Intersection Capacity Utilization | | | 53.5% | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Queues

5: NE 3rd Ave & Sample Road































| |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 386 | 1114 | 49 | 1669 | 212 | 217 | 65 | 92 | 212 | 516 |
| v/c Ratio | 0.91 | 0.48 | 0.43 | 0.87 | 0.66 | 0.44 | 0.12 | 0.29 | 0.43 | 0.97 |
| Control Delay | 70.8 | 17.7 | 66.2 | 40.1 | 42.8 | 39.6 | 0.5 | 29.2 | 39.4 | 63.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.8 | 17.7 | 66.2 | 40.1 | 42.8 | 39.6 | 0.5 | 29.2 | 39.4 | 63.9 |
| Queue Length 50th (ft) | 147 | 203 | 37 | 437 | 117 | 138 | 0 | 47 | 135 | 293 |
| Queue Length 95th (ft) | #243 | 263 | 79 | 505 | 183 | 214 | 0 | 86 | 209 | #517 |
| Internal Link Dist (ft) | | 1155 | | 834 | | 912 | | | 742 | |
| Turn Bay Length (ft) | 550 | | 490 | | 250 | | 225 | 200 | | |
| Base Capacity (vph) | 425 | 2311 | 116 | 1927 | 323 | 507 | 543 | 320 | 507 | 543 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.91 | 0.48 | 0.42 | 0.87 | 0.66 | 0.43 | 0.12 | 0.29 | 0.42 | 0.95 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

5: NE 3rd Ave & Sample Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |   | |   |   | |   |  |  |   |   |   |
| Traffic Volume (vph) | 355 | 910 | 115 | 45 | 1470 | 65 | 195 | 200 | 60 | 85 | 195 | 475 |
| Future Volume (vph) | 355 | 910 | 115 | 45 | 1470 | 65 | 195 | 200 | 60 | 85 | 195 | 475 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.91 | | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3400 | 4951 | | 1752 | 5004 | | 1752 | 1845 | 1568 | 1752 | 1845 | 1568 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.51 | 1.00 | 1.00 | 0.50 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3400 | 4951 | | 1752 | 5004 | | 945 | 1845 | 1568 | 930 | 1845 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 386 | 989 | 125 | 49 | 1598 | 71 | 212 | 217 | 65 | 92 | 212 | 516 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 4 | 0 | 0 | 0 | 48 | 0 | 0 | 114 |
| Lane Group Flow (vph) | 386 | 1101 | 0 | 49 | 1665 | 0 | 212 | 217 | 17 | 92 | 212 | 402 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Prot | NA | | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | | | | | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 13.0 | 52.3 | | 4.8 | 44.1 | | 36.9 | 31.9 | 31.9 | 36.9 | 31.9 | 31.9 |
| Effective Green, g (s) | 15.0 | 54.3 | | 6.8 | 46.1 | | 36.9 | 31.9 | 31.9 | 36.9 | 31.9 | 31.9 |
| Actuated g/C Ratio | 0.12 | 0.45 | | 0.06 | 0.38 | | 0.31 | 0.27 | 0.27 | 0.31 | 0.27 | 0.27 |
| Clearance Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 1.5 | 3.0 | | 1.5 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 425 | 2240 | | 99 | 1922 | | 324 | 490 | 416 | 320 | 490 | 416 |
| v/s Ratio Prot | c0.11 | 0.22 | | 0.03 | c0.33 | | c0.03 | 0.12 | | 0.01 | 0.11 | |
| v/s Ratio Perm | | | | | | | 0.17 | | 0.01 | 0.08 | | c0.26 |
| v/c Ratio | 0.91 | 0.49 | | 0.49 | 0.87 | | 0.65 | 0.44 | 0.04 | 0.29 | 0.43 | 0.97 |
| Uniform Delay, d1 | 51.8 | 23.1 | | 54.9 | 34.1 | | 36.5 | 36.7 | 32.7 | 30.5 | 36.5 | 43.5 |
| Progression Factor | 0.88 | 0.75 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 21.1 | 0.7 | | 1.4 | 5.6 | | 3.6 | 0.2 | 0.0 | 0.2 | 0.2 | 35.0 |
| Delay (s) | 66.7 | 18.0 | | 56.4 | 39.7 | | 40.0 | 36.9 | 32.7 | 30.7 | 36.8 | 78.5 |
| Level of Service | E | B | | E | D | | D | D | C | C | D | E |
| Approach Delay (s) | | 30.6 | | | 40.1 | | | 37.7 | | | 62.4 | |
| Approach LOS | | C | | | D | | | D | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 40.7 | | | | HCM 2000 Level of Service | | | | D | |
| HCM 2000 Volume to Capacity ratio | | | 0.89 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | | Sum of lost time (s) | | | 22.0 | | |
| Intersection Capacity Utilization | | | 84.2% | | | | ICU Level of Service | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

1: SW 12th Avenue & Hillsboro Blvd



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 43 | 2059 | 250 | 2234 | 54 | 223 | 11 | 332 | 268 | 276 | 337 |
| v/c Ratio | 0.42 | 0.86 | 1.25 | 0.93 | 0.05 | 0.64 | 0.06 | 0.89 | 0.83 | 0.84 | 0.67 |
| Control Delay | 67.2 | 33.8 | 192.0 | 26.5 | 0.1 | 60.0 | 47.6 | 59.8 | 68.4 | 69.0 | 17.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 67.2 | 33.8 | 192.0 | 26.5 | 0.1 | 60.0 | 47.6 | 59.8 | 68.4 | 69.0 | 17.9 |
| Queue Length 50th (ft) | 33 | 517 | ~128 | 510 | 0 | 87 | 8 | 192 | 208 | 215 | 69 |
| Queue Length 95th (ft) | 72 | #701 | m#213 | #785 | m0 | 124 | 26 | #324 | 306 | 313 | 146 |
| Internal Link Dist (ft) | | 580 | | 548 | | | 436 | | | 396 | |
| Turn Bay Length (ft) | 450 | | 375 | | 350 | 225 | | 250 | 200 | | |
| Base Capacity (vph) | 103 | 2391 | 200 | 2410 | 1213 | 915 | 496 | 375 | 378 | 385 | 506 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.42 | 0.86 | 1.25 | 0.93 | 0.04 | 0.24 | 0.02 | 0.89 | 0.71 | 0.72 | 0.67 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

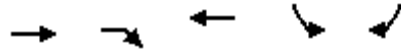
HCM Signalized Intersection Capacity Analysis

1: SW 12th Avenue & Hillsboro Blvd

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|------|-------|----------------------|-------|---------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 40 | 1765 | 130 | 230 | 2055 | 50 | 205 | 10 | 305 | 410 | 90 | 310 |
| Future Volume (vph) | 40 | 1765 | 130 | 230 | 2055 | 50 | 205 | 10 | 305 | 410 | 90 | 310 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.0 | 6.0 | 6.0 | 6.5 | 6.0 | 6.0 | 6.5 |
| Lane Util. Factor | 1.00 | 0.91 | | 0.97 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |
| Frt | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 |
| Satd. Flow (prot) | 1770 | 5033 | | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1681 | 1714 | 1583 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 |
| Satd. Flow (perm) | 1770 | 5033 | | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1681 | 1714 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 43 | 1918 | 141 | 250 | 2234 | 54 | 223 | 11 | 332 | 446 | 98 | 337 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 0 | 17 | 0 | 0 | 74 | 0 | 0 | 144 |
| Lane Group Flow (vph) | 43 | 2054 | 0 | 250 | 2234 | 37 | 223 | 11 | 258 | 268 | 276 | 193 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | pm+ov | Split | NA | pm+ov | Split | NA | pm+ov |
| Protected Phases | 1 | 6 | | 5 | 2 | 3 | 4 | 4 | 5 | 3 | 3 | 1 |
| Permitted Phases | | | | | | 2 | | | 4 | | | 3 |
| Actuated Green, G (s) | 5.0 | 54.9 | | 5.0 | 54.9 | 77.8 | 12.2 | 12.2 | 17.2 | 22.9 | 22.9 | 27.9 |
| Effective Green, g (s) | 7.0 | 56.9 | | 7.0 | 56.9 | 81.8 | 12.2 | 12.2 | 17.2 | 22.9 | 22.9 | 27.9 |
| Actuated g/C Ratio | 0.06 | 0.47 | | 0.06 | 0.47 | 0.68 | 0.10 | 0.10 | 0.14 | 0.19 | 0.19 | 0.23 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | 6.0 | 6.0 | 6.0 | 6.5 | 6.0 | 6.0 | 6.5 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 2.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.5 |
| Lane Grp Cap (vph) | 103 | 2386 | | 200 | 2411 | 1079 | 349 | 189 | 226 | 320 | 327 | 368 |
| v/s Ratio Prot | 0.02 | 0.41 | | c0.07 | c0.44 | 0.01 | 0.06 | 0.01 | c0.05 | 0.16 | c0.16 | 0.02 |
| v/s Ratio Perm | | | | | | 0.02 | | | 0.12 | | | 0.10 |
| v/c Ratio | 0.42 | 0.86 | | 1.25 | 0.93 | 0.03 | 0.64 | 0.06 | 1.14 | 0.84 | 0.84 | 0.52 |
| Uniform Delay, d1 | 54.5 | 28.0 | | 56.5 | 29.6 | 6.2 | 51.8 | 48.7 | 51.4 | 46.8 | 46.8 | 40.2 |
| Progression Factor | 1.00 | 1.00 | | 1.19 | 0.62 | 0.02 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.0 | 4.4 | | 139.8 | 6.0 | 0.0 | 2.8 | 0.0 | 103.8 | 16.4 | 17.1 | 0.6 |
| Delay (s) | 55.5 | 32.4 | | 207.0 | 24.2 | 0.1 | 54.6 | 48.8 | 155.2 | 63.2 | 63.9 | 40.9 |
| Level of Service | E | C | | F | C | A | D | D | F | E | E | D |
| Approach Delay (s) | | 32.9 | | | 41.7 | | | 113.5 | | | 54.9 | |
| Approach LOS | | C | | | D | | | F | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 47.2 | | | HCM 2000 Level of Service | | | D | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.98 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | Sum of lost time (s) | | | | 23.0 | | | | |
| Intersection Capacity Utilization | | | 83.8% | ICU Level of Service | | | E | | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: Hillsboro Bvd & I-95 SB RAMP














| Lane Group | EBT | EBR | WBT | SBL2 | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 1924 | 747 | 1978 | 574 | 542 |
| v/c Ratio | 0.38 | 0.47 | 0.72 | 0.85 | 0.51 |
| Control Delay | 0.1 | 0.7 | 18.3 | 45.9 | 29.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.1 | 0.7 | 18.3 | 45.9 | 29.5 |
| Queue Length 50th (ft) | 0 | 0 | 246 | 395 | 177 |
| Queue Length 95th (ft) | 0 | m0 | 530 | 499 | 213 |
| Internal Link Dist (ft) | 548 | | 319 | | |
| Turn Bay Length (ft) | | 150 | | | |
| Base Capacity (vph) | 5085 | 1583 | 2757 | 789 | 1242 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.38 | 0.47 | 0.72 | 0.73 | 0.44 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Hillsboro Bvd & I-95 SB RAMP

| |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------|---|---|---|---|---|---|--|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | SBL2 | SBL | SBR | NWL | NWR |
| Lane Configurations | | ↑↑↑ | ↑ | | ↑↑↑ | | ↑ | | ↑↑ | | |
| Traffic Volume (vph) | 0 | 1770 | 710 | 0 | 1820 | 0 | 545 | 0 | 515 | 0 | 0 |
| Future Volume (vph) | 0 | 1770 | 710 | 0 | 1820 | 0 | 545 | 0 | 515 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | | 4.5 | | 4.5 | | 4.5 | | |
| Lane Util. Factor | | 0.91 | 1.00 | | 0.91 | | 1.00 | | 0.88 | | |
| Frt | | 1.00 | 0.85 | | 1.00 | | 1.00 | | 0.85 | | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (prot) | | 5085 | 1583 | | 5085 | | 1770 | | 2787 | | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (perm) | | 5085 | 1583 | | 5085 | | 1770 | | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1924 | 747 | 0 | 1978 | 0 | 574 | 0 | 542 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1924 | 747 | 0 | 1978 | 0 | 574 | 0 | 542 | 0 | 0 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | | NA | Perm | | NA | | Prot | | Prot | | |
| Protected Phases | | Free! | | | 2 | | 8! | | 3 | | |
| Permitted Phases | | | Free | | | | | | | | |
| Actuated Green, G (s) | | 120.0 | 120.0 | | 63.1 | | 43.9 | | 43.9 | | |
| Effective Green, g (s) | | 120.0 | 120.0 | | 65.1 | | 45.9 | | 45.9 | | |
| Actuated g/C Ratio | | 1.00 | 1.00 | | 0.54 | | 0.38 | | 0.38 | | |
| Clearance Time (s) | | | | | 6.5 | | 6.5 | | 6.5 | | |
| Vehicle Extension (s) | | | | | 3.0 | | 2.5 | | 2.5 | | |
| Lane Grp Cap (vph) | | 5085 | 1583 | | 2758 | | 677 | | 1066 | | |
| v/s Ratio Prot | | 0.38 | | | c0.39 | | c0.32 | | 0.19 | | |
| v/s Ratio Perm | | | 0.47 | | | | | | | | |
| v/c Ratio | | 0.38 | 0.47 | | 0.72 | | 0.85 | | 0.51 | | |
| Uniform Delay, d1 | | 0.0 | 0.0 | | 20.6 | | 33.9 | | 28.4 | | |
| Progression Factor | | 1.00 | 1.00 | | 0.78 | | 1.00 | | 1.00 | | |
| Incremental Delay, d2 | | 0.1 | 0.5 | | 1.2 | | 9.5 | | 0.3 | | |
| Delay (s) | | 0.1 | 0.5 | | 17.2 | | 43.4 | | 28.7 | | |
| Level of Service | | A | A | | B | | D | | C | | |
| Approach Delay (s) | | 0.2 | | | 17.2 | | | 36.2 | | 0.0 | |
| Approach LOS | | A | | | B | | | D | | A | |
| Intersection Summary | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 13.0 | | HCM 2000 Level of Service | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.77 | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | | | | 9.0 | | |
| Intersection Capacity Utilization | | | 60.7% | | ICU Level of Service | | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | |
| ! Phase conflict between lane groups. | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | |

Queues

3: I-95 NB Ramp & Hillsboro Blvd



| Lane Group | EBT | WBT | WBR | NBL | NBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 1832 | 2152 | 696 | 685 | 716 |
| v/c Ratio | 0.62 | 0.73 | 0.44 | 0.44 | 0.79 |
| Control Delay | 10.8 | 9.5 | 0.6 | 17.6 | 24.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.8 | 9.5 | 0.6 | 17.6 | 24.9 |
| Queue Length 50th (ft) | 190 | 175 | 0 | 68 | 119 |
| Queue Length 95th (ft) | 190 | m258 | m0 | 96 | #193 |
| Internal Link Dist (ft) | 286 | 371 | | | |
| Turn Bay Length (ft) | | | 250 | 350 | 350 |
| Base Capacity (vph) | 2960 | 2960 | 1568 | 1580 | 926 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.62 | 0.73 | 0.44 | 0.43 | 0.77 |

Intersection Summary













95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.













HCM Signalized Intersection Capacity Analysis

3: I-95 NB Ramp & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | | | ↑↑↑ | ↑ | ↑↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1685 | 0 | 0 | 1980 | 640 | 630 | 0 | 680 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 1685 | 0 | 0 | 1980 | 640 | 630 | 0 | 680 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | 2.0 | 2.0 | | 2.0 | | | |
| Lane Util. Factor | | 0.91 | | | 0.91 | 1.00 | 0.94 | | 0.88 | | | |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 5085 | | | 5085 | 1568 | 4990 | | 2787 | | | |
| Flt Permitted | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 5085 | | | 5085 | 1568 | 4990 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1832 | 0 | 0 | 2152 | 696 | 685 | 0 | 716 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1832 | 0 | 0 | 2152 | 696 | 685 | 0 | 672 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 3% | 2% | 3% | 2% | 3% | 3% | 3% |
| Turn Type | | NA | | | NA | Free | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 4 | | 4 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | | 32.9 | | | 32.9 | 60.0 | 16.6 | | 16.6 | | | |
| Effective Green, g (s) | | 34.9 | | | 34.9 | 60.0 | 18.6 | | 18.6 | | | |
| Actuated g/C Ratio | | 0.58 | | | 0.58 | 1.00 | 0.31 | | 0.31 | | | |
| Clearance Time (s) | | 6.5 | | | 6.5 | | 4.0 | | 4.0 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | | 3.0 | | | |
| Lane Grp Cap (vph) | | 2957 | | | 2957 | 1568 | 1546 | | 863 | | | |
| v/s Ratio Prot | | 0.36 | | | 0.42 | | 0.14 | | 0.24 | | | |
| v/s Ratio Perm | | | | | | 0.44 | | | | | | |
| v/c Ratio | | 0.62 | | | 0.73 | 0.44 | 0.44 | | 0.78 | | | |
| Uniform Delay, d1 | | 8.2 | | | 9.1 | 0.0 | 16.6 | | 18.8 | | | |
| Progression Factor | | 1.18 | | | 0.92 | 1.00 | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 0.9 | | | 1.0 | 0.6 | 0.2 | | 4.5 | | | |
| Delay (s) | | 10.6 | | | 9.3 | 0.6 | 16.8 | | 23.3 | | | |
| Level of Service | | B | | | A | A | B | | C | | | |
| Approach Delay (s) | | 10.6 | | | 7.2 | | | 20.1 | | | 0.0 | |
| Approach LOS | | B | | | A | | | C | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 11.2 | | | HCM 2000 Level of Service | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.74 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | Sum of lost time (s) | | | | 6.5 | | |
| Intersection Capacity Utilization | | | 63.4% | | | ICU Level of Service | | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd































| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 87 | 2207 | 277 | 130 | 2250 | 33 | 288 | 11 | 125 | 120 | 54 | 310 |
| v/c Ratio | 0.43 | 0.77 | 0.29 | 1.01 | 0.76 | 0.03 | 1.14 | 0.04 | 0.36 | 0.44 | 0.19 | 0.85 |
| Control Delay | 63.1 | 16.7 | 4.6 | 136.9 | 22.5 | 0.1 | 141.6 | 39.3 | 7.1 | 42.1 | 42.4 | 46.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.1 | 16.7 | 4.6 | 136.9 | 22.5 | 0.1 | 141.6 | 39.3 | 7.1 | 42.1 | 42.4 | 46.3 |
| Queue Length 50th (ft) | 33 | 387 | 33 | ~103 | 455 | 0 | ~238 | 7 | 0 | 77 | 37 | 129 |
| Queue Length 95th (ft) | m50 | 521 | m103 | #234 | 638 | 0 | #294 | 23 | 36 | 116 | 68 | 215 |
| Internal Link Dist (ft) | | 660 | | | 631 | | | 513 | | | 403 | |
| Turn Bay Length (ft) | 300 | | 150 | 100 | | 200 | 125 | | | | | 340 |
| Base Capacity (vph) | 200 | 2876 | 956 | 129 | 2952 | 978 | 253 | 574 | 588 | 275 | 589 | 600 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.43 | 0.77 | 0.29 | 1.01 | 0.76 | 0.03 | 1.14 | 0.02 | 0.21 | 0.44 | 0.09 | 0.52 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.













HCM Signalized Intersection Capacity Analysis

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    |  |  |    |  |  |  |  |  |   |  |
| Traffic Volume (vph) | 80 | 2030 | 255 | 120 | 2070 | 30 | 265 | 10 | 115 | 110 | 50 | 285 |
| Future Volume (vph) | 80 | 2030 | 255 | 120 | 2070 | 30 | 265 | 10 | 115 | 110 | 50 | 285 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5085 | 1583 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.72 | 1.00 | 1.00 | 0.71 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 1770 | 5085 | 1583 | 1345 | 1863 | 1583 | 1321 | 1863 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 87 | 2207 | 277 | 130 | 2250 | 33 | 288 | 11 | 125 | 120 | 54 | 310 |
| RTOR Reduction (vph) | 0 | 0 | 61 | 0 | 0 | 14 | 0 | 0 | 107 | 0 | 0 | 123 |
| Lane Group Flow (vph) | 87 | 2207 | 216 | 130 | 2250 | 19 | 288 | 11 | 18 | 120 | 54 | 187 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 5.0 | 65.9 | 65.9 | 6.8 | 67.7 | 67.7 | 21.3 | 17.3 | 17.3 | 23.3 | 18.3 | 18.3 |
| Effective Green, g (s) | 7.0 | 67.9 | 67.9 | 8.8 | 69.7 | 69.7 | 21.3 | 17.3 | 17.3 | 23.3 | 18.3 | 18.3 |
| Actuated g/C Ratio | 0.06 | 0.57 | 0.57 | 0.07 | 0.58 | 0.58 | 0.18 | 0.14 | 0.14 | 0.19 | 0.15 | 0.15 |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 2.0 | 3.0 | 3.0 | 1.5 | 3.0 | 3.0 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 200 | 2877 | 895 | 129 | 2953 | 919 | 252 | 268 | 228 | 275 | 284 | 241 |
| v/s Ratio Prot | 0.03 | 0.43 | | c0.07 | c0.44 | | c0.04 | 0.01 | | 0.02 | 0.03 | |
| v/s Ratio Perm | | | 0.14 | | | 0.01 | c0.16 | | 0.01 | 0.07 | | 0.12 |
| v/c Ratio | 0.43 | 0.77 | 0.24 | 1.01 | 0.76 | 0.02 | 1.14 | 0.04 | 0.08 | 0.44 | 0.19 | 0.78 |
| Uniform Delay, d1 | 54.6 | 20.0 | 13.1 | 55.6 | 18.9 | 10.7 | 48.8 | 44.2 | 44.5 | 42.1 | 44.4 | 48.9 |
| Progression Factor | 1.06 | 0.69 | 0.54 | 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 | 0.5 | 81.3 | 1.9 | 0.0 | 100.7 | 0.0 | 0.1 | 0.4 | 0.1 | 13.3 |
| Delay (s) | 58.0 | 15.4 | 7.5 | 136.9 | 20.8 | 10.7 | 149.6 | 44.2 | 44.5 | 42.5 | 44.5 | 62.2 |
| Level of Service | E | B | A | F | C | B | F | D | D | D | D | E |
| Approach Delay (s) | | 16.0 | | | 26.9 | | | 115.9 | | | 55.3 | |
| Approach LOS | | B | | | C | | | F | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 30.9 | HCM 2000 Level of Service | | | | C | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.87 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | Sum of lost time (s) | | | | 21.0 | | | | |
| Intersection Capacity Utilization | | | 86.1% | ICU Level of Service | | | | E | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

1: S Military Trail & SR 869/SW 10th Street

























| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 375 | 1848 | 207 | 418 | 2397 | 500 | 152 | 658 | 332 | 245 | 897 | 495 |
| v/c Ratio | 1.19 | 1.01 | 0.22 | 1.01 | 1.24 | 0.48 | 1.13 | 1.06 | 0.59 | 1.01 | 1.23 | 1.12 |
| Control Delay | 179.2 | 66.9 | 12.0 | 102.3 | 148.3 | 16.0 | 187.2 | 122.1 | 44.6 | 140.6 | 171.8 | 123.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 179.2 | 66.9 | 12.0 | 102.3 | 148.3 | 16.0 | 187.2 | 122.1 | 44.6 | 140.6 | 171.8 | 123.9 |
| Queue Length 50th (ft) | ~274 | ~1204 | 70 | ~269 | ~1834 | 210 | ~106 | ~448 | 265 | ~156 | ~685 | ~528 |
| Queue Length 95th (ft) | #387 | #1332 | 119 | m#328 | #1946 | m263 | #190 | #582 | 379 | #255 | #824 | #771 |
| Internal Link Dist (ft) | | 620 | | | 1082 | | | 569 | | | 457 | |
| Turn Bay Length (ft) | 550 | | 500 | 550 | | 500 | 300 | | 300 | 650 | | 650 |
| Base Capacity (vph) | 314 | 1824 | 945 | 413 | 1926 | 1035 | 135 | 619 | 564 | 242 | 729 | 441 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.19 | 1.01 | 0.22 | 1.01 | 1.24 | 0.48 | 1.13 | 1.06 | 0.59 | 1.01 | 1.23 | 1.12 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: S Military Trail & SR 869/SW 10th Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 345 | 1700 | 190 | 385 | 2205 | 460 | 140 | 605 | 305 | 225 | 825 | 455 |
| Future Volume (vph) | 345 | 1700 | 190 | 385 | 2205 | 460 | 140 | 605 | 305 | 225 | 825 | 455 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.5 | 4.0 | 5.9 | 5.5 | 4.0 | 5.9 | 5.9 | 5.9 | 5.5 | 5.9 | 5.9 | 5.9 |
| Lane Util. Factor | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 375 | 1848 | 207 | 418 | 2397 | 500 | 152 | 658 | 332 | 245 | 897 | 495 |
| RTOR Reduction (vph) | 0 | 0 | 33 | 0 | 0 | 29 | 0 | 0 | 46 | 0 | 0 | 115 |
| Lane Group Flow (vph) | 375 | 1848 | 174 | 418 | 2397 | 471 | 152 | 658 | 286 | 245 | 897 | 380 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | Perm |
| Protected Phases | 1 | 6 | 7 | 5 | 2 | 3 | 7 | 4 | 5 | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | | | 4 | | | 8 |
| Actuated Green, G (s) | 14.5 | 90.8 | 95.9 | 19.7 | 96.0 | 106.7 | 5.1 | 29.5 | 49.2 | 10.7 | 35.1 | 35.1 |
| Effective Green, g (s) | 16.5 | 92.8 | 99.9 | 21.7 | 98.0 | 110.7 | 7.1 | 31.5 | 53.2 | 12.7 | 37.1 | 37.1 |
| Actuated g/C Ratio | 0.09 | 0.52 | 0.56 | 0.12 | 0.54 | 0.62 | 0.04 | 0.18 | 0.30 | 0.07 | 0.21 | 0.21 |
| Clearance Time (s) | 7.5 | 6.0 | 7.9 | 7.5 | 6.0 | 7.9 | 7.9 | 7.9 | 7.5 | 7.9 | 7.9 | 7.9 |
| Vehicle Extension (s) | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 314 | 1824 | 878 | 413 | 1926 | 973 | 135 | 619 | 467 | 242 | 729 | 326 |
| v/s Ratio Prot | 0.11 | 0.52 | 0.01 | c0.12 | c0.68 | 0.03 | 0.04 | 0.19 | 0.07 | c0.07 | c0.25 | |
| v/s Ratio Perm | | | 0.10 | | | 0.26 | | | 0.11 | | | 0.24 |
| v/c Ratio | 1.19 | 1.01 | 0.20 | 1.01 | 1.24 | 0.48 | 1.13 | 1.06 | 0.61 | 1.01 | 1.23 | 1.17 |
| Uniform Delay, d1 | 81.8 | 43.6 | 20.0 | 79.2 | 41.0 | 19.0 | 86.5 | 74.2 | 54.5 | 83.7 | 71.5 | 71.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.01 | 1.06 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 114.4 | 24.4 | 0.0 | 33.0 | 112.2 | 0.1 | 115.3 | 54.1 | 1.7 | 61.1 | 115.5 | 102.6 |
| Delay (s) | 196.1 | 68.0 | 20.1 | 104.7 | 153.5 | 20.3 | 201.7 | 128.3 | 56.2 | 144.7 | 187.0 | 174.1 |
| Level of Service | F | E | C | F | F | C | F | F | E | F | F | F |
| Approach Delay (s) | | 83.7 | | | 127.3 | | | 117.1 | | | 176.7 | |
| Approach LOS | | F | | | F | | | F | | | F | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 123.0 | | | HCM 2000 Level of Service | | | F | | | |
| HCM 2000 Volume to Capacity ratio | | | 1.25 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | Sum of lost time (s) | | | 21.3 | | | |
| Intersection Capacity Utilization | | | 115.5% | | | ICU Level of Service | | | H | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Queues

2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBT | SBR |
|-------------------------|------|------|------|-------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 76 | 2348 | 109 | 2598 | 87 | 178 | 175 | 418 | 103 | 375 |
| v/c Ratio | 0.68 | 0.69 | 0.57 | 0.92 | 0.10 | 0.59 | 0.58 | 0.88 | 0.56 | 0.88 |
| Control Delay | 79.5 | 18.7 | 94.5 | 32.2 | 2.7 | 76.3 | 75.7 | 69.9 | 87.3 | 75.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 79.5 | 18.7 | 94.5 | 32.6 | 2.7 | 76.3 | 75.7 | 69.9 | 87.3 | 75.7 |
| Queue Length 50th (ft) | 45 | 296 | 64 | 912 | 2 | 205 | 201 | 387 | 117 | 192 |
| Queue Length 95th (ft) | m49 | m297 | m84 | m1032 | m12 | 300 | 295 | #579 | 188 | #290 |
| Internal Link Dist (ft) | | 818 | | 925 | | | 695 | | 185 | |
| Turn Bay Length (ft) | 700 | | 750 | | 750 | | | 150 | | |
| Base Capacity (vph) | 112 | 3413 | 190 | 2832 | 889 | 308 | 309 | 470 | 189 | 435 |
| Starvation Cap Reductn | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.68 | 0.69 | 0.57 | 0.93 | 0.10 | 0.58 | 0.57 | 0.89 | 0.54 | 0.86 |

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

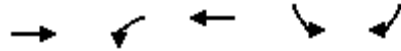
HCM Signalized Intersection Capacity Analysis

2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  | |  |  |
| Traffic Volume (vph) | 70 | 2095 | 65 | 100 | 2390 | 80 | 315 | 10 | 385 | 90 | 5 | 345 |
| Future Volume (vph) | 70 | 2095 | 65 | 100 | 2390 | 80 | 315 | 10 | 385 | 90 | 5 | 345 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.86 | | 0.97 | 0.91 | 1.00 | 0.95 | 0.95 | 1.00 | | 1.00 | 0.88 |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 0.96 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (prot) | 3367 | 6379 | | 3433 | 5085 | 1524 | 1681 | 1690 | 1583 | | 1547 | 2030 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 0.96 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (perm) | 3367 | 6379 | | 3433 | 5085 | 1524 | 1681 | 1690 | 1583 | | 1547 | 2030 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 76 | 2277 | 71 | 109 | 2598 | 87 | 342 | 11 | 418 | 98 | 5 | 375 |
| RTOR Reduction (vph) | 0 | 2 | 0 | 0 | 0 | 39 | 0 | 0 | 68 | 0 | 0 | 75 |
| Lane Group Flow (vph) | 76 | 2346 | 0 | 109 | 2598 | 48 | 178 | 175 | 350 | 0 | 103 | 300 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 6% | 2% | 2% | 2% | 18% | 2% | 40% |
| Turn Type | Prot | NA | | Prot | NA | Prot | Split | NA | pt+ov | Split | NA | pt+ov |
| Protected Phases | 1 | 6 | | 5 | 2 | 2 | 3 | 3 | 3 5 | 4 | 4 | 4 1 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | 4.0 | 94.3 | | 8.0 | 98.3 | 98.3 | 32.4 | 32.4 | 46.4 | | 21.3 | 31.3 |
| Effective Green, g (s) | 6.0 | 96.3 | | 10.0 | 100.3 | 100.3 | 32.4 | 32.4 | 46.4 | | 21.3 | 31.3 |
| Actuated g/C Ratio | 0.03 | 0.53 | | 0.06 | 0.56 | 0.56 | 0.18 | 0.18 | 0.26 | | 0.12 | 0.17 |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 112 | 3412 | | 190 | 2833 | 849 | 302 | 304 | 408 | | 183 | 352 |
| v/s Ratio Prot | 0.02 | 0.37 | | 0.03 | c0.51 | 0.03 | 0.11 | 0.10 | c0.22 | | 0.07 | c0.15 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | 0.68 | 0.69 | | 0.57 | 0.92 | 0.06 | 0.59 | 0.58 | 0.86 | | 0.56 | 0.85 |
| Uniform Delay, d1 | 86.0 | 30.8 | | 82.9 | 36.1 | 18.2 | 67.7 | 67.5 | 63.7 | | 75.0 | 72.1 |
| Progression Factor | 0.81 | 0.59 | | 1.04 | 0.77 | 0.90 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Incremental Delay, d2 | 4.0 | 0.4 | | 2.1 | 3.9 | 0.1 | 2.9 | 2.6 | 16.3 | | 3.9 | 17.7 |
| Delay (s) | 73.7 | 18.5 | | 88.6 | 31.7 | 16.4 | 70.6 | 70.1 | 79.9 | | 78.9 | 89.8 |
| Level of Service | E | B | | F | C | B | E | E | E | | E | F |
| Approach Delay (s) | | 20.2 | | | 33.4 | | | 75.6 | | | 87.4 | |
| Approach LOS | | C | | | C | | | E | | | F | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 37.5 | | | | HCM 2000 Level of Service | | | D | | |
| HCM 2000 Volume to Capacity ratio | | | 0.95 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | | Sum of lost time (s) | | | 22.0 | | |
| Intersection Capacity Utilization | | | 84.1% | | | | ICU Level of Service | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

3: SR 869/SW 10th Street & I-95 SB Off-Ramp




















| Lane Group | EBT | WBL | WBT | SBL | SBR |
|-------------------------|--------|------|------|------|-------|
| Lane Group Flow (vph) | 2771 | 605 | 1674 | 232 | 1084 |
| v/c Ratio | 1.21dr | 0.72 | 0.54 | 0.20 | 1.16 |
| Control Delay | 110.4 | 50.2 | 9.3 | 43.1 | 133.7 |
| Queue Delay | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| Total Delay | 110.4 | 50.2 | 9.6 | 43.1 | 133.7 |
| Queue Length 50th (ft) | ~933 | 219 | 175 | 101 | -853 |
| Queue Length 95th (ft) | #976 | 286 | 174 | 138 | #1005 |
| Internal Link Dist (ft) | 925 | | 295 | | |
| Turn Bay Length (ft) | | 500 | | 500 | 500 |
| Base Capacity (vph) | 2413 | 839 | 3121 | 1155 | 938 |
| Starvation Cap Reductn | 0 | 0 | 624 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 305 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.15 | 0.72 | 0.67 | 0.20 | 1.16 |

Intersection Summary

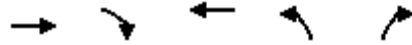
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

HCM Signalized Intersection Capacity Analysis

3: SR 869/SW 10th Street & I-95 SB Off-Ramp

| |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  | | | | |  | |  |
| Traffic Volume (vph) | 0 | 1925 | 645 | 575 | 1540 | 0 | 0 | 0 | 0 | 220 | 0 | 1030 |
| Future Volume (vph) | 0 | 1925 | 645 | 575 | 1540 | 0 | 0 | 0 | 0 | 220 | 0 | 1030 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.0 | | 4.0 | 4.5 | | | | | 4.4 | | 4.4 |
| Lane Util. Factor | | 0.81 | | 0.97 | 0.91 | | | | | 0.97 | | 0.88 |
| Frt | | 0.96 | | 1.00 | 1.00 | | | | | 1.00 | | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | 0.95 | | 1.00 |
| Satd. Flow (prot) | | 7267 | | 3433 | 5085 | | | | | 3433 | | 2787 |
| Flt Permitted | | 1.00 | | 0.95 | 1.00 | | | | | 0.95 | | 1.00 |
| Satd. Flow (perm) | | 7267 | | 3433 | 5085 | | | | | 3433 | | 2787 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.95 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 2092 | 679 | 605 | 1674 | 0 | 0 | 0 | 0 | 232 | 0 | 1084 |
| RTOR Reduction (vph) | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2739 | 0 | 605 | 1674 | 0 | 0 | 0 | 0 | 232 | 0 | 1084 |
| Turn Type | | NA | | Prot | NA | | | | | Prot | | Prot |
| Protected Phases | | 6 | | 5 4 | 2 4 | | | | | 3 | | 3 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 57.0 | | 39.6 | 108.5 | | | | | 58.6 | | 58.6 |
| Effective Green, g (s) | | 59.0 | | 43.6 | 106.1 | | | | | 60.6 | | 60.6 |
| Actuated g/C Ratio | | 0.33 | | 0.24 | 0.59 | | | | | 0.34 | | 0.34 |
| Clearance Time (s) | | 6.0 | | | | | | | | 6.4 | | 6.4 |
| Vehicle Extension (s) | | 3.0 | | | | | | | | 2.0 | | 2.0 |
| Lane Grp Cap (vph) | | 2381 | | 831 | 2997 | | | | | 1155 | | 938 |
| v/s Ratio Prot | | c0.38 | | c0.18 | 0.33 | | | | | 0.07 | | c0.39 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 1.21dr | | 0.73 | 0.56 | | | | | 0.20 | | 1.16 |
| Uniform Delay, d1 | | 60.5 | | 62.7 | 22.6 | | | | | 42.5 | | 59.7 |
| Progression Factor | | 0.74 | | 1.22 | 0.43 | | | | | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 71.4 | | 2.9 | 0.2 | | | | | 0.0 | | 82.2 |
| Delay (s) | | 116.0 | | 79.2 | 10.0 | | | | | 42.5 | | 141.9 |
| Level of Service | | F | | E | B | | | | | D | | F |
| Approach Delay (s) | | 116.0 | | | 28.4 | | | 0.0 | | | 124.4 | |
| Approach LOS | | F | | | C | | | A | | | | F |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 86.4 | | | HCM 2000 Level of Service | | | | F | | |
| HCM 2000 Volume to Capacity ratio | | | 1.04 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | Sum of lost time (s) | | | | 16.8 | | |
| Intersection Capacity Utilization | | | 73.2% | | | ICU Level of Service | | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| dr Defacto Right Lane. Recode with 1 though lane as a right lane. | | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues



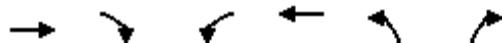
| Lane Group | EBT | EBR | WBT | NBL | NBR |
|-------------------------|------|------|------|------|-------|
| Lane Group Flow (vph) | 1397 | 905 | 1886 | 716 | 653 |
| v/c Ratio | 0.41 | 0.32 | 0.32 | 0.82 | 1.03 |
| Control Delay | 3.8 | 0.3 | 5.8 | 80.0 | 114.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 3.8 | 0.3 | 5.8 | 80.0 | 114.3 |
| Queue Length 50th (ft) | 117 | 0 | 133 | 293 | -360 |
| Queue Length 95th (ft) | m105 | m0 | 59 | 345 | #471 |
| Internal Link Dist (ft) | 260 | | 630 | 1225 | |
| Turn Bay Length (ft) | | 700 | | 410 | 430 |
| Base Capacity (vph) | 3390 | 2787 | 5846 | 876 | 633 |
| Starvation Cap Reductn | 244 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.44 | 0.32 | 0.32 | 0.82 | 1.03 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

4: I-95 NB On/Off-Ramp & SR 869/SW 10th Street



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|-------|-------|------|-------|------|-------|
| Lane Configurations | ↑↑↑ | ↗↘ | | ↑↑↑↑ | ↖↗ | ↗↘ |
| Traffic Volume (vph) | 1285 | 860 | 0 | 1735 | 680 | 620 |
| Future Volume (vph) | 1285 | 860 | 0 | 1735 | 680 | 620 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 2.0 | | 4.5 | 4.4 | 4.4 |
| Lane Util. Factor | 0.91 | 0.88 | | 0.81 | 0.94 | 0.76 |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 5085 | 2787 | | 7544 | 4990 | 3610 |
| Flt Permitted | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 5085 | 2787 | | 7544 | 4990 | 3610 |
| Peak-hour factor, PHF | 0.92 | 0.95 | 0.92 | 0.92 | 0.95 | 0.95 |
| Adj. Flow (vph) | 1397 | 905 | 0 | 1886 | 716 | 653 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 1397 | 905 | 0 | 1886 | 716 | 653 |
| Turn Type | NA | Free | | NA | Prot | Prot |
| Protected Phases | 6 3 | | | 2 3 | 4 | 4 |
| Permitted Phases | | Free | | | | |
| Actuated Green, G (s) | 115.6 | 180.0 | | 137.6 | 29.6 | 29.6 |
| Effective Green, g (s) | 119.6 | 180.0 | | 139.6 | 31.6 | 31.6 |
| Actuated g/C Ratio | 0.66 | 1.00 | | 0.78 | 0.18 | 0.18 |
| Clearance Time (s) | | | | | 6.4 | 6.4 |
| Vehicle Extension (s) | | | | | 3.5 | 3.5 |
| Lane Grp Cap (vph) | 3378 | 2787 | | 5850 | 876 | 633 |
| v/s Ratio Prot | c0.27 | | | 0.25 | 0.14 | c0.18 |
| v/s Ratio Perm | | c0.32 | | | | |
| v/c Ratio | 0.41 | 0.32 | | 0.32 | 0.82 | 1.03 |
| Uniform Delay, d1 | 14.0 | 0.0 | | 6.0 | 71.4 | 74.2 |
| Progression Factor | 0.48 | 1.00 | | 0.94 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.0 | 0.0 | | 0.0 | 6.1 | 44.1 |
| Delay (s) | 6.8 | 0.0 | | 5.7 | 77.5 | 118.3 |
| Level of Service | A | A | | A | E | F |
| Approach Delay (s) | 4.1 | | | 5.7 | 97.0 | |
| Approach LOS | A | | | A | F | |













Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 27.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.54 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 55.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Queues

5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

























| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 277 | 1554 | 239 | 207 | 1250 | 120 | 266 | 98 | 120 | 239 | 245 | 370 |
| v/c Ratio | 0.76 | 0.62 | 0.27 | 0.70 | 0.52 | 0.15 | 0.82 | 0.14 | 0.29 | 0.61 | 0.81 | 0.86 |
| Control Delay | 98.9 | 25.5 | 4.9 | 93.2 | 35.7 | 4.9 | 64.6 | 56.6 | 9.3 | 52.6 | 92.6 | 50.5 |
| Queue Delay | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 98.9 | 25.8 | 4.9 | 93.2 | 35.7 | 4.9 | 64.6 | 56.6 | 9.3 | 52.6 | 92.6 | 50.5 |
| Queue Length 50th (ft) | 177 | 364 | 12 | 124 | 387 | 0 | 241 | 50 | 0 | 213 | 284 | 202 |
| Queue Length 95th (ft) | m187 | m385 | m48 | 173 | 488 | 43 | 300 | 73 | 55 | 269 | 365 | 320 |
| Internal Link Dist (ft) | | 630 | | | 1233 | | | 1112 | | | 1327 | |
| Turn Bay Length (ft) | 300 | | 300 | 200 | | 300 | 260 | | 260 | 170 | | 170 |
| Base Capacity (vph) | 400 | 2514 | 875 | 316 | 2407 | 814 | 343 | 1008 | 536 | 397 | 437 | 531 |
| Starvation Cap Reductn | 0 | 319 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.69 | 0.71 | 0.27 | 0.66 | 0.52 | 0.15 | 0.78 | 0.10 | 0.22 | 0.60 | 0.56 | 0.70 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 255 | 1430 | 220 | 190 | 1150 | 110 | 245 | 90 | 110 | 220 | 225 | 340 |
| Future Volume (vph) | 255 | 1430 | 220 | 190 | 1150 | 110 | 245 | 90 | 110 | 220 | 225 | 340 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.19 | 1.00 | 1.00 | 0.69 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 361 | 3539 | 1583 | 1286 | 1863 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 277 | 1554 | 239 | 207 | 1250 | 120 | 266 | 98 | 120 | 239 | 245 | 370 |
| RTOR Reduction (vph) | 0 | 0 | 93 | 0 | 0 | 63 | 0 | 0 | 95 | 0 | 0 | 174 |
| Lane Group Flow (vph) | 277 | 1554 | 146 | 207 | 1250 | 57 | 266 | 98 | 25 | 239 | 245 | 196 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 17.2 | 86.9 | 86.9 | 13.5 | 83.2 | 83.2 | 61.1 | 36.8 | 36.8 | 47.8 | 29.2 | 29.2 |
| Effective Green, g (s) | 19.2 | 88.9 | 88.9 | 15.5 | 85.2 | 85.2 | 61.1 | 36.8 | 36.8 | 47.8 | 29.2 | 29.2 |
| Actuated g/C Ratio | 0.11 | 0.49 | 0.49 | 0.09 | 0.47 | 0.47 | 0.34 | 0.20 | 0.20 | 0.27 | 0.16 | 0.16 |
| Clearance Time (s) | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | 1.5 | 3.0 | 3.0 | 1.5 | 3.0 | 3.0 | 1.5 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 366 | 2511 | 781 | 295 | 2406 | 749 | 327 | 723 | 323 | 391 | 302 | 256 |
| v/s Ratio Prot | c0.08 | c0.31 | | 0.06 | 0.25 | | c0.12 | 0.03 | | 0.06 | 0.13 | |
| v/s Ratio Perm | | | 0.09 | | | 0.04 | c0.16 | | 0.02 | 0.10 | | 0.12 |
| v/c Ratio | 0.76 | 0.62 | 0.19 | 0.70 | 0.52 | 0.08 | 0.81 | 0.14 | 0.08 | 0.61 | 0.81 | 0.76 |
| Uniform Delay, d1 | 78.1 | 33.2 | 25.4 | 80.0 | 33.1 | 25.9 | 48.3 | 58.6 | 57.9 | 56.2 | 72.7 | 72.1 |
| Progression Factor | 1.12 | 0.70 | 0.54 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 6.3 | 0.9 | 0.4 | 6.0 | 0.8 | 0.2 | 13.6 | 0.0 | 0.0 | 2.0 | 14.4 | 11.5 |
| Delay (s) | 94.1 | 24.3 | 14.2 | 86.0 | 33.9 | 26.1 | 61.9 | 58.6 | 57.9 | 58.2 | 87.2 | 83.6 |
| Level of Service | F | C | B | F | C | C | E | E | E | E | F | F |
| Approach Delay (s) | | 32.5 | | | 40.2 | | | 60.2 | | | 77.5 | |
| Approach LOS | | C | | | D | | | E | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 45.3 | | | HCM 2000 Level of Service | | D | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.72 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | Sum of lost time (s) | | 20.2 | | | | |
| Intersection Capacity Utilization | | | 75.3% | | | ICU Level of Service | | D | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Queues

1: NW 5th Terr & Sample Road

| | → | ↙ | ← | ↘ | ↗ |
|-------------------------|------|-------|------|------|------|
| Lane Group | EBT | WBL | WBT | NBL | NBR |
| Lane Group Flow (vph) | 2544 | 261 | 2288 | 114 | 120 |
| v/c Ratio | 0.58 | 1.04 | 0.58 | 0.63 | 0.45 |
| Control Delay | 16.9 | 119.3 | 2.1 | 66.6 | 13.7 |
| Queue Delay | 0.0 | 20.3 | 0.1 | 0.0 | 0.0 |
| Total Delay | 16.9 | 139.7 | 2.3 | 66.6 | 13.7 |
| Queue Length 50th (ft) | 290 | ~191 | 48 | 86 | 0 |
| Queue Length 95th (ft) | 355 | #380 | 30 | 142 | 54 |
| Internal Link Dist (ft) | 575 | | 175 | 531 | |
| Turn Bay Length (ft) | | | | | |
| Base Capacity (vph) | 4365 | 250 | 3929 | 545 | 571 |
| Starvation Cap Reductn | 0 | 24 | 541 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.58 | 1.15 | 0.68 | 0.21 | 0.21 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

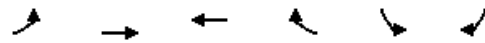
1: NW 5th Terr & Sample Road

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------|------|-------|-------|---------------------------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | > | | ↘ | > | ↘ | ↗ |
| Traffic Volume (vph) | 2260 | 80 | 240 | 2105 | 105 | 110 |
| Future Volume (vph) | 2260 | 80 | 240 | 2105 | 105 | 110 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | | 6.0 | 6.0 | 9.0 | 9.0 |
| Lane Util. Factor | 0.81 | | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | 0.99 | | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 7505 | | 1770 | 5085 | 1770 | 1583 |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 7505 | | 1770 | 5085 | 1770 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2457 | 87 | 261 | 2288 | 114 | 120 |
| RTOR Reduction (vph) | 3 | 0 | 0 | 0 | 0 | 108 |
| Lane Group Flow (vph) | 2541 | 0 | 261 | 2288 | 114 | 12 |
| Turn Type | NA | | Prot | NA | Prot | Perm |
| Protected Phases | 2 3 | | 1 | 1 2 3 | 4 | |
| Permitted Phases | | | | | 4 | 4 |
| Actuated Green, G (s) | 67.7 | | 15.0 | 90.7 | 12.3 | 12.3 |
| Effective Green, g (s) | 69.7 | | 17.0 | 92.7 | 12.3 | 12.3 |
| Actuated g/C Ratio | 0.58 | | 0.14 | 0.77 | 0.10 | 0.10 |
| Clearance Time (s) | | | 8.0 | | 9.0 | 9.0 |
| Vehicle Extension (s) | | | 1.5 | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 4359 | | 250 | 3928 | 181 | 162 |
| v/s Ratio Prot | c0.34 | | c0.15 | c0.45 | c0.06 | |
| v/s Ratio Perm | | | | | | 0.01 |
| v/c Ratio | 0.58 | | 1.04 | 0.58 | 0.63 | 0.08 |
| Uniform Delay, d1 | 15.9 | | 51.5 | 5.6 | 51.7 | 48.7 |
| Progression Factor | 1.00 | | 1.14 | 0.27 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.1 | | 63.7 | 0.1 | 4.9 | 0.1 |
| Delay (s) | 16.1 | | 122.2 | 1.6 | 56.5 | 48.8 |
| Level of Service | B | | F | A | E | D |
| Approach Delay (s) | 16.1 | | | 14.0 | 52.6 | |
| Approach LOS | B | | | B | D | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 16.7 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.73 | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | 27.0 |
| Intersection Capacity Utilization | | | 63.9% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

Queues

2: Sample Road & NW 5th Ave






















| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 179 | 2397 | 2391 | 272 | 185 | 158 |
| v/c Ratio | 1.10 | 0.48 | 0.59 | 0.25 | 0.53 | 0.52 |
| Control Delay | 134.3 | 2.0 | 10.6 | 0.9 | 55.9 | 13.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| Total Delay | 134.3 | 2.0 | 10.6 | 0.9 | 55.9 | 13.8 |
| Queue Length 50th (ft) | ~158 | 23 | 283 | 1 | 71 | 0 |
| Queue Length 95th (ft) | #309 | 35 | 382 | m6 | 104 | 61 |
| Internal Link Dist (ft) | | 175 | 1004 | | 271 | |
| Turn Bay Length (ft) | | | | 450 | | |
| Base Capacity (vph) | 162 | 4952 | 4044 | 1099 | 1058 | 597 |
| Starvation Cap Reductn | 0 | 589 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 156 | 0 | 0 | 57 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.10 | 0.55 | 0.61 | 0.25 | 0.17 | 0.29 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Sample Road & NW 5th Ave

| |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|--|--|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
| Lane Configurations |  |    |    |  |   |   |  |
| Traffic Volume (vph) | 165 | 2205 | 2200 | 250 | 170 | 145 | |
| Future Volume (vph) | 165 | 2205 | 2200 | 250 | 170 | 145 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 9.0 | 9.0 | |
| Lane Util. Factor | 1.00 | 0.86 | 0.86 | 1.00 | 0.97 | 1.00 | |
| Frt | 1.00 | 1.00 | 1.00 | 0.85 | 1.00 | 0.85 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1770 | 6408 | 6408 | 1583 | 3433 | 1583 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1770 | 6408 | 6408 | 1583 | 3433 | 1583 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 179 | 2397 | 2391 | 272 | 185 | 158 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 100 | 0 | 142 | |
| Lane Group Flow (vph) | 179 | 2397 | 2391 | 172 | 185 | 16 | |
| Turn Type | Prot | NA | NA | Perm | Prot | Perm | |
| Protected Phases | 3 | 1 2 3 | 1 2 | | 4 | | |
| Permitted Phases | | | | 1 2 | | 4 | |
| Actuated Green, G (s) | 9.0 | 90.7 | 73.7 | 73.7 | 12.3 | 12.3 | |
| Effective Green, g (s) | 11.0 | 92.7 | 75.7 | 75.7 | 12.3 | 12.3 | |
| Actuated g/C Ratio | 0.09 | 0.77 | 0.63 | 0.63 | 0.10 | 0.10 | |
| Clearance Time (s) | 8.0 | | | | 9.0 | 9.0 | |
| Vehicle Extension (s) | 1.5 | | | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 162 | 4950 | 4042 | 998 | 351 | 162 | |
| v/s Ratio Prot | c0.10 | 0.37 | c0.37 | | c0.05 | | |
| v/s Ratio Perm | | | | 0.11 | | 0.01 | |
| v/c Ratio | 1.10 | 0.48 | 0.59 | 0.17 | 0.53 | 0.10 | |
| Uniform Delay, d1 | 54.5 | 5.0 | 13.0 | 9.2 | 51.1 | 48.8 | |
| Progression Factor | 0.72 | 0.32 | 0.75 | 0.40 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 95.4 | 0.0 | 0.1 | 0.0 | 0.7 | 0.1 | |
| Delay (s) | 134.4 | 1.6 | 9.9 | 3.7 | 51.8 | 48.9 | |
| Level of Service | F | A | A | A | D | D | |
| Approach Delay (s) | | 10.9 | 9.3 | | 50.5 | | |
| Approach LOS | | B | A | | D | | |
| Intersection Summary | | | | | | | |
| HCM 2000 Control Delay | | | 12.5 | | HCM 2000 Level of Service | B | |
| HCM 2000 Volume to Capacity ratio | | | 0.68 | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | 27.0 | |
| Intersection Capacity Utilization | | | 63.5% | | ICU Level of Service | B | |
| Analysis Period (min) | | | 15 | | | | |

c Critical Lane Group

Queues

3: Sample Road & I-95 SB RAMP












| | → | ↘ | ← | ↙ | ↗ |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | EBR | WBT | SBL2 | SBR |
| Lane Group Flow (vph) | 1908 | 653 | 1957 | 484 | 684 |
| v/c Ratio | 0.54 | 0.41 | 0.69 | 0.54 | 0.94 |
| Control Delay | 6.4 | 1.5 | 8.8 | 21.7 | 45.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.4 | 1.5 | 8.8 | 21.7 | 45.7 |
| Queue Length 50th (ft) | 102 | 6 | 123 | 77 | 137 |
| Queue Length 95th (ft) | 187 | 37 | 167 | 118 | #243 |
| Internal Link Dist (ft) | 1004 | | 259 | | |
| Turn Bay Length (ft) | | 250 | | | |
| Base Capacity (vph) | 3556 | 1583 | 2822 | 898 | 729 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.41 | 0.69 | 0.54 | 0.94 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Sample Road & I-95 SB RAMP

| |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | SBL2 | SBL | SBR | NWL | NWR |
| Lane Configurations | | ↑↑↑ | ↑ | | ↑↑↑ | | ↑↑ | | ↑↑ | | |
| Traffic Volume (vph) | 0 | 1755 | 620 | 0 | 1800 | 0 | 460 | 0 | 650 | 0 | 0 |
| Future Volume (vph) | 0 | 1755 | 620 | 0 | 1800 | 0 | 460 | 0 | 650 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 5.5 | 2.0 | | 5.5 | | 5.5 | | 5.5 | | |
| Lane Util. Factor | | 0.86 | 1.00 | | 0.91 | | 0.97 | | 0.88 | | |
| Frt | | 1.00 | 0.85 | | 1.00 | | 1.00 | | 0.85 | | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (prot) | | 6408 | 1583 | | 5085 | | 3433 | | 2787 | | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (perm) | | 6408 | 1583 | | 5085 | | 3433 | | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1908 | 653 | 0 | 1957 | 0 | 484 | 0 | 684 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1908 | 653 | 0 | 1957 | 0 | 484 | 0 | 684 | 0 | 0 |
| Turn Type | | NA | Free | | NA | | Prot | | Prot | | |
| Protected Phases | | 6 | | | 2 | | 3 | | 3 | | |
| Permitted Phases | | | Free | | | | | | | | |
| Actuated Green, G (s) | | 31.3 | 60.0 | | 31.3 | | 13.7 | | 13.7 | | |
| Effective Green, g (s) | | 33.3 | 60.0 | | 33.3 | | 15.7 | | 15.7 | | |
| Actuated g/C Ratio | | 0.55 | 1.00 | | 0.55 | | 0.26 | | 0.26 | | |
| Clearance Time (s) | | 7.5 | | | 7.5 | | 7.5 | | 7.5 | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 2.5 | | 2.5 | | |
| Lane Grp Cap (vph) | | 3556 | 1583 | | 2822 | | 898 | | 729 | | |
| v/s Ratio Prot | | 0.30 | | | c0.38 | | 0.14 | | c0.25 | | |
| v/s Ratio Perm | | | 0.41 | | | | | | | | |
| v/c Ratio | | 0.54 | 0.41 | | 0.69 | | 0.54 | | 0.94 | | |
| Uniform Delay, d1 | | 8.5 | 0.0 | | 9.7 | | 19.0 | | 21.7 | | |
| Progression Factor | | 0.69 | 1.00 | | 0.79 | | 1.00 | | 1.00 | | |
| Incremental Delay, d2 | | 0.5 | 0.7 | | 1.1 | | 0.5 | | 19.6 | | |
| Delay (s) | | 6.4 | 0.7 | | 8.7 | | 19.5 | | 41.2 | | |
| Level of Service | | A | A | | A | | B | | D | | |
| Approach Delay (s) | | 4.9 | | | 8.7 | | | 32.2 | | 0.0 | |
| Approach LOS | | A | | | A | | | C | | A | |
| Intersection Summary | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 11.8 | | | | HCM 2000 Level of Service | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.77 | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | | Sum of lost time (s) | | 11.0 | | |
| Intersection Capacity Utilization | | | 66.7% | | | | ICU Level of Service | | C | | |
| Analysis Period (min) | | | 15 | | | | | | | | |

c Critical Lane Group

Queues

4: I-95 NB RAMP & Sample Road













| | → | ← | ↖ | ↗ | |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | WBT | WBR | NBL2 | NBR |
| Lane Group Flow (vph) | 1723 | 1717 | 358 | 1074 | 579 |
| v/c Ratio | 0.65 | 0.65 | 0.23 | 0.80 | 0.53 |
| Control Delay | 16.5 | 11.6 | 0.2 | 37.4 | 29.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 16.5 | 11.6 | 0.2 | 37.4 | 29.6 |
| Queue Length 50th (ft) | 352 | 139 | 0 | 372 | 192 |
| Queue Length 95th (ft) | 358 | m147 | m0 | 416 | 230 |
| Internal Link Dist (ft) | 270 | 1155 | | | |
| Turn Bay Length (ft) | | | 250 | | |
| Base Capacity (vph) | 2638 | 2638 | 1583 | 1530 | 1242 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.65 | 0.65 | 0.23 | 0.70 | 0.47 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis











4: I-95 NB RAMP & Sample Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL2 | NBL | NBR | SEL | SER | |
| Lane Configurations | | ↑↑↑ | | | ↑↑↑ | ↑ | ↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1585 | 0 | 0 | 1580 | 340 | 1020 | 0 | 550 | 0 | 0 | |
| Future Volume (vph) | 0 | 1585 | 0 | 0 | 1580 | 340 | 1020 | 0 | 550 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | 5.5 | | | 5.5 | 2.0 | 5.5 | | 5.5 | | | |
| Lane Util. Factor | | 0.91 | | | 0.91 | 1.00 | 0.97 | | 0.88 | | | |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 5085 | | | 5085 | 1583 | 3433 | | 2787 | | | |
| Flt Permitted | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 5085 | | | 5085 | 1583 | 3433 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 1723 | 0 | 0 | 1717 | 358 | 1074 | 0 | 579 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 1723 | 0 | 0 | 1717 | 358 | 1074 | 0 | 579 | 0 | 0 | |
| Turn Type | | NA | | | NA | Free | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 4 | | 4 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | | 60.3 | | | 60.3 | 120.0 | 44.7 | | 44.7 | | | |
| Effective Green, g (s) | | 62.3 | | | 62.3 | 120.0 | 46.7 | | 46.7 | | | |
| Actuated g/C Ratio | | 0.52 | | | 0.52 | 1.00 | 0.39 | | 0.39 | | | |
| Clearance Time (s) | | 7.5 | | | 7.5 | | 7.5 | | 7.5 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 2.5 | | 2.5 | | | |
| Lane Grp Cap (vph) | | 2639 | | | 2639 | 1583 | 1336 | | 1084 | | | |
| v/s Ratio Prot | | c0.34 | | | 0.34 | | c0.31 | | 0.21 | | | |
| v/s Ratio Perm | | | | | | 0.23 | | | | | | |
| v/c Ratio | | 0.65 | | | 0.65 | 0.23 | 0.80 | | 0.53 | | | |
| Uniform Delay, d1 | | 21.0 | | | 20.9 | 0.0 | 32.6 | | 28.3 | | | |
| Progression Factor | | 0.70 | | | 0.49 | 1.00 | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 1.1 | | | 0.8 | 0.2 | 3.5 | | 0.4 | | | |
| Delay (s) | | 15.8 | | | 11.1 | 0.2 | 36.1 | | 28.7 | | | |
| Level of Service | | B | | | B | A | D | | C | | | |
| Approach Delay (s) | | 15.8 | | | 9.2 | | | 33.5 | | 0.0 | | |
| Approach LOS | | B | | | A | | | C | | A | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 18.6 | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.72 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | | | | | | Sum of lost time (s) | 11.0 |
| Intersection Capacity Utilization | | | 59.0% | | | | | | | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Queues

5: NE 3rd Ave & Sample Road




























| |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 467 | 1854 | 98 | 1604 | 228 | 326 | 98 | 71 | 255 | 375 |
| v/c Ratio | 0.92 | 0.76 | 0.75 | 0.78 | 0.99 | 0.77 | 0.19 | 0.40 | 0.71 | 0.78 |
| Control Delay | 71.4 | 25.8 | 88.0 | 34.4 | 94.3 | 56.0 | 0.8 | 35.6 | 55.5 | 29.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.4 | 25.8 | 88.0 | 34.4 | 94.3 | 56.0 | 0.8 | 35.6 | 55.5 | 29.8 |
| Queue Length 50th (ft) | 197 | 258 | 76 | 386 | 141 | 243 | 0 | 40 | 186 | 118 |
| Queue Length 95th (ft) | #290 | 420 | #165 | #537 | #248 | 321 | 0 | 68 | 254 | 217 |
| Internal Link Dist (ft) | | 1155 | | 834 | | 912 | | | 742 | |
| Turn Bay Length (ft) | 550 | | 490 | | 250 | | 225 | 200 | | |
| Base Capacity (vph) | 510 | 2436 | 131 | 2068 | 231 | 522 | 600 | 180 | 492 | 578 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.92 | 0.76 | 0.75 | 0.78 | 0.99 | 0.62 | 0.16 | 0.39 | 0.52 | 0.65 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

5: NE 3rd Ave & Sample Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |   | |  |   | |  |  |  |   |   |  |
| Traffic Volume (vph) | 430 | 1525 | 180 | 90 | 1365 | 110 | 210 | 300 | 90 | 65 | 235 | 345 |
| Future Volume (vph) | 430 | 1525 | 180 | 90 | 1365 | 110 | 210 | 300 | 90 | 65 | 235 | 345 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.91 | | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3400 | 4956 | | 1752 | 4979 | | 1752 | 1845 | 1568 | 1752 | 1845 | 1568 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.32 | 1.00 | 1.00 | 0.30 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3400 | 4956 | | 1752 | 4979 | | 594 | 1845 | 1568 | 553 | 1845 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 467 | 1658 | 196 | 98 | 1484 | 120 | 228 | 326 | 98 | 71 | 255 | 375 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 7 | 0 | 0 | 0 | 76 | 0 | 0 | 173 |
| Lane Group Flow (vph) | 467 | 1843 | 0 | 98 | 1597 | 0 | 228 | 326 | 22 | 71 | 255 | 202 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Prot | NA | | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | | | | | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 16.0 | 55.6 | | 6.9 | 46.5 | | 34.5 | 27.5 | 27.5 | 28.5 | 24.5 | 24.5 |
| Effective Green, g (s) | 18.0 | 57.6 | | 8.9 | 48.5 | | 34.5 | 27.5 | 27.5 | 28.5 | 24.5 | 24.5 |
| Actuated g/C Ratio | 0.15 | 0.48 | | 0.07 | 0.40 | | 0.29 | 0.23 | 0.23 | 0.24 | 0.20 | 0.20 |
| Clearance Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 1.5 | 3.0 | | 1.5 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 510 | 2378 | | 129 | 2012 | | 238 | 422 | 359 | 171 | 376 | 320 |
| v/s Ratio Prot | c0.14 | c0.37 | | 0.06 | 0.32 | | c0.06 | 0.18 | | 0.01 | 0.14 | |
| v/s Ratio Perm | | | | | | | c0.22 | | 0.01 | 0.08 | | 0.13 |
| v/c Ratio | 0.92 | 0.78 | | 0.76 | 0.79 | | 0.96 | 0.77 | 0.06 | 0.42 | 0.68 | 0.63 |
| Uniform Delay, d1 | 50.3 | 25.8 | | 54.5 | 31.4 | | 41.7 | 43.3 | 36.2 | 36.9 | 44.1 | 43.6 |
| Progression Factor | 1.02 | 0.92 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 17.6 | 2.0 | | 20.1 | 3.3 | | 45.8 | 7.8 | 0.0 | 0.6 | 3.8 | 2.8 |
| Delay (s) | 68.6 | 25.7 | | 74.6 | 34.7 | | 87.6 | 51.1 | 36.2 | 37.5 | 47.9 | 46.4 |
| Level of Service | E | C | | E | C | | F | D | D | D | D | D |
| Approach Delay (s) | | 34.4 | | | 37.0 | | | 61.6 | | | 46.0 | |
| Approach LOS | | C | | | D | | | E | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 40.0 | | | HCM 2000 Level of Service | | | D | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.91 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | Sum of lost time (s) | | | 22.0 | | | |
| Intersection Capacity Utilization | | | 83.4% | | | ICU Level of Service | | | E | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

1: SW 12th Avenue & Hillsboro Blvd



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|------|-------|------|------|------|-------|------|------|------|------|
| Lane Group Flow (vph) | 315 | 2435 | 370 | 1641 | 505 | 109 | 152 | 261 | 27 | 27 | 27 |
| v/c Ratio | 0.97 | 0.77 | 1.02 | 0.59 | 0.46 | 0.30 | 0.77 | 0.49 | 0.36 | 0.35 | 0.07 |
| Control Delay | 113.8 | 27.5 | 126.9 | 23.2 | 7.3 | 75.1 | 102.4 | 16.2 | 95.6 | 95.0 | 0.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 113.8 | 27.5 | 126.9 | 23.5 | 7.6 | 75.1 | 102.4 | 16.2 | 95.6 | 95.0 | 0.4 |
| Queue Length 50th (ft) | 375 | 724 | ~240 | 409 | 84 | 62 | 178 | 52 | 33 | 33 | 0 |
| Queue Length 95th (ft) | #583 | 914 | #356 | 357 | 88 | 93 | 255 | 140 | 72 | 72 | 1 |
| Internal Link Dist (ft) | | 580 | | 548 | | | 436 | | | 396 | |
| Turn Bay Length (ft) | 450 | | 375 | | 350 | 225 | | 250 | 200 | | |
| Base Capacity (vph) | 325 | 3147 | 364 | 2789 | 1230 | 610 | 331 | 528 | 252 | 257 | 385 |
| Starvation Cap Reductn | 0 | 0 | 0 | 497 | 235 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.97 | 0.77 | 1.02 | 0.72 | 0.51 | 0.18 | 0.46 | 0.49 | 0.11 | 0.11 | 0.07 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.




























Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

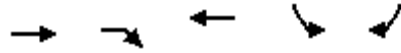
HCM Signalized Intersection Capacity Analysis

1: SW 12th Avenue & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|--|---|---|--|---|---|---|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   | |  |   |  |   |  |  |  |   |  |
| Traffic Volume (vph) | 290 | 2050 | 190 | 340 | 1510 | 465 | 100 | 140 | 240 | 40 | 10 | 25 |
| Future Volume (vph) | 290 | 2050 | 190 | 340 | 1510 | 465 | 100 | 140 | 240 | 40 | 10 | 25 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.0 | 6.0 | 6.0 | 6.5 | 6.0 | 6.0 | 6.5 |
| Lane Util. Factor | 1.00 | 0.91 | | 0.97 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |
| Frt | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 |
| Satd. Flow (prot) | 1770 | 5020 | | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1681 | 1719 | 1583 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 |
| Satd. Flow (perm) | 1770 | 5020 | | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1681 | 1719 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 315 | 2228 | 207 | 370 | 1641 | 505 | 109 | 152 | 261 | 43 | 11 | 27 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 0 | 100 | 0 | 0 | 165 | 0 | 0 | 21 |
| Lane Group Flow (vph) | 315 | 2431 | 0 | 370 | 1641 | 405 | 109 | 152 | 96 | 27 | 27 | 6 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | pm+ov | Split | NA | pm+ov | Split | NA | pm+ov |
| Protected Phases | 1 | 6 | | 5 | 2 | 3 | 4 | 4 | 5 | 3 | 3 | 1 |
| Permitted Phases | | | | | | 2 | | | 4 | | | 3 |
| Actuated Green, G (s) | 31.1 | 110.7 | | 17.1 | 96.7 | 104.8 | 19.1 | 19.1 | 36.2 | 8.1 | 8.1 | 39.2 |
| Effective Green, g (s) | 33.1 | 112.7 | | 19.1 | 98.7 | 108.8 | 19.1 | 19.1 | 36.2 | 8.1 | 8.1 | 39.2 |
| Actuated g/C Ratio | 0.18 | 0.63 | | 0.11 | 0.55 | 0.60 | 0.11 | 0.11 | 0.20 | 0.04 | 0.04 | 0.22 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | 6.0 | 6.0 | 6.0 | 6.5 | 6.0 | 6.0 | 6.5 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 2.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.5 |
| Lane Grp Cap (vph) | 325 | 3143 | | 364 | 2788 | 956 | 364 | 197 | 318 | 75 | 77 | 344 |
| v/s Ratio Prot | c0.18 | c0.48 | | 0.11 | 0.32 | c0.02 | 0.03 | c0.08 | 0.03 | 0.02 | 0.02 | 0.00 |
| v/s Ratio Perm | | | | | | 0.23 | | | 0.03 | | | 0.00 |
| v/c Ratio | 0.97 | 0.77 | | 1.02 | 0.59 | 0.42 | 0.30 | 0.77 | 0.30 | 0.36 | 0.35 | 0.02 |
| Uniform Delay, d1 | 72.9 | 24.4 | | 80.5 | 27.1 | 18.9 | 74.3 | 78.3 | 61.2 | 83.4 | 83.4 | 55.3 |
| Progression Factor | 1.00 | 1.00 | | 1.05 | 0.80 | 0.74 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 40.9 | 1.9 | | 46.4 | 0.7 | 0.1 | 0.2 | 15.5 | 0.2 | 1.1 | 1.0 | 0.0 |
| Delay (s) | 113.9 | 26.3 | | 131.2 | 22.4 | 14.0 | 74.4 | 93.9 | 61.4 | 84.5 | 84.4 | 55.3 |
| Level of Service | F | C | | F | C | B | E | F | E | F | F | E |
| Approach Delay (s) | | 36.3 | | | 36.7 | | | 73.6 | | | 74.7 | |
| Approach LOS | | D | | | D | | | E | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 40.3 | | | | HCM 2000 Level of Service | | | | D | |
| HCM 2000 Volume to Capacity ratio | | | 0.82 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | | Sum of lost time (s) | | | 23.0 | | |
| Intersection Capacity Utilization | | | 83.4% | | | | ICU Level of Service | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: Hillsboro Blvd & I-95 SB RAMP














| Lane Group | EBT | EBR | WBT | SBL2 | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 1565 | 937 | 1625 | 642 | 863 |
| v/c Ratio | 0.31 | 0.59 | 0.62 | 0.84 | 0.71 |
| Control Delay | 0.1 | 5.2 | 25.6 | 54.8 | 44.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.1 | 5.2 | 25.6 | 54.8 | 44.6 |
| Queue Length 50th (ft) | 0 | 116 | 512 | 668 | 471 |
| Queue Length 95th (ft) | 0 | 217 | 584 | 719 | 473 |
| Internal Link Dist (ft) | 548 | | 319 | | |
| Turn Bay Length (ft) | | 150 | | | |
| Base Capacity (vph) | 5085 | 1583 | 2622 | 919 | 1447 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 1 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.31 | 0.59 | 0.62 | 0.70 | 0.60 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: Hillsboro Bvd & I-95 SB RAMP

| |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------|---|---|---|---|---|---|--|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | SBL2 | SBL | SBR | NWL | NWR |
| Lane Configurations | | ↑↑↑ | ↑ | | ↑↑↑ | | ↑ | | ↑↑ | | |
| Traffic Volume (vph) | 0 | 1440 | 890 | 0 | 1495 | 0 | 610 | 0 | 820 | 0 | 0 |
| Future Volume (vph) | 0 | 1440 | 890 | 0 | 1495 | 0 | 610 | 0 | 820 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | | 4.5 | | 4.5 | | 4.5 | | |
| Lane Util. Factor | | 0.91 | 1.00 | | 0.91 | | 1.00 | | 0.88 | | |
| Frt | | 1.00 | 0.85 | | 1.00 | | 1.00 | | 0.85 | | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (prot) | | 5085 | 1583 | | 5085 | | 1770 | | 2787 | | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (perm) | | 5085 | 1583 | | 5085 | | 1770 | | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1565 | 937 | 0 | 1625 | 0 | 642 | 0 | 863 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1565 | 937 | 0 | 1625 | 0 | 642 | 0 | 863 | 0 | 0 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | | NA | Perm | | NA | | Prot | | Prot | | |
| Protected Phases | | Free! | | | 2 | | 8! | | 3 | | |
| Permitted Phases | | | Free | | | | | | | | |
| Actuated Green, G (s) | | 180.0 | 180.0 | | 90.8 | | 76.2 | | 76.2 | | |
| Effective Green, g (s) | | 180.0 | 180.0 | | 92.8 | | 78.2 | | 78.2 | | |
| Actuated g/C Ratio | | 1.00 | 1.00 | | 0.52 | | 0.43 | | 0.43 | | |
| Clearance Time (s) | | | | | 6.5 | | 6.5 | | 6.5 | | |
| Vehicle Extension (s) | | | | | 3.0 | | 2.5 | | 2.5 | | |
| Lane Grp Cap (vph) | | 5085 | 1583 | | 2621 | | 768 | | 1210 | | |
| v/s Ratio Prot | | 0.31 | | | 0.32 | | c0.36 | | 0.31 | | |
| v/s Ratio Perm | | | c0.59 | | | | | | | | |
| v/c Ratio | | 0.31 | 0.59 | | 0.62 | | 0.84 | | 0.71 | | |
| Uniform Delay, d1 | | 0.0 | 0.0 | | 31.0 | | 45.2 | | 41.7 | | |
| Progression Factor | | 1.00 | 1.00 | | 0.75 | | 1.00 | | 1.00 | | |
| Incremental Delay, d2 | | 0.1 | 1.1 | | 0.9 | | 7.7 | | 1.9 | | |
| Delay (s) | | 0.1 | 1.1 | | 24.3 | | 52.9 | | 43.6 | | |
| Level of Service | | A | A | | C | | D | | D | | |
| Approach Delay (s) | | 0.5 | | | 24.3 | | | 47.6 | | 0.0 | |
| Approach LOS | | A | | | C | | | D | | A | |
| Intersection Summary | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 19.9 | | HCM 2000 Level of Service | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.72 | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | Sum of lost time (s) | | | | 9.0 | | |
| Intersection Capacity Utilization | | | 65.1% | | ICU Level of Service | | | | C | | |
| Analysis Period (min) | | | 15 | | | | | | | | |
| ! Phase conflict between lane groups. | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | |

Queues

3: I-95 NB Ramp & Hillsboro Blvd















| Lane Group | EBT | WBT | WBR | NBL | NBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 1511 | 1734 | 880 | 707 | 842 |
| v/c Ratio | 0.55 | 0.63 | 0.56 | 0.37 | 0.77 |
| Control Delay | 12.4 | 13.9 | 2.7 | 20.1 | 28.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 12.4 | 13.9 | 2.7 | 20.1 | 28.0 |
| Queue Length 50th (ft) | 194 | 420 | 58 | 97 | 215 |
| Queue Length 95th (ft) | 283 | m320 | m10 | 121 | 282 |
| Internal Link Dist (ft) | 286 | 371 | | | |
| Turn Bay Length (ft) | | | 250 | 350 | 350 |
| Base Capacity (vph) | 2769 | 2769 | 1568 | 2106 | 1201 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.63 | 0.56 | 0.34 | 0.70 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.













HCM Signalized Intersection Capacity Analysis

3: I-95 NB Ramp & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | | | ↑↑↑ | ↑ | ↑↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1390 | 0 | 0 | 1595 | 810 | 650 | 0 | 800 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 1390 | 0 | 0 | 1595 | 810 | 650 | 0 | 800 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | 2.0 | 2.0 | | 2.0 | | | |
| Lane Util. Factor | | 0.91 | | | 0.91 | 1.00 | 0.94 | | 0.88 | | | |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 5085 | | | 5085 | 1568 | 4990 | | 2787 | | | |
| Flt Permitted | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 5085 | | | 5085 | 1568 | 4990 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1511 | 0 | 0 | 1734 | 880 | 707 | 0 | 842 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1511 | 0 | 0 | 1734 | 880 | 707 | 0 | 816 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 3% | 2% | 3% | 2% | 3% | 3% | 3% |
| Turn Type | | NA | | | NA | Free | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 4 | | 4 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | | 47.0 | | | 47.0 | 90.0 | 32.5 | | 32.5 | | | |
| Effective Green, g (s) | | 49.0 | | | 49.0 | 90.0 | 34.5 | | 34.5 | | | |
| Actuated g/C Ratio | | 0.54 | | | 0.54 | 1.00 | 0.38 | | 0.38 | | | |
| Clearance Time (s) | | 6.5 | | | 6.5 | | 4.0 | | 4.0 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | | 3.0 | | | |
| Lane Grp Cap (vph) | | 2768 | | | 2768 | 1568 | 1912 | | 1068 | | | |
| v/s Ratio Prot | | 0.30 | | | 0.34 | | 0.14 | | 0.29 | | | |
| v/s Ratio Perm | | | | | | 0.56 | | | | | | |
| v/c Ratio | | 0.55 | | | 0.63 | 0.56 | 0.37 | | 0.76 | | | |
| Uniform Delay, d1 | | 13.3 | | | 14.2 | 0.0 | 19.9 | | 24.2 | | | |
| Progression Factor | | 0.85 | | | 0.91 | 1.00 | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 0.7 | | | 0.6 | 0.8 | 0.1 | | 3.3 | | | |
| Delay (s) | | 12.0 | | | 13.4 | 0.8 | 20.1 | | 27.5 | | | |
| Level of Service | | B | | | B | A | C | | C | | | |
| Approach Delay (s) | | 12.0 | | | 9.2 | | | 24.1 | | | 0.0 | |
| Approach LOS | | B | | | A | | | C | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 14.0 | | | HCM 2000 Level of Service | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.68 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | Sum of lost time (s) | | | | 6.5 | | |
| Intersection Capacity Utilization | | | 61.9% | | | ICU Level of Service | | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd






























| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 342 | 1908 | 130 | 87 | 2038 | 103 | 484 | 92 | 174 | 43 | 5 | 92 |
| v/c Ratio | 0.92 | 0.58 | 0.12 | 0.76 | 0.67 | 0.10 | 1.64 | 0.31 | 0.44 | 0.52 | 0.08 | 0.42 |
| Control Delay | 96.8 | 18.1 | 2.2 | 117.7 | 25.1 | 0.2 | 340.1 | 70.9 | 14.3 | 87.2 | 87.0 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 96.8 | 18.1 | 2.2 | 117.7 | 25.1 | 0.2 | 340.1 | 70.9 | 14.3 | 87.2 | 87.0 | 5.7 |
| Queue Length 50th (ft) | 205 | 456 | 15 | 103 | 567 | 0 | ~757 | 99 | 10 | 42 | 6 | 0 |
| Queue Length 95th (ft) | #307 | 447 | m28 | #195 | 614 | 0 | #991 | 163 | 88 | 82 | 22 | 0 |
| Internal Link Dist (ft) | | 660 | | | 631 | | | 513 | | | 403 | |
| Turn Bay Length (ft) | 300 | | 150 | 100 | | 200 | 125 | | | | | 340 |
| Base Capacity (vph) | 371 | 3280 | 1067 | 120 | 3064 | 1021 | 296 | 610 | 629 | 82 | 393 | 470 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.92 | 0.58 | 0.12 | 0.72 | 0.67 | 0.10 | 1.64 | 0.15 | 0.28 | 0.52 | 0.01 | 0.20 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |   |    |  |  |    |  |  |  |  |  |  |  | |
| Traffic Volume (vph) | 315 | 1755 | 120 | 80 | 1875 | 95 | 445 | 85 | 160 | 40 | 5 | 85 | |
| Future Volume (vph) | 315 | 1755 | 120 | 80 | 1875 | 95 | 445 | 85 | 160 | 40 | 5 | 85 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5085 | 1583 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.41 | 1.00 | 1.00 | 0.70 | 1.00 | 1.00 | |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 1770 | 5085 | 1583 | 767 | 1863 | 1583 | 1299 | 1863 | 1583 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 342 | 1908 | 130 | 87 | 2038 | 103 | 484 | 92 | 174 | 43 | 5 | 92 | |
| RTOR Reduction (vph) | 0 | 0 | 47 | 0 | 0 | 42 | 0 | 0 | 138 | 0 | 0 | 88 | |
| Lane Group Flow (vph) | 342 | 1908 | 83 | 87 | 2038 | 61 | 484 | 92 | 36 | 43 | 5 | 4 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 | |
| Actuated Green, G (s) | 17.5 | 113.0 | 113.0 | 9.8 | 105.3 | 105.3 | 38.2 | 29.0 | 29.0 | 10.4 | 7.2 | 7.2 | |
| Effective Green, g (s) | 19.5 | 115.0 | 115.0 | 11.8 | 107.3 | 107.3 | 38.2 | 29.0 | 29.0 | 10.4 | 7.2 | 7.2 | |
| Actuated g/C Ratio | 0.11 | 0.64 | 0.64 | 0.07 | 0.60 | 0.60 | 0.21 | 0.16 | 0.16 | 0.06 | 0.04 | 0.04 | |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | |
| Vehicle Extension (s) | 2.0 | 3.0 | 3.0 | 1.5 | 3.0 | 3.0 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 371 | 3248 | 1011 | 116 | 3031 | 943 | 302 | 300 | 255 | 83 | 74 | 63 | |
| v/s Ratio Prot | c0.10 | 0.38 | | 0.05 | c0.40 | | c0.22 | 0.05 | | 0.01 | 0.00 | | |
| v/s Ratio Perm | | | 0.05 | | | 0.04 | c0.12 | | 0.02 | 0.02 | | 0.00 | |
| v/c Ratio | 0.92 | 0.59 | 0.08 | 0.75 | 0.67 | 0.07 | 1.60 | 0.31 | 0.14 | 0.52 | 0.07 | 0.06 | |
| Uniform Delay, d1 | 79.5 | 18.8 | 12.4 | 82.7 | 24.5 | 15.3 | 68.4 | 66.6 | 64.8 | 81.9 | 83.2 | 83.1 | |
| Progression Factor | 0.90 | 0.95 | 1.20 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 23.6 | 0.6 | 0.1 | 21.2 | 1.2 | 0.1 | 286.2 | 0.2 | 0.1 | 2.3 | 0.1 | 0.1 | |
| Delay (s) | 94.9 | 18.6 | 15.0 | 103.8 | 25.7 | 15.4 | 354.6 | 66.8 | 64.9 | 84.2 | 83.3 | 83.3 | |
| Level of Service | F | B | B | F | C | B | F | E | E | F | F | F | |
| Approach Delay (s) | | 29.4 | | | 28.3 | | | 252.1 | | | 83.6 | | |
| Approach LOS | | C | | | C | | | F | | | F | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 60.7 | | | | | | | | | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | | | 0.93 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | | | | | | | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | | | 89.0% | | | | | | | | | ICU Level of Service | E |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

1: S Military Trail & SR 869/SW 10th Street

06/04/2021



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|------|------|
| Lane Group Flow (vph) | 364 | 2598 | 174 | 364 | 1696 | 375 | 207 | 929 | 701 | 522 | 658 | 315 |
| v/c Ratio | 1.00 | 1.47 | 0.18 | 1.03 | 0.97 | 0.36 | 0.92 | 1.52 | 1.35 | 1.43 | 0.87 | 0.66 |
| Control Delay | 125.3 | 247.9 | 5.6 | 140.2 | 50.0 | 17.7 | 123.0 | 288.2 | 200.3 | 262.3 | 81.8 | 33.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 125.3 | 247.9 | 5.6 | 140.2 | 50.0 | 17.7 | 123.0 | 288.2 | 200.3 | 262.3 | 81.8 | 33.5 |
| Queue Length 50th (ft) | 225 | ~2204 | 25 | ~242 | 558 | 168 | 127 | ~802 | ~778 | ~428 | 401 | 146 |
| Queue Length 95th (ft) | #342 | #2305 | 62 | #359 | #1164 | 256 | #212 | #942 | #1038 | #553 | #496 | 265 |
| Internal Link Dist (ft) | | 620 | | | 1082 | | | 569 | | | 457 | |
| Turn Bay Length (ft) | 550 | | 500 | 550 | | 500 | 300 | | 300 | 650 | | 650 |
| Base Capacity (vph) | 364 | 1769 | 981 | 352 | 1757 | 1035 | 226 | 611 | 520 | 364 | 753 | 480 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.00 | 1.47 | 0.18 | 1.03 | 0.97 | 0.36 | 0.92 | 1.52 | 1.35 | 1.43 | 0.87 | 0.66 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

































95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: S Military Trail & SR 869/SW 10th Street

06/04/2021

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |   |  |   |   |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 335 | 2390 | 160 | 335 | 1560 | 345 | 190 | 855 | 645 | 480 | 605 | 290 |
| Future Volume (vph) | 335 | 2390 | 160 | 335 | 1560 | 345 | 190 | 855 | 645 | 480 | 605 | 290 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.5 | 4.0 | 5.9 | 5.5 | 4.0 | 5.9 | 5.9 | 5.9 | 5.5 | 5.9 | 5.9 | 5.9 |
| Lane Util. Factor | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 364 | 2598 | 174 | 364 | 1696 | 375 | 207 | 929 | 701 | 522 | 658 | 315 |
| RTOR Reduction (vph) | 0 | 0 | 53 | 0 | 0 | 49 | 0 | 0 | 81 | 0 | 0 | 144 |
| Lane Group Flow (vph) | 364 | 2598 | 121 | 364 | 1696 | 326 | 207 | 929 | 620 | 522 | 658 | 171 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | Perm |
| Protected Phases | 1 | 6 | 7 | 5 | 2 | 3 | 7 | 4 | 5 | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | | | 4 | | | 8 |
| Actuated Green, G (s) | 17.1 | 88.0 | 97.9 | 16.5 | 87.4 | 104.5 | 9.9 | 29.1 | 45.6 | 17.1 | 36.3 | 36.3 |
| Effective Green, g (s) | 19.1 | 90.0 | 101.9 | 18.5 | 89.4 | 108.5 | 11.9 | 31.1 | 49.6 | 19.1 | 38.3 | 38.3 |
| Actuated g/C Ratio | 0.11 | 0.50 | 0.57 | 0.10 | 0.50 | 0.60 | 0.07 | 0.17 | 0.28 | 0.11 | 0.21 | 0.21 |
| Clearance Time (s) | 7.5 | 6.0 | 7.9 | 7.5 | 6.0 | 7.9 | 7.9 | 7.9 | 7.5 | 7.9 | 7.9 | 7.9 |
| Vehicle Extension (s) | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 364 | 1769 | 896 | 352 | 1757 | 1006 | 226 | 611 | 436 | 364 | 753 | 336 |
| v/s Ratio Prot | 0.11 | c0.73 | 0.01 | 0.11 | 0.48 | 0.03 | 0.06 | c0.26 | c0.15 | c0.15 | 0.19 | |
| v/s Ratio Perm | | | 0.07 | | | 0.17 | | | 0.25 | | | 0.11 |
| v/c Ratio | 1.00 | 1.47 | 0.13 | 1.03 | 0.97 | 0.32 | 0.92 | 1.52 | 1.42 | 1.43 | 0.87 | 0.51 |
| Uniform Delay, d1 | 80.5 | 45.0 | 18.3 | 80.8 | 43.8 | 17.6 | 83.6 | 74.5 | 65.2 | 80.5 | 68.5 | 62.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.22 | 0.88 | 1.62 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 47.2 | 214.0 | 0.0 | 49.4 | 11.6 | 0.0 | 36.8 | 242.5 | 202.8 | 210.5 | 11.0 | 1.2 |
| Delay (s) | 127.6 | 259.0 | 18.4 | 148.0 | 50.1 | 28.7 | 120.4 | 317.0 | 268.0 | 290.9 | 79.5 | 63.8 |
| Level of Service | F | F | B | F | D | C | F | F | F | F | E | E |
| Approach Delay (s) | | 230.4 | | | 61.4 | | | 276.1 | | | 150.0 | |
| Approach LOS | | F | | | E | | | F | | | F | |

Intersection Summary

| | | | |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay | 180.1 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.47 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 21.3 |
| Intersection Capacity Utilization | 132.5% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Queues

2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

06/04/2021



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|-------|------|
| Lane Group Flow (vph) | 332 | 3489 | 440 | 2283 | 370 | 35 | 36 | 114 | 54 | 92 |
| v/c Ratio | 0.66 | 0.91 | 0.85 | 0.74 | 0.35 | 0.25 | 0.25 | 0.24 | 0.71 | 0.18 |
| Control Delay | 57.0 | 16.2 | 89.4 | 24.9 | 2.3 | 82.2 | 82.2 | 15.2 | 126.6 | 10.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.0 | 16.2 | 89.4 | 25.1 | 2.3 | 82.2 | 82.2 | 15.2 | 126.6 | 10.5 |
| Queue Length 50th (ft) | 188 | 632 | 261 | 631 | 32 | 41 | 43 | 21 | 64 | 0 |
| Queue Length 95th (ft) | m125 | m275 | m289 | m512 | m6 | 86 | 87 | 78 | #140 | 30 |
| Internal Link Dist (ft) | | 818 | | 925 | | | 695 | | 185 | |
| Turn Bay Length (ft) | 700 | | 750 | | 750 | | | 150 | | |
| Base Capacity (vph) | 506 | 3814 | 534 | 3135 | 1081 | 140 | 142 | 480 | 79 | 524 |
| Starvation Cap Reductn | 0 | 0 | 0 | 236 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.91 | 0.82 | 0.79 | 0.34 | 0.25 | 0.25 | 0.24 | 0.68 | 0.18 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

06/04/2021



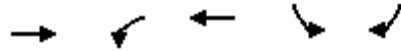
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 305 | 2705 | 505 | 405 | 2100 | 340 | 55 | 10 | 105 | 40 | 10 | 85 |
| Future Volume (vph) | 305 | 2705 | 505 | 405 | 2100 | 340 | 55 | 10 | 105 | 40 | 10 | 85 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.86 | | 0.97 | 0.91 | 1.00 | 0.95 | 0.95 | 1.00 | | 1.00 | 0.88 |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 | | 0.96 | 1.00 |
| Satd. Flow (prot) | 3367 | 6257 | | 3433 | 5085 | 1524 | 1681 | 1710 | 1583 | | 1593 | 2030 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 | | 0.96 | 1.00 |
| Satd. Flow (perm) | 3367 | 6257 | | 3433 | 5085 | 1524 | 1681 | 1710 | 1583 | | 1593 | 2030 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 332 | 2940 | 549 | 440 | 2283 | 370 | 60 | 11 | 114 | 43 | 11 | 92 |
| RTOR Reduction (vph) | 0 | 18 | 0 | 0 | 0 | 146 | 0 | 0 | 68 | 0 | 0 | 72 |
| Lane Group Flow (vph) | 332 | 3471 | 0 | 440 | 2283 | 224 | 35 | 36 | 46 | 0 | 54 | 20 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 6% | 2% | 2% | 2% | 18% | 2% | 40% |
| Turn Type | Prot | NA | | Prot | NA | Prot | Split | NA | pt+ov | Split | NA | pt+ov |
| Protected Phases | 1 | 6 | | 5 | 2 | 2 | 3 | 3 | 3 5 | 4 | 4 | 4 1 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | 25.2 | 107.2 | | 25.1 | 107.1 | 107.1 | 15.0 | 15.0 | 46.1 | | 8.7 | 39.9 |
| Effective Green, g (s) | 27.2 | 109.2 | | 27.1 | 109.1 | 109.1 | 15.0 | 15.0 | 46.1 | | 8.7 | 39.9 |
| Actuated g/C Ratio | 0.15 | 0.61 | | 0.15 | 0.61 | 0.61 | 0.08 | 0.08 | 0.26 | | 0.05 | 0.22 |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 508 | 3795 | | 516 | 3082 | 923 | 140 | 142 | 405 | | 76 | 449 |
| v/s Ratio Prot | 0.10 | c0.55 | | c0.13 | 0.45 | 0.15 | 0.02 | c0.02 | 0.03 | | c0.03 | 0.01 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | 0.65 | 0.91 | | 0.85 | 0.74 | 0.24 | 0.25 | 0.25 | 0.11 | | 0.71 | 0.05 |
| Uniform Delay, d1 | 72.0 | 31.3 | | 74.5 | 25.3 | 16.4 | 77.2 | 77.3 | 51.3 | | 84.4 | 55.1 |
| Progression Factor | 0.77 | 0.50 | | 1.07 | 0.95 | 1.53 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.2 | 0.5 | | 7.6 | 0.9 | 0.4 | 0.9 | 0.9 | 0.1 | | 26.7 | 0.0 |
| Delay (s) | 55.7 | 16.0 | | 87.5 | 25.0 | 25.4 | 78.2 | 78.2 | 51.4 | | 111.1 | 55.1 |
| Level of Service | E | B | | F | C | C | E | E | D | | F | E |
| Approach Delay (s) | | 19.5 | | | 33.9 | | | 61.7 | | | 75.8 | |
| Approach LOS | | B | | | C | | | E | | | E | |

| Intersection Summary | | |
|-----------------------------------|-------|-----------------------------|
| HCM 2000 Control Delay | 27.8 | HCM 2000 Level of Service C |
| HCM 2000 Volume to Capacity ratio | 0.84 | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) 22.0 |
| Intersection Capacity Utilization | 83.4% | ICU Level of Service E |
| Analysis Period (min) | 15 | |
| c Critical Lane Group | | |

Queues

3: SR 869/SW 10th Street & I-95 SB Off-Ramp

06/04/2021



| Lane Group | EBT | WBL | WBT | SBL | SBR |
|-------------------------|--------|-------|------|------|-------|
| Lane Group Flow (vph) | 3074 | 879 | 2016 | 453 | 1042 |
| v/c Ratio | 1.23dr | 0.99 | 0.62 | 0.42 | 1.19 |
| Control Delay | 103.7 | 103.4 | 8.2 | 50.2 | 148.2 |
| Queue Delay | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| Total Delay | 103.7 | 103.4 | 8.4 | 50.2 | 148.2 |
| Queue Length 50th (ft) | ~1044 | 547 | 145 | 219 | -838 |
| Queue Length 95th (ft) | #1076 | m#640 | m219 | 274 | #990 |
| Internal Link Dist (ft) | 925 | | 295 | | |
| Turn Bay Length (ft) | | 500 | | 500 | 500 |
| Base Capacity (vph) | 2640 | 884 | 3234 | 1079 | 876 |
| Starvation Cap Reductn | 0 | 0 | 470 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.16 | 0.99 | 0.73 | 0.42 | 1.19 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

HCM Signalized Intersection Capacity Analysis

3: SR 869/SW 10th Street & I-95 SB Off-Ramp

06/04/2021



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|--------|------|-------|-------|------|------|------|------|------|-------|-------|
| Lane Configurations | | ↑↑↑↑ | | ↑↑ | ↑↑↑ | | | | | ↑↑ | | ↑↑ |
| Traffic Volume (vph) | 0 | 2135 | 715 | 835 | 1855 | 0 | 0 | 0 | 0 | 430 | 0 | 990 |
| Future Volume (vph) | 0 | 2135 | 715 | 835 | 1855 | 0 | 0 | 0 | 0 | 430 | 0 | 990 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.0 | | 4.0 | 4.5 | | | | | 4.4 | | 4.4 |
| Lane Util. Factor | | 0.81 | | 0.97 | 0.91 | | | | | 0.97 | | 0.88 |
| Frt | | 0.96 | | 1.00 | 1.00 | | | | | 1.00 | | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | 0.95 | | 1.00 |
| Satd. Flow (prot) | | 7267 | | 3433 | 5085 | | | | | 3433 | | 2787 |
| Flt Permitted | | 1.00 | | 0.95 | 1.00 | | | | | 0.95 | | 1.00 |
| Satd. Flow (perm) | | 7267 | | 3433 | 5085 | | | | | 3433 | | 2787 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.95 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 2321 | 753 | 879 | 2016 | 0 | 0 | 0 | 0 | 453 | 0 | 1042 |
| RTOR Reduction (vph) | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 3041 | 0 | 879 | 2016 | 0 | 0 | 0 | 0 | 453 | 0 | 1042 |
| Turn Type | | NA | | Prot | NA | | | | | Prot | | Prot |
| Protected Phases | | 6 | | 5 4 | 2 4 | | | | | 3 | | 3 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 62.6 | | 44.4 | 112.5 | | | | | 54.6 | | 54.6 |
| Effective Green, g (s) | | 64.6 | | 42.0 | 110.1 | | | | | 56.6 | | 56.6 |
| Actuated g/C Ratio | | 0.36 | | 0.23 | 0.61 | | | | | 0.31 | | 0.31 |
| Clearance Time (s) | | 6.0 | | | | | | | | 6.4 | | 6.4 |
| Vehicle Extension (s) | | 3.0 | | | | | | | | 2.0 | | 2.0 |
| Lane Grp Cap (vph) | | 2608 | | 801 | 3110 | | | | | 1079 | | 876 |
| v/s Ratio Prot | | c0.42 | | c0.26 | 0.40 | | | | | 0.13 | | c0.37 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 1.23dr | | 1.10 | 0.65 | | | | | 0.42 | | 1.19 |
| Uniform Delay, d1 | | 57.7 | | 69.0 | 22.5 | | | | | 48.7 | | 61.7 |
| Progression Factor | | 0.49 | | 1.19 | 0.37 | | | | | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 76.8 | | 59.2 | 0.4 | | | | | 0.1 | | 96.7 |
| Delay (s) | | 105.0 | | 141.5 | 8.8 | | | | | 48.8 | | 158.4 |
| Level of Service | | F | | F | A | | | | | D | | F |
| Approach Delay (s) | | 105.0 | | | 49.1 | | | 0.0 | | | 125.2 | |
| Approach LOS | | F | | | D | | | A | | | F | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 87.3 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.16 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 16.8 |
| Intersection Capacity Utilization | 80.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Queues

4: I-95 NB On/Off-Ramp & SR 869/SW 10th Street

06/04/2021



| Lane Group | EBT | EBR | WBT | NBL | NBR |
|-------------------------|------|------|------|-------|------|
| Lane Group Flow (vph) | 1299 | 1442 | 2315 | 895 | 495 |
| v/c Ratio | 0.37 | 0.52 | 0.39 | 1.08 | 0.82 |
| Control Delay | 0.7 | 6.3 | 7.0 | 122.0 | 84.7 |
| Queue Delay | 0.3 | 0.0 | 0.2 | 0.0 | 0.0 |
| Total Delay | 1.0 | 6.3 | 7.1 | 122.0 | 84.7 |
| Queue Length 50th (ft) | 9 | 178 | 74 | ~415 | 251 |
| Queue Length 95th (ft) | m8 | m44 | 100 | #509 | 310 |
| Internal Link Dist (ft) | 260 | | 630 | 1225 | |
| Turn Bay Length (ft) | | 700 | | 410 | 430 |
| Base Capacity (vph) | 3548 | 2787 | 5913 | 831 | 601 |
| Starvation Cap Reductn | 1373 | 0 | 2140 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.52 | 0.61 | 1.08 | 0.82 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

4: I-95 NB On/Off-Ramp & SR 869/SW 10th Street

06/04/2021



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↑↑↑ | ↑↑ | | ↑↑↑↑ | ↑↑↑ | ↑↑↑ |
| Traffic Volume (vph) | 1195 | 1370 | 0 | 2130 | 850 | 470 |
| Future Volume (vph) | 1195 | 1370 | 0 | 2130 | 850 | 470 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 2.0 | | 4.5 | 4.4 | 4.4 |
| Lane Util. Factor | 0.91 | 0.88 | | 0.81 | 0.94 | 0.76 |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 5085 | 2787 | | 7544 | 4990 | 3610 |
| Flt Permitted | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 5085 | 2787 | | 7544 | 4990 | 3610 |
| Peak-hour factor, PHF | 0.92 | 0.95 | 0.92 | 0.92 | 0.95 | 0.95 |
| Adj. Flow (vph) | 1299 | 1442 | 0 | 2315 | 895 | 495 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 1299 | 1442 | 0 | 2315 | 895 | 495 |
| Turn Type | NA | Free | | NA | Prot | Prot |
| Protected Phases | 6 3 | | | 2 3 | 4 | 4 |
| Permitted Phases | | Free | | | | |
| Actuated Green, G (s) | 123.2 | 180.0 | | 139.2 | 28.0 | 28.0 |
| Effective Green, g (s) | 125.2 | 180.0 | | 141.2 | 30.0 | 30.0 |
| Actuated g/C Ratio | 0.70 | 1.00 | | 0.78 | 0.17 | 0.17 |
| Clearance Time (s) | | | | | 6.4 | 6.4 |
| Vehicle Extension (s) | | | | | 3.5 | 3.5 |
| Lane Grp Cap (vph) | 3536 | 2787 | | 5917 | 831 | 601 |
| v/s Ratio Prot | 0.26 | | | 0.31 | c0.18 | 0.14 |
| v/s Ratio Perm | | c0.52 | | | | |
| v/c Ratio | 0.37 | 0.52 | | 0.39 | 1.08 | 0.82 |
| Uniform Delay, d1 | 11.2 | 0.0 | | 6.0 | 75.0 | 72.4 |
| Progression Factor | 0.06 | 1.00 | | 1.12 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.0 | 54.1 | 9.2 |
| Delay (s) | 0.7 | 0.1 | | 6.8 | 129.1 | 81.6 |
| Level of Service | A | A | | A | F | F |
| Approach Delay (s) | 0.4 | | | 6.8 | 112.2 | |
| Approach LOS | A | | | A | F | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 26.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 55.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Queues

5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

06/04/2021



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 272 | 1234 | 304 | 168 | 1685 | 92 | 239 | 163 | 163 | 250 | 201 | 391 |
| v/c Ratio | 0.74 | 0.44 | 0.30 | 0.65 | 0.64 | 0.11 | 0.83 | 0.29 | 0.42 | 0.70 | 0.76 | 0.89 |
| Control Delay | 76.2 | 19.0 | 3.5 | 93.1 | 34.3 | 5.4 | 74.2 | 66.7 | 10.8 | 63.2 | 90.7 | 49.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 76.2 | 19.0 | 3.5 | 93.1 | 34.3 | 5.4 | 74.2 | 66.7 | 10.8 | 63.2 | 90.7 | 49.6 |
| Queue Length 50th (ft) | 153 | 221 | 47 | 101 | 522 | 1 | 233 | 91 | 0 | 245 | 233 | 183 |
| Queue Length 95th (ft) | m217 | 261 | m68 | 145 | 675 | 40 | 291 | 120 | 66 | 303 | 305 | 303 |
| Internal Link Dist (ft) | | 630 | | | 1233 | | | 1112 | | | 1327 | |
| Turn Bay Length (ft) | 300 | | 300 | 200 | | 300 | 260 | | 260 | 170 | | 170 |
| Base Capacity (vph) | 411 | 2800 | 1008 | 278 | 2636 | 864 | 298 | 886 | 518 | 364 | 437 | 561 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.44 | 0.30 | 0.60 | 0.64 | 0.11 | 0.80 | 0.18 | 0.31 | 0.69 | 0.46 | 0.70 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

06/04/2021



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|------|------|------|-------|------|-------|------|------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 250 | 1135 | 280 | 155 | 1550 | 85 | 220 | 150 | 150 | 230 | 185 | 360 |
| Future Volume (vph) | 250 | 1135 | 280 | 155 | 1550 | 85 | 220 | 150 | 150 | 230 | 185 | 360 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.27 | 1.00 | 1.00 | 0.65 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 506 | 3539 | 1583 | 1208 | 1863 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 272 | 1234 | 304 | 168 | 1685 | 92 | 239 | 163 | 163 | 250 | 201 | 391 |
| RTOR Reduction (vph) | 0 | 0 | 137 | 0 | 0 | 43 | 0 | 0 | 137 | 0 | 0 | 212 |
| Lane Group Flow (vph) | 272 | 1234 | 167 | 168 | 1685 | 49 | 239 | 163 | 26 | 250 | 201 | 179 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 17.3 | 97.1 | 97.1 | 11.5 | 91.3 | 91.3 | 49.6 | 28.2 | 28.2 | 44.8 | 25.8 | 25.8 |
| Effective Green, g (s) | 19.3 | 99.1 | 99.1 | 13.5 | 93.3 | 93.3 | 49.6 | 28.2 | 28.2 | 44.8 | 25.8 | 25.8 |
| Actuated g/C Ratio | 0.11 | 0.55 | 0.55 | 0.08 | 0.52 | 0.52 | 0.28 | 0.16 | 0.16 | 0.25 | 0.14 | 0.14 |
| Clearance Time (s) | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | 1.5 | 3.0 | 3.0 | 1.5 | 3.0 | 3.0 | 1.5 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 368 | 2799 | 871 | 257 | 2635 | 820 | 289 | 554 | 248 | 359 | 267 | 226 |
| v/s Ratio Prot | c0.08 | 0.24 | | 0.05 | c0.33 | | c0.10 | 0.05 | | 0.07 | 0.11 | |
| v/s Ratio Perm | | | 0.11 | | | 0.03 | c0.13 | | 0.02 | 0.10 | | 0.11 |
| v/c Ratio | 0.74 | 0.44 | 0.19 | 0.65 | 0.64 | 0.06 | 0.83 | 0.29 | 0.10 | 0.70 | 0.75 | 0.79 |
| Uniform Delay, d1 | 77.9 | 24.0 | 20.3 | 81.0 | 31.2 | 21.5 | 55.5 | 67.1 | 65.1 | 59.2 | 74.0 | 74.5 |
| Progression Factor | 0.84 | 0.73 | 1.19 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 5.9 | 0.4 | 0.4 | 4.5 | 0.5 | 0.0 | 16.6 | 0.1 | 0.1 | 4.7 | 10.2 | 15.9 |
| Delay (s) | 71.0 | 18.0 | 24.5 | 85.5 | 31.7 | 21.6 | 72.1 | 67.2 | 65.1 | 63.9 | 84.2 | 90.4 |
| Level of Service | E | B | C | F | C | C | E | E | E | E | F | F |
| Approach Delay (s) | | 27.0 | | | 35.9 | | | 68.7 | | | 81.1 | |
| Approach LOS | | C | | | D | | | E | | | F | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 43.8 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 20.2 |
| Intersection Capacity Utilization | 77.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Queues

1: NW 5th Terr & Sample Road

| | → | ↖ | ← | ↙ | ↗ |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | WBL | WBT | NBL | NBR |
| Lane Group Flow (vph) | 2554 | 174 | 2011 | 158 | 207 |
| v/c Ratio | 0.60 | 0.79 | 0.53 | 0.69 | 0.54 |
| Control Delay | 17.9 | 78.8 | 2.1 | 64.9 | 11.3 |
| Queue Delay | 0.0 | 1.5 | 0.1 | 0.0 | 0.0 |
| Total Delay | 17.9 | 80.3 | 2.1 | 64.9 | 11.3 |
| Queue Length 50th (ft) | 298 | 104 | 37 | 119 | 0 |
| Queue Length 95th (ft) | 377 | #237 | 32 | 181 | 65 |
| Internal Link Dist (ft) | 575 | | 175 | 531 | |
| Turn Bay Length (ft) | | | | | |
| Base Capacity (vph) | 4279 | 221 | 3791 | 545 | 631 |
| Starvation Cap Reductn | 0 | 7 | 458 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.81 | 0.60 | 0.29 | 0.33 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

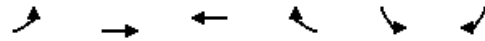
1: NW 5th Terr & Sample Road

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------|------|-------|-------|---------------------------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | > | | > | > | > | > |
| Traffic Volume (vph) | 2235 | 115 | 160 | 1850 | 145 | 190 |
| Future Volume (vph) | 2235 | 115 | 160 | 1850 | 145 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | | 6.0 | 6.0 | 9.0 | 9.0 |
| Lane Util. Factor | 0.81 | | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | 0.99 | | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 7489 | | 1770 | 5085 | 1770 | 1583 |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 7489 | | 1770 | 5085 | 1770 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2429 | 125 | 174 | 2011 | 158 | 207 |
| RTOR Reduction (vph) | 5 | 0 | 0 | 0 | 0 | 180 |
| Lane Group Flow (vph) | 2549 | 0 | 174 | 2011 | 158 | 27 |
| Turn Type | NA | | Prot | NA | Prot | Perm |
| Protected Phases | 2 3 | | 1 | 1 2 3 | 4 | |
| Permitted Phases | | | | | 4 | 4 |
| Actuated Green, G (s) | 66.5 | | 13.0 | 87.5 | 15.5 | 15.5 |
| Effective Green, g (s) | 68.5 | | 15.0 | 89.5 | 15.5 | 15.5 |
| Actuated g/C Ratio | 0.57 | | 0.12 | 0.75 | 0.13 | 0.13 |
| Clearance Time (s) | | | 8.0 | | 9.0 | 9.0 |
| Vehicle Extension (s) | | | 1.5 | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 4274 | | 221 | 3792 | 228 | 204 |
| v/s Ratio Prot | c0.34 | | c0.10 | 0.40 | c0.09 | |
| v/s Ratio Perm | | | | | | 0.02 |
| v/c Ratio | 0.60 | | 0.79 | 0.53 | 0.69 | 0.13 |
| Uniform Delay, d1 | 16.8 | | 51.0 | 6.4 | 50.0 | 46.3 |
| Progression Factor | 1.00 | | 1.11 | 0.23 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.2 | | 14.0 | 0.1 | 7.1 | 0.1 |
| Delay (s) | 16.9 | | 70.6 | 1.5 | 57.1 | 46.4 |
| Level of Service | B | | E | A | E | D |
| Approach Delay (s) | 16.9 | | | 7.0 | 51.0 | |
| Approach LOS | B | | | A | D | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 15.1 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.68 | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | 27.0 |
| Intersection Capacity Utilization | | | 61.8% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

Queues

2: Sample Road & NW 5th Ave















| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 103 | 2533 | 2005 | 92 | 272 | 179 |
| v/c Ratio | 0.78 | 0.53 | 0.50 | 0.09 | 0.61 | 0.53 |
| Control Delay | 70.9 | 2.7 | 11.1 | 1.4 | 54.8 | 16.1 |
| Queue Delay | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.9 | 2.7 | 11.1 | 1.4 | 54.8 | 16.1 |
| Queue Length 50th (ft) | 80 | 29 | 233 | 1 | 104 | 17 |
| Queue Length 95th (ft) | m#174 | 46 | 298 | m6 | 140 | 82 |
| Internal Link Dist (ft) | | 175 | 1004 | | 271 | |
| Turn Bay Length (ft) | | | | 450 | | |
| Base Capacity (vph) | 132 | 4778 | 3977 | 1017 | 1058 | 594 |
| Starvation Cap Reductn | 0 | 476 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 40 | 0 | 0 | 5 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.78 | 0.59 | 0.51 | 0.09 | 0.26 | 0.30 |

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Sample Road & NW 5th Ave

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (vph) | 95 | 2330 | 1845 | 85 | 250 | 165 |
| Future Volume (vph) | 95 | 2330 | 1845 | 85 | 250 | 165 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 9.0 | 9.0 |
| Lane Util. Factor | 1.00 | 0.86 | 0.86 | 1.00 | 0.97 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 0.85 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 1770 | 6408 | 6408 | 1583 | 3433 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 1770 | 6408 | 6408 | 1583 | 3433 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 103 | 2533 | 2005 | 92 | 272 | 179 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 35 | 0 | 134 |
| Lane Group Flow (vph) | 103 | 2533 | 2005 | 57 | 272 | 45 |
| Turn Type | Prot | NA | NA | Perm | Prot | Perm |
| Protected Phases | 3 | 1 2 3 | 1 2 | | 4 | |
| Permitted Phases | | | | 1 2 | | 4 |
| Actuated Green, G (s) | 7.0 | 87.5 | 72.5 | 72.5 | 15.5 | 15.5 |
| Effective Green, g (s) | 9.0 | 89.5 | 74.5 | 74.5 | 15.5 | 15.5 |
| Actuated g/C Ratio | 0.08 | 0.75 | 0.62 | 0.62 | 0.13 | 0.13 |
| Clearance Time (s) | 8.0 | | | | 9.0 | 9.0 |
| Vehicle Extension (s) | 1.5 | | | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 132 | 4779 | 3978 | 982 | 443 | 204 |
| v/s Ratio Prot | c0.06 | c0.40 | 0.31 | | c0.08 | |
| v/s Ratio Perm | | | | 0.04 | | 0.03 |
| v/c Ratio | 0.78 | 0.53 | 0.50 | 0.06 | 0.61 | 0.22 |
| Uniform Delay, d1 | 54.5 | 6.4 | 12.6 | 8.9 | 49.4 | 46.8 |
| Progression Factor | 0.71 | 0.34 | 0.82 | 0.55 | 1.00 | 1.00 |
| Incremental Delay, d2 | 19.9 | 0.0 | 0.0 | 0.0 | 1.8 | 0.2 |
| Delay (s) | 58.5 | 2.2 | 10.3 | 4.9 | 51.2 | 47.0 |
| Level of Service | E | A | B | A | D | D |
| Approach Delay (s) | | 4.4 | 10.1 | | 49.5 | |
| Approach LOS | | A | B | | D | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 10.6 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.62 | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | 27.0 |
| Intersection Capacity Utilization | | | 56.6% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

Queues

3: Sample Road & I-95 SB RAMP












| | → | ↘ | ← | ↙ | ↘ |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | EBR | WBT | SBL2 | SBR |
| Lane Group Flow (vph) | 1717 | 1053 | 1500 | 526 | 579 |
| v/c Ratio | 0.48 | 0.67 | 0.53 | 0.59 | 0.80 |
| Control Delay | 6.3 | 10.1 | 7.9 | 22.5 | 30.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.3 | 10.1 | 7.9 | 22.5 | 30.9 |
| Queue Length 50th (ft) | 86 | 344 | 146 | 84 | 109 |
| Queue Length 95th (ft) | 159 | 456 | 168 | 127 | #189 |
| Internal Link Dist (ft) | 1004 | | 259 | | |
| Turn Bay Length (ft) | | 250 | | | |
| Base Capacity (vph) | 3567 | 1583 | 2830 | 909 | 738 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.67 | 0.53 | 0.58 | 0.78 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Sample Road & I-95 SB RAMP

| |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | SBL2 | SBL | SBR | NWL | NWR |
| Lane Configurations | | ↑↑↑ | ↑ | | ↑↑↑ | | ↑↑ | | ↑↑ | | |
| Traffic Volume (vph) | 0 | 1580 | 1000 | 0 | 1380 | 0 | 500 | 0 | 550 | 0 | 0 |
| Future Volume (vph) | 0 | 1580 | 1000 | 0 | 1380 | 0 | 500 | 0 | 550 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 5.5 | 2.0 | | 5.5 | | 5.5 | | 5.5 | | |
| Lane Util. Factor | | 0.86 | 1.00 | | 0.91 | | 0.97 | | 0.88 | | |
| Flt | | 1.00 | 0.85 | | 1.00 | | 1.00 | | 0.85 | | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (prot) | | 6408 | 1583 | | 5085 | | 3433 | | 2787 | | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (perm) | | 6408 | 1583 | | 5085 | | 3433 | | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 1717 | 1053 | 0 | 1500 | 0 | 526 | 0 | 579 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1717 | 1053 | 0 | 1500 | 0 | 526 | 0 | 579 | 0 | 0 |
| Turn Type | | NA | Free | | NA | | Prot | | Prot | | |
| Protected Phases | | 6 | | | 2 | | 3 | | 3 | | |
| Permitted Phases | | | Free | | | | | | | | |
| Actuated Green, G (s) | | 31.4 | 60.0 | | 31.4 | | 13.6 | | 13.6 | | |
| Effective Green, g (s) | | 33.4 | 60.0 | | 33.4 | | 15.6 | | 15.6 | | |
| Actuated g/C Ratio | | 0.56 | 1.00 | | 0.56 | | 0.26 | | 0.26 | | |
| Clearance Time (s) | | 7.5 | | | 7.5 | | 7.5 | | 7.5 | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 2.5 | | 2.5 | | |
| Lane Grp Cap (vph) | | 3567 | 1583 | | 2830 | | 892 | | 724 | | |
| v/s Ratio Prot | | 0.27 | | | 0.29 | | 0.15 | | 0.21 | | |
| v/s Ratio Perm | | | c0.67 | | | | | | | | |
| v/c Ratio | | 0.48 | 0.67 | | 0.53 | | 0.59 | | 0.80 | | |
| Uniform Delay, d1 | | 8.1 | 0.0 | | 8.4 | | 19.4 | | 20.7 | | |
| Progression Factor | | 0.72 | 1.00 | | 0.88 | | 1.00 | | 1.00 | | |
| Incremental Delay, d2 | | 0.4 | 2.0 | | 0.5 | | 0.8 | | 6.0 | | |
| Delay (s) | | 6.2 | 2.0 | | 7.9 | | 20.2 | | 26.7 | | |
| Level of Service | | A | A | | A | | C | | C | | |
| Approach Delay (s) | | 4.6 | | | 7.9 | | | 23.6 | | 0.0 | |
| Approach LOS | | A | | | A | | | C | | A | |
| Intersection Summary | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 9.4 | | | | HCM 2000 Level of Service | | A | | |
| HCM 2000 Volume to Capacity ratio | | | 0.81 | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | | Sum of lost time (s) | | 11.0 | | |
| Intersection Capacity Utilization | | | 63.4% | | | | ICU Level of Service | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | |

c Critical Lane Group

Queues













| | → | ← | ↖ | ↗ | |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | WBT | WBR | NBL2 | NBR |
| Lane Group Flow (vph) | 1293 | 1957 | 600 | 579 | 442 |
| v/c Ratio | 0.45 | 0.68 | 0.38 | 0.68 | 0.64 |
| Control Delay | 6.8 | 7.3 | 0.2 | 25.0 | 24.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.8 | 7.3 | 0.2 | 25.0 | 24.9 |
| Queue Length 50th (ft) | 111 | 172 | 0 | 95 | 79 |
| Queue Length 95th (ft) | 97 | m160 | m0 | 143 | 126 |
| Internal Link Dist (ft) | 270 | 1155 | | | |
| Turn Bay Length (ft) | | | 250 | | |
| Base Capacity (vph) | 2895 | 2895 | 1583 | 886 | 719 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.45 | 0.68 | 0.38 | 0.65 | 0.61 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis











4: I-95 NB RAMP & Sample Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL2 | NBL | NBR | SEL | SER | |
| Lane Configurations | | ↑↑↑ | | | ↑↑↑ | ↑ | ↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1190 | 0 | 0 | 1800 | 570 | 550 | 0 | 420 | 0 | 0 | |
| Future Volume (vph) | 0 | 1190 | 0 | 0 | 1800 | 570 | 550 | 0 | 420 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | 5.5 | | | 5.5 | 2.0 | 5.5 | | 5.5 | | | |
| Lane Util. Factor | | 0.91 | | | 0.91 | 1.00 | 0.97 | | 0.88 | | | |
| Flt | | 1.00 | | | 1.00 | 0.85 | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 5085 | | | 5085 | 1583 | 3433 | | 2787 | | | |
| Flt Permitted | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 5085 | | | 5085 | 1583 | 3433 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 1293 | 0 | 0 | 1957 | 600 | 579 | 0 | 442 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 1293 | 0 | 0 | 1957 | 600 | 579 | 0 | 442 | 0 | 0 | |
| Turn Type | | NA | | | NA | Free | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 4 | | 4 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | | 32.2 | | | 32.2 | 60.0 | 12.8 | | 12.8 | | | |
| Effective Green, g (s) | | 34.2 | | | 34.2 | 60.0 | 14.8 | | 14.8 | | | |
| Actuated g/C Ratio | | 0.57 | | | 0.57 | 1.00 | 0.25 | | 0.25 | | | |
| Clearance Time (s) | | 7.5 | | | 7.5 | | 7.5 | | 7.5 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 2.5 | | 2.5 | | | |
| Lane Grp Cap (vph) | | 2898 | | | 2898 | 1583 | 846 | | 687 | | | |
| v/s Ratio Prot | | 0.25 | | | c0.38 | | c0.17 | | 0.16 | | | |
| v/s Ratio Perm | | | | | | 0.38 | | | | | | |
| v/c Ratio | | 0.45 | | | 0.68 | 0.38 | 0.68 | | 0.64 | | | |
| Uniform Delay, d1 | | 7.4 | | | 9.0 | 0.0 | 20.5 | | 20.2 | | | |
| Progression Factor | | 0.84 | | | 0.75 | 1.00 | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 0.4 | | | 0.3 | 0.2 | 2.1 | | 1.8 | | | |
| Delay (s) | | 6.7 | | | 7.1 | 0.2 | 22.6 | | 22.1 | | | |
| Level of Service | | A | | | A | A | C | | C | | | |
| Approach Delay (s) | | 6.7 | | | 5.5 | | | 22.4 | | 0.0 | | |
| Approach LOS | | A | | | A | | | C | | A | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 9.3 | | | | | | | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.68 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | | | | | | Sum of lost time (s) | 11.0 |
| Intersection Capacity Utilization | | | 58.4% | | | | | | | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Queues

5: NE 3rd Ave & Sample Road































| |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 424 | 1326 | 60 | 1847 | 250 | 228 | 82 | 109 | 223 | 571 |
| v/c Ratio | 1.00 | 0.60 | 0.48 | 1.00 | 0.73 | 0.45 | 0.15 | 0.32 | 0.44 | 1.04 |
| Control Delay | 87.3 | 20.6 | 66.9 | 60.1 | 46.2 | 39.3 | 0.6 | 28.7 | 39.2 | 80.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 87.3 | 20.6 | 66.9 | 60.1 | 46.2 | 39.3 | 0.6 | 28.7 | 39.2 | 80.7 |
| Queue Length 50th (ft) | 168 | 252 | 45 | ~524 | 140 | 146 | 0 | 56 | 143 | ~381 |
| Queue Length 95th (ft) | #281 | 307 | 91 | #645 | #224 | 225 | 0 | 98 | 219 | #604 |
| Internal Link Dist (ft) | | 1155 | | 834 | | 912 | | | 742 | |
| Turn Bay Length (ft) | 550 | | 490 | | 250 | | 225 | 200 | | |
| Base Capacity (vph) | 425 | 2194 | 131 | 1838 | 341 | 509 | 544 | 338 | 507 | 548 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.00 | 0.60 | 0.46 | 1.00 | 0.73 | 0.45 | 0.15 | 0.32 | 0.44 | 1.04 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

5: NE 3rd Ave & Sample Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |   | |   |   | |   |  |  |   |   |   |
| Traffic Volume (vph) | 390 | 1075 | 145 | 55 | 1615 | 85 | 230 | 210 | 75 | 100 | 205 | 525 |
| Future Volume (vph) | 390 | 1075 | 145 | 55 | 1615 | 85 | 230 | 210 | 75 | 100 | 205 | 525 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.91 | | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3400 | 4946 | | 1752 | 4998 | | 1752 | 1845 | 1568 | 1752 | 1845 | 1568 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.50 | 1.00 | 1.00 | 0.49 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3400 | 4946 | | 1752 | 4998 | | 921 | 1845 | 1568 | 913 | 1845 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 424 | 1168 | 158 | 60 | 1755 | 92 | 250 | 228 | 82 | 109 | 223 | 571 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 4 | 0 | 0 | 0 | 59 | 0 | 0 | 117 |
| Lane Group Flow (vph) | 424 | 1312 | 0 | 60 | 1843 | 0 | 250 | 228 | 23 | 109 | 223 | 454 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Prot | NA | | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | | | | | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 13.0 | 49.5 | | 5.5 | 42.0 | | 39.1 | 33.1 | 33.1 | 38.9 | 33.0 | 33.0 |
| Effective Green, g (s) | 15.0 | 51.5 | | 7.5 | 44.0 | | 39.1 | 33.1 | 33.1 | 38.9 | 33.0 | 33.0 |
| Actuated g/C Ratio | 0.12 | 0.43 | | 0.06 | 0.37 | | 0.33 | 0.28 | 0.28 | 0.32 | 0.28 | 0.28 |
| Clearance Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 1.5 | 3.0 | | 1.5 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 425 | 2122 | | 109 | 1832 | | 341 | 508 | 432 | 337 | 507 | 431 |
| v/s Ratio Prot | c0.12 | 0.27 | | 0.03 | c0.37 | | c0.04 | 0.12 | | 0.02 | 0.12 | |
| v/s Ratio Perm | | | | | | | 0.20 | | 0.01 | 0.09 | | c0.29 |
| v/c Ratio | 1.00 | 0.62 | | 0.55 | 1.01 | | 0.73 | 0.45 | 0.05 | 0.32 | 0.44 | 1.05 |
| Uniform Delay, d1 | 52.5 | 26.6 | | 54.6 | 38.0 | | 36.0 | 35.9 | 31.9 | 29.4 | 35.9 | 43.5 |
| Progression Factor | 0.87 | 0.75 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 40.2 | 1.2 | | 3.4 | 22.4 | | 6.9 | 0.2 | 0.0 | 0.2 | 0.2 | 57.8 |
| Delay (s) | 86.0 | 21.2 | | 58.0 | 60.4 | | 42.9 | 36.1 | 31.9 | 29.6 | 36.1 | 101.3 |
| Level of Service | F | C | | E | E | | D | D | C | C | D | F |
| Approach Delay (s) | | 36.9 | | | 60.3 | | | 38.5 | | | 76.5 | |
| Approach LOS | | D | | | E | | | D | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 52.8 | | | | HCM 2000 Level of Service | | | | D | |
| HCM 2000 Volume to Capacity ratio | | | 1.00 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | | Sum of lost time (s) | | | 22.0 | | |
| Intersection Capacity Utilization | | | 92.5% | | | | ICU Level of Service | | | F | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

2040AM Build 1_Sample Road.syn

Queues

1: SW 12th Avenue & Hillsboro Blvd


























| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|-------|------|------|------|------|-------|-------|-------|------|
| Lane Group Flow (vph) | 49 | 2316 | 299 | 2397 | 65 | 250 | 11 | 402 | 274 | 281 | 359 |
| v/c Ratio | 0.47 | 0.89 | 1.03 | 0.87 | 0.05 | 0.73 | 0.06 | 1.05 | 0.97 | 0.97 | 0.92 |
| Control Delay | 87.7 | 40.3 | 134.7 | 19.9 | 0.2 | 82.0 | 63.8 | 109.3 | 110.8 | 111.2 | 62.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 87.7 | 40.3 | 134.7 | 21.1 | 0.2 | 82.0 | 63.8 | 109.3 | 110.8 | 111.2 | 62.2 |
| Queue Length 50th (ft) | 51 | 778 | ~175 | 260 | 0 | 132 | 11 | ~399 | 304 | 311 | 233 |
| Queue Length 95th (ft) | 100 | 900 | m#261 | 533 | m1 | 177 | 31 | #574 | #504 | #516 | #420 |
| Internal Link Dist (ft) | | 580 | | 548 | | | 436 | | | 396 | |
| Turn Bay Length (ft) | 450 | | 375 | | 350 | 225 | | 250 | 200 | | |
| Base Capacity (vph) | 105 | 2598 | 289 | 2747 | 1202 | 686 | 372 | 383 | 283 | 289 | 392 |
| Starvation Cap Reductn | 0 | 0 | 0 | 166 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.89 | 1.03 | 0.93 | 0.05 | 0.36 | 0.03 | 1.05 | 0.97 | 0.97 | 0.92 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

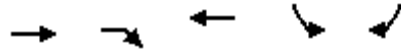
HCM Signalized Intersection Capacity Analysis

1: SW 12th Avenue & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 45 | 1985 | 145 | 275 | 2205 | 60 | 230 | 10 | 370 | 420 | 90 | 330 |
| Future Volume (vph) | 45 | 1985 | 145 | 275 | 2205 | 60 | 230 | 10 | 370 | 420 | 90 | 330 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.0 | 6.0 | 6.0 | 6.5 | 6.0 | 6.0 | 6.5 |
| Lane Util. Factor | 1.00 | 0.91 | | 0.97 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |
| Frt | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 |
| Satd. Flow (prot) | 1770 | 5033 | | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1681 | 1714 | 1583 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.97 | 1.00 |
| Satd. Flow (perm) | 1770 | 5033 | | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1681 | 1714 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 49 | 2158 | 158 | 299 | 2397 | 65 | 250 | 11 | 402 | 457 | 98 | 359 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 0 | 18 | 0 | 0 | 54 | 0 | 0 | 56 |
| Lane Group Flow (vph) | 49 | 2312 | 0 | 299 | 2397 | 47 | 250 | 11 | 348 | 274 | 281 | 303 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | Prot | NA | | Prot | NA | pm+ov | Split | NA | pm+ov | Split | NA | pm+ov |
| Protected Phases | 1 | 6 | | 5 | 2 | 3 | 4 | 4 | 5 | 3 | 3 | 1 |
| Permitted Phases | | | | | | 2 | | | 4 | | | 3 |
| Actuated Green, G (s) | 7.5 | 80.4 | | 11.5 | 84.4 | 111.4 | 16.1 | 16.1 | 27.6 | 27.0 | 27.0 | 34.5 |
| Effective Green, g (s) | 9.5 | 82.4 | | 13.5 | 86.4 | 115.4 | 16.1 | 16.1 | 27.6 | 27.0 | 27.0 | 34.5 |
| Actuated g/C Ratio | 0.06 | 0.52 | | 0.08 | 0.54 | 0.72 | 0.10 | 0.10 | 0.17 | 0.17 | 0.17 | 0.22 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | 6.0 | 6.0 | 6.0 | 6.5 | 6.0 | 6.0 | 6.5 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 2.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.5 |
| Lane Grp Cap (vph) | 105 | 2591 | | 289 | 2745 | 1141 | 345 | 187 | 273 | 283 | 289 | 341 |
| v/s Ratio Prot | 0.03 | 0.46 | | 0.09 | c0.47 | 0.01 | 0.07 | 0.01 | c0.09 | 0.16 | c0.16 | 0.04 |
| v/s Ratio Perm | | | | | | 0.02 | | | 0.13 | | | 0.15 |
| v/c Ratio | 0.47 | 0.89 | | 1.03 | 0.87 | 0.04 | 0.72 | 0.06 | 1.28 | 0.97 | 0.97 | 0.89 |
| Uniform Delay, d1 | 72.8 | 34.8 | | 73.2 | 32.0 | 6.4 | 69.8 | 65.1 | 66.2 | 66.1 | 66.1 | 60.9 |
| Progression Factor | 1.00 | 1.00 | | 1.22 | 0.52 | 0.08 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.2 | 5.2 | | 52.4 | 2.9 | 0.0 | 6.3 | 0.0 | 149.3 | 44.1 | 44.9 | 22.8 |
| Delay (s) | 74.0 | 40.0 | | 141.5 | 19.4 | 0.5 | 76.1 | 65.1 | 215.5 | 110.1 | 111.1 | 83.7 |
| Level of Service | E | D | | F | B | A | E | E | F | F | F | F |
| Approach Delay (s) | | 40.7 | | | 32.2 | | | 160.4 | | | 100.0 | |
| Approach LOS | | D | | | C | | | F | | | F | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 57.1 | HCM 2000 Level of Service | | | | E | | | | |
| HCM 2000 Volume to Capacity ratio | | | 1.00 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 160.0 | Sum of lost time (s) | | | | 23.0 | | | | |
| Intersection Capacity Utilization | | | 92.7% | ICU Level of Service | | | | F | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: Hillsboro Bvd & I-95 SB RAMP














| Lane Group | EBT | EBR | WBT | SBL2 | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 2114 | 874 | 2098 | 695 | 642 |
| v/c Ratio | 0.42 | 0.55 | 0.81 | 0.90 | 0.53 |
| Control Delay | 0.1 | 0.5 | 33.3 | 57.5 | 34.3 |
| Queue Delay | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Total Delay | 0.1 | 0.5 | 33.6 | 57.5 | 34.3 |
| Queue Length 50th (ft) | 0 | 0 | 665 | 653 | 270 |
| Queue Length 95th (ft) | m0 | m0 | 657 | 816 | 321 |
| Internal Link Dist (ft) | 548 | | 319 | | |
| Turn Bay Length (ft) | 150 | | | | |
| Base Capacity (vph) | 5085 | 1583 | 2583 | 835 | 1315 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 109 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.42 | 0.55 | 0.85 | 0.83 | 0.49 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Hillsboro Bvd & I-95 SB RAMP

| |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------|---|---|---|---|---|---|--|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | SBL2 | SBL | SBR | NWL | NWR |
| Lane Configurations | | ↑↑↑ | ↑ | | ↑↑↑ | | ↑ | | ↑↑ | | |
| Traffic Volume (vph) | 0 | 1945 | 830 | 0 | 1930 | 0 | 660 | 0 | 610 | 0 | 0 |
| Future Volume (vph) | 0 | 1945 | 830 | 0 | 1930 | 0 | 660 | 0 | 610 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 2.0 | 2.0 | | 4.5 | | 4.5 | | 4.5 | | |
| Lane Util. Factor | | 0.91 | 1.00 | | 0.91 | | 1.00 | | 0.88 | | |
| Frt | | 1.00 | 0.85 | | 1.00 | | 1.00 | | 0.85 | | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (prot) | | 5085 | 1583 | | 5085 | | 1770 | | 2787 | | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | |
| Satd. Flow (perm) | | 5085 | 1583 | | 5085 | | 1770 | | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 2114 | 874 | 0 | 2098 | 0 | 695 | 0 | 642 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2114 | 874 | 0 | 2098 | 0 | 695 | 0 | 642 | 0 | 0 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Turn Type | | NA | Perm | | NA | | Prot | | Prot | | |
| Protected Phases | | Free! | | | 2 | | 8! | | 3 | | |
| Permitted Phases | | | Free | | | | | | | | |
| Actuated Green, G (s) | | 160.0 | 160.0 | | 79.3 | | 67.7 | | 67.7 | | |
| Effective Green, g (s) | | 160.0 | 160.0 | | 81.3 | | 69.7 | | 69.7 | | |
| Actuated g/C Ratio | | 1.00 | 1.00 | | 0.51 | | 0.44 | | 0.44 | | |
| Clearance Time (s) | | | | | 6.5 | | 6.5 | | 6.5 | | |
| Vehicle Extension (s) | | | | | 3.0 | | 2.5 | | 2.5 | | |
| Lane Grp Cap (vph) | | 5085 | 1583 | | 2583 | | 771 | | 1214 | | |
| v/s Ratio Prot | | 0.42 | | | c0.41 | | c0.39 | | 0.23 | | |
| v/s Ratio Perm | | | 0.55 | | | | | | | | |
| v/c Ratio | | 0.42 | 0.55 | | 0.81 | | 0.90 | | 0.53 | | |
| Uniform Delay, d1 | | 0.0 | 0.0 | | 33.0 | | 42.0 | | 33.1 | | |
| Progression Factor | | 1.00 | 1.00 | | 0.91 | | 1.00 | | 1.00 | | |
| Incremental Delay, d2 | | 0.1 | 0.5 | | 2.1 | | 13.7 | | 0.3 | | |
| Delay (s) | | 0.1 | 0.5 | | 32.1 | | 55.7 | | 33.4 | | |
| Level of Service | | A | A | | C | | E | | C | | |
| Approach Delay (s) | | 0.2 | | | 32.1 | | | 45.0 | | 0.0 | |
| Approach LOS | | A | | | C | | | D | | A | |
| Intersection Summary | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 20.0 | | | | HCM 2000 Level of Service | | | B | |
| HCM 2000 Volume to Capacity ratio | | | 0.85 | | | | | | | | |
| Actuated Cycle Length (s) | | | 160.0 | | | | Sum of lost time (s) | | | 9.0 | |
| Intersection Capacity Utilization | | | 66.1% | | | | ICU Level of Service | | | C | |
| Analysis Period (min) | | | 15 | | | | | | | | |
| ! Phase conflict between lane groups. | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | |

Queues

3: I-95 NB Ramp & Hillsboro Blvd















| Lane Group | EBT | WBT | WBR | NBL | NBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 2038 | 2315 | 804 | 750 | 789 |
| v/c Ratio | 0.69 | 0.79 | 0.51 | 0.44 | 0.81 |
| Control Delay | 12.0 | 14.2 | 0.7 | 21.4 | 30.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 12.0 | 14.2 | 0.7 | 21.4 | 30.1 |
| Queue Length 50th (ft) | 268 | 470 | 0 | 100 | 186 |
| Queue Length 95th (ft) | 352 | m367 | m0 | 132 | 263 |
| Internal Link Dist (ft) | 286 | 371 | | | |
| Turn Bay Length (ft) | | | 250 | 350 | 350 |
| Base Capacity (vph) | 2949 | 2949 | 1568 | 1746 | 1006 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.69 | 0.79 | 0.51 | 0.43 | 0.78 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

3: I-95 NB Ramp & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑↑ | | | ↑↑↑ | ↑ | ↑↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1875 | 0 | 0 | 2130 | 740 | 690 | 0 | 750 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 1875 | 0 | 0 | 2130 | 740 | 690 | 0 | 750 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | 2.0 | 2.0 | | 2.0 | | | |
| Lane Util. Factor | | 0.91 | | | 0.91 | 1.00 | 0.94 | | 0.88 | | | |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 5085 | | | 5085 | 1568 | 4990 | | 2787 | | | |
| Flt Permitted | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 5085 | | | 5085 | 1568 | 4990 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 2038 | 0 | 0 | 2315 | 804 | 750 | 0 | 789 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2038 | 0 | 0 | 2315 | 804 | 750 | 0 | 757 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 3% | 2% | 3% | 2% | 3% | 3% | 3% |
| Turn Type | | NA | | | NA | Free | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 4 | | 4 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | | 44.4 | | | 44.4 | 80.0 | 25.1 | | 25.1 | | | |
| Effective Green, g (s) | | 46.4 | | | 46.4 | 80.0 | 27.1 | | 27.1 | | | |
| Actuated g/C Ratio | | 0.58 | | | 0.58 | 1.00 | 0.34 | | 0.34 | | | |
| Clearance Time (s) | | 6.5 | | | 6.5 | | 4.0 | | 4.0 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | | 3.0 | | | |
| Lane Grp Cap (vph) | | 2949 | | | 2949 | 1568 | 1690 | | 944 | | | |
| v/s Ratio Prot | | 0.40 | | | c0.46 | | 0.15 | | c0.27 | | | |
| v/s Ratio Perm | | | | | | 0.51 | | | | | | |
| v/c Ratio | | 0.69 | | | 0.79 | 0.51 | 0.44 | | 0.80 | | | |
| Uniform Delay, d1 | | 11.8 | | | 13.0 | 0.0 | 20.6 | | 24.0 | | | |
| Progression Factor | | 0.90 | | | 0.97 | 1.00 | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 1.2 | | | 1.3 | 0.7 | 0.2 | | 5.0 | | | |
| Delay (s) | | 11.8 | | | 13.9 | 0.7 | 20.8 | | 29.0 | | | |
| Level of Service | | B | | | B | A | C | | C | | | |
| Approach Delay (s) | | 11.8 | | | 10.5 | | | 25.0 | | | 0.0 | |
| Approach LOS | | B | | | B | | | C | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 14.2 | | | HCM 2000 Level of Service | | | B | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.79 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | Sum of lost time (s) | | | 6.5 | | | |
| Intersection Capacity Utilization | | | 69.5% | | | ICU Level of Service | | | C | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd

































| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|-------|------|------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 103 | 2413 | 337 | 152 | 2467 | 38 | 315 | 11 | 141 | 136 | 54 | 337 |
| v/c Ratio | 0.68 | 0.82 | 0.35 | 0.94 | 0.78 | 0.04 | 1.10 | 0.04 | 0.38 | 0.46 | 0.19 | 0.90 |
| Control Delay | 88.2 | 23.8 | 8.3 | 126.4 | 25.6 | 0.1 | 136.9 | 51.9 | 8.4 | 55.6 | 56.6 | 61.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 88.2 | 23.8 | 8.3 | 126.4 | 25.6 | 0.1 | 136.9 | 51.9 | 8.4 | 55.6 | 56.6 | 61.3 |
| Queue Length 50th (ft) | 55 | 569 | 79 | 161 | 661 | 0 | ~343 | 10 | 0 | 119 | 50 | 201 |
| Queue Length 95th (ft) | m78 | 754 | m137 | #307 | 876 | 0 | #407 | 27 | 49 | 166 | 86 | 303 |
| Internal Link Dist (ft) | | 660 | | | 631 | | | 513 | | | 403 | |
| Turn Bay Length (ft) | 300 | | 150 | 100 | | 200 | 125 | | | | | 340 |
| Base Capacity (vph) | 152 | 2934 | 976 | 162 | 3175 | 1028 | 287 | 442 | 492 | 295 | 442 | 492 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.68 | 0.82 | 0.35 | 0.94 | 0.78 | 0.04 | 1.10 | 0.02 | 0.29 | 0.46 | 0.12 | 0.68 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.













HCM Signalized Intersection Capacity Analysis

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |   |    |  |  |    |  |  |  |  |  |   |  | |
| Traffic Volume (vph) | 95 | 2220 | 310 | 140 | 2270 | 35 | 290 | 10 | 130 | 125 | 50 | 310 | |
| Future Volume (vph) | 95 | 2220 | 310 | 140 | 2270 | 35 | 290 | 10 | 130 | 125 | 50 | 310 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5085 | 1583 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.72 | 1.00 | 1.00 | 0.75 | 1.00 | 1.00 | |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 1770 | 5085 | 1583 | 1345 | 1863 | 1583 | 1398 | 1863 | 1583 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 103 | 2413 | 337 | 152 | 2467 | 38 | 315 | 11 | 141 | 136 | 54 | 337 | |
| RTOR Reduction (vph) | 0 | 0 | 63 | 0 | 0 | 14 | 0 | 0 | 119 | 0 | 0 | 129 | |
| Lane Group Flow (vph) | 103 | 2413 | 274 | 152 | 2467 | 24 | 315 | 11 | 22 | 136 | 54 | 208 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 | |
| Actuated Green, G (s) | 5.1 | 90.3 | 90.3 | 12.7 | 97.9 | 97.9 | 32.0 | 25.0 | 25.0 | 32.0 | 25.0 | 25.0 | |
| Effective Green, g (s) | 7.1 | 92.3 | 92.3 | 14.7 | 99.9 | 99.9 | 32.0 | 25.0 | 25.0 | 32.0 | 25.0 | 25.0 | |
| Actuated g/C Ratio | 0.04 | 0.58 | 0.58 | 0.09 | 0.62 | 0.62 | 0.20 | 0.16 | 0.16 | 0.20 | 0.16 | 0.16 | |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | |
| Vehicle Extension (s) | 2.0 | 3.0 | 3.0 | 1.5 | 3.0 | 3.0 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 152 | 2933 | 913 | 162 | 3174 | 988 | 287 | 291 | 247 | 295 | 291 | 247 | |
| v/s Ratio Prot | 0.03 | c0.47 | | c0.09 | 0.49 | | c0.05 | 0.01 | | 0.02 | 0.03 | | |
| v/s Ratio Perm | | | 0.17 | | | 0.01 | c0.17 | | 0.01 | 0.07 | | 0.13 | |
| v/c Ratio | 0.68 | 0.82 | 0.30 | 0.94 | 0.78 | 0.02 | 1.10 | 0.04 | 0.09 | 0.46 | 0.19 | 0.84 | |
| Uniform Delay, d1 | 75.3 | 27.3 | 17.3 | 72.2 | 21.9 | 11.5 | 63.2 | 57.3 | 57.8 | 55.6 | 58.7 | 65.6 | |
| Progression Factor | 0.97 | 0.76 | 0.72 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 6.3 | 1.9 | 0.6 | 51.6 | 1.9 | 0.0 | 81.8 | 0.0 | 0.1 | 0.4 | 0.1 | 21.3 | |
| Delay (s) | 79.1 | 22.5 | 13.1 | 123.8 | 23.9 | 11.5 | 144.9 | 57.3 | 57.8 | 56.0 | 58.8 | 86.8 | |
| Level of Service | E | C | B | F | C | B | F | E | E | E | E | F | |
| Approach Delay (s) | | 23.4 | | | 29.4 | | | 116.6 | | | 76.0 | | |
| Approach LOS | | C | | | C | | | F | | | E | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 36.8 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.90 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 160.0 | | | | | | | | | Sum of lost time (s) | 21.0 |
| Intersection Capacity Utilization | | | 92.9% | | | | | | | | | ICU Level of Service | F |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

1: S Military Trail & SR 869/SW 10th Street

























| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 397 | 1924 | 212 | 473 | 2571 | 554 | 223 | 717 | 391 | 272 | 967 | 538 |
| v/c Ratio | 1.35 | 1.04 | 0.22 | 1.34 | 1.35 | 0.54 | 1.16 | 1.07 | 0.70 | 1.18 | 1.36 | 1.27 |
| Control Delay | 233.2 | 74.0 | 10.9 | 220.7 | 188.2 | 12.5 | 184.0 | 121.5 | 51.3 | 184.5 | 223.2 | 181.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 233.2 | 74.0 | 10.9 | 220.7 | 188.2 | 12.5 | 184.0 | 121.5 | 51.3 | 184.5 | 223.2 | 181.6 |
| Queue Length 50th (ft) | ~313 | ~1286 | 69 | ~382 | ~2076 | 153 | ~159 | ~491 | 343 | ~197 | ~787 | ~672 |
| Queue Length 95th (ft) | #431 | #1413 | 115 | m#416 | m#2171 | m189 | #256 | #627 | 476 | #300 | #927 | #919 |
| Internal Link Dist (ft) | | 620 | | | 1082 | | | 569 | | | 457 | |
| Turn Bay Length (ft) | 550 | | 500 | 550 | | 500 | 300 | | 300 | 650 | | 650 |
| Base Capacity (vph) | 295 | 1848 | 980 | 352 | 1907 | 1022 | 192 | 670 | 559 | 230 | 709 | 422 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.35 | 1.04 | 0.22 | 1.34 | 1.35 | 0.54 | 1.16 | 1.07 | 0.70 | 1.18 | 1.36 | 1.27 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: S Military Trail & SR 869/SW 10th Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 365 | 1770 | 195 | 435 | 2365 | 510 | 205 | 660 | 360 | 250 | 890 | 495 |
| Future Volume (vph) | 365 | 1770 | 195 | 435 | 2365 | 510 | 205 | 660 | 360 | 250 | 890 | 495 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.5 | 4.0 | 5.9 | 5.5 | 4.0 | 5.9 | 5.9 | 5.9 | 5.5 | 5.9 | 5.9 | 5.9 |
| Lane Util. Factor | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 397 | 1924 | 212 | 473 | 2571 | 554 | 223 | 717 | 391 | 272 | 967 | 538 |
| RTOR Reduction (vph) | 0 | 0 | 32 | 0 | 0 | 30 | 0 | 0 | 47 | 0 | 0 | 105 |
| Lane Group Flow (vph) | 397 | 1924 | 180 | 473 | 2571 | 524 | 223 | 717 | 344 | 272 | 967 | 433 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | Perm |
| Protected Phases | 1 | 6 | 7 | 5 | 2 | 3 | 7 | 4 | 5 | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | | | 4 | | | 8 |
| Actuated Green, G (s) | 13.5 | 92.0 | 100.1 | 16.5 | 95.0 | 105.1 | 8.1 | 32.1 | 48.6 | 10.1 | 34.1 | 34.1 |
| Effective Green, g (s) | 15.5 | 94.0 | 104.1 | 18.5 | 97.0 | 109.1 | 10.1 | 34.1 | 52.6 | 12.1 | 36.1 | 36.1 |
| Actuated g/C Ratio | 0.09 | 0.52 | 0.58 | 0.10 | 0.54 | 0.61 | 0.06 | 0.19 | 0.29 | 0.07 | 0.20 | 0.20 |
| Clearance Time (s) | 7.5 | 6.0 | 7.9 | 7.5 | 6.0 | 7.9 | 7.9 | 7.9 | 7.5 | 7.9 | 7.9 | 7.9 |
| Vehicle Extension (s) | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 295 | 1848 | 915 | 352 | 1907 | 959 | 192 | 670 | 462 | 230 | 709 | 317 |
| v/s Ratio Prot | 0.12 | 0.54 | 0.01 | c0.14 | c0.73 | 0.04 | 0.06 | 0.20 | 0.08 | c0.08 | 0.27 | |
| v/s Ratio Perm | | | 0.10 | | | 0.29 | | | 0.14 | | | c0.27 |
| v/c Ratio | 1.35 | 1.04 | 0.20 | 1.34 | 1.35 | 0.55 | 1.16 | 1.07 | 0.75 | 1.18 | 1.36 | 1.37 |
| Uniform Delay, d1 | 82.2 | 43.0 | 18.1 | 80.8 | 41.5 | 20.9 | 85.0 | 73.0 | 57.6 | 84.0 | 72.0 | 72.0 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.07 | 0.82 | 0.73 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 176.5 | 32.5 | 0.0 | 161.4 | 158.0 | 0.1 | 115.2 | 55.1 | 5.6 | 117.6 | 172.8 | 184.0 |
| Delay (s) | 258.8 | 75.5 | 18.1 | 248.0 | 192.1 | 15.3 | 200.1 | 128.0 | 63.3 | 201.5 | 244.7 | 256.0 |
| Level of Service | F | E | B | F | F | B | F | F | E | F | F | F |
| Approach Delay (s) | | 99.4 | | | 172.2 | | | 121.1 | | | 241.5 | |
| Approach LOS | | F | | | F | | | F | | | F | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 158.2 | | | HCM 2000 Level of Service | | | F | | | |
| HCM 2000 Volume to Capacity ratio | | | 1.38 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | Sum of lost time (s) | | | 21.3 | | | |
| Intersection Capacity Utilization | | | 124.0% | | | ICU Level of Service | | | H | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Queues

2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|-------|-------|
| Lane Group Flow (vph) | 82 | 2505 | 152 | 2815 | 125 | 187 | 188 | 457 | 146 | 424 |
| v/c Ratio | 0.73 | 0.73 | 0.62 | 0.96 | 0.13 | 0.69 | 0.69 | 0.97 | 0.81 | 1.00 |
| Control Delay | 82.6 | 27.6 | 94.9 | 33.8 | 1.1 | 85.7 | 85.5 | 86.0 | 108.3 | 100.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 82.6 | 27.6 | 94.9 | 35.9 | 1.1 | 85.7 | 85.5 | 86.0 | 108.3 | 100.2 |
| Queue Length 50th (ft) | 49 | 404 | 90 | 1120 | 1 | 223 | 224 | 452 | 171 | 234 |
| Queue Length 95th (ft) | m51 | m389 | m105 | m812 | m2 | 324 | 325 | #692 | #298 | #372 |
| Internal Link Dist (ft) | | 818 | | 925 | | | 695 | | 185 | |
| Turn Bay Length (ft) | 700 | | 750 | | 750 | | | 150 | | |
| Base Capacity (vph) | 112 | 3438 | 247 | 2938 | 933 | 270 | 272 | 472 | 180 | 424 |
| Starvation Cap Reductn | 0 | 0 | 0 | 64 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.73 | 0.73 | 0.62 | 0.98 | 0.13 | 0.69 | 0.69 | 0.97 | 0.81 | 1.00 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

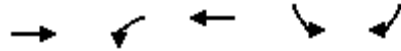


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 75 | 2235 | 70 | 140 | 2590 | 115 | 330 | 15 | 420 | 130 | 5 | 390 |
| Future Volume (vph) | 75 | 2235 | 70 | 140 | 2590 | 115 | 330 | 15 | 420 | 130 | 5 | 390 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.86 | | 0.97 | 0.91 | 1.00 | 0.95 | 0.95 | 1.00 | | 1.00 | 0.88 |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 0.96 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (prot) | 3367 | 6379 | | 3433 | 5085 | 1524 | 1681 | 1692 | 1583 | | 1543 | 2030 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 0.96 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (perm) | 3367 | 6379 | | 3433 | 5085 | 1524 | 1681 | 1692 | 1583 | | 1543 | 2030 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 82 | 2429 | 76 | 152 | 2815 | 125 | 359 | 16 | 457 | 141 | 5 | 424 |
| RTOR Reduction (vph) | 0 | 2 | 0 | 0 | 0 | 53 | 0 | 0 | 68 | 0 | 0 | 75 |
| Lane Group Flow (vph) | 82 | 2503 | 0 | 152 | 2815 | 72 | 187 | 188 | 389 | 0 | 146 | 349 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 6% | 2% | 2% | 2% | 18% | 2% | 40% |
| Turn Type | Prot | NA | | Prot | NA | Prot | Split | NA | pt+ov | Split | NA | pt+ov |
| Protected Phases | 1 | 6 | | 5 | 2 | 2 | 3 | 3 | 3 5 | 4 | 4 | 4 1 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | 4.0 | 95.0 | | 11.0 | 102.0 | 102.0 | 29.0 | 29.0 | 46.0 | | 21.0 | 31.0 |
| Effective Green, g (s) | 6.0 | 97.0 | | 13.0 | 104.0 | 104.0 | 29.0 | 29.0 | 46.0 | | 21.0 | 31.0 |
| Actuated g/C Ratio | 0.03 | 0.54 | | 0.07 | 0.58 | 0.58 | 0.16 | 0.16 | 0.26 | | 0.12 | 0.17 |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 112 | 3437 | | 247 | 2938 | 880 | 270 | 272 | 404 | | 180 | 349 |
| v/s Ratio Prot | 0.02 | 0.39 | | 0.04 | c0.55 | 0.05 | 0.11 | 0.11 | c0.25 | | 0.09 | c0.17 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | 0.73 | 0.73 | | 0.62 | 0.96 | 0.08 | 0.69 | 0.69 | 0.96 | | 0.81 | 1.00 |
| Uniform Delay, d1 | 86.2 | 31.5 | | 81.1 | 35.9 | 16.8 | 71.3 | 71.3 | 66.2 | | 77.6 | 74.5 |
| Progression Factor | 0.92 | 0.87 | | 1.10 | 0.80 | 0.41 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.9 | 0.1 | | 1.8 | 5.0 | 0.1 | 7.5 | 7.4 | 35.1 | | 23.4 | 47.6 |
| Delay (s) | 81.6 | 27.5 | | 91.1 | 33.6 | 7.0 | 78.8 | 78.6 | 101.3 | | 101.0 | 122.0 |
| Level of Service | F | C | | F | C | A | E | E | F | | F | F |
| Approach Delay (s) | | 29.2 | | | 35.4 | | | 91.1 | | | 116.7 | |
| Approach LOS | | C | | | D | | | F | | | F | |

| Intersection Summary | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 46.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 1.02 | | |
| Actuated Cycle Length (s) | 180.0 | Sum of lost time (s) | 22.0 |
| Intersection Capacity Utilization | 89.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

Queues

3: SR 869/SW 10th Street & I-95 SB Off-Ramp




















| Lane Group | EBT | WBL | WBT | SBL | SBR |
|-------------------------|--------|-------|------|------|-------|
| Lane Group Flow (vph) | 3003 | 884 | 1799 | 326 | 1253 |
| v/c Ratio | 1.35dr | 1.05 | 0.58 | 0.28 | 1.34 |
| Control Delay | 147.8 | 99.0 | 9.1 | 44.6 | 203.1 |
| Queue Delay | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Total Delay | 147.8 | 99.0 | 9.4 | 44.6 | 203.1 |
| Queue Length 50th (ft) | ~1081 | ~428 | 180 | 146 | ~1089 |
| Queue Length 95th (ft) | #1118 | m#492 | m175 | 190 | #1240 |
| Internal Link Dist (ft) | 925 | | 295 | | |
| Turn Bay Length (ft) | | 500 | | 500 | 500 |
| Base Capacity (vph) | 2412 | 839 | 3121 | 1155 | 938 |
| Starvation Cap Reductn | 0 | 0 | 611 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 317 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.25 | 1.05 | 0.72 | 0.28 | 1.34 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

HCM Signalized Intersection Capacity Analysis

3: SR 869/SW 10th Street & I-95 SB Off-Ramp

| |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  | | | | |  | |  |
| Traffic Volume (vph) | 0 | 2065 | 720 | 840 | 1655 | 0 | 0 | 0 | 0 | 310 | 0 | 1190 |
| Future Volume (vph) | 0 | 2065 | 720 | 840 | 1655 | 0 | 0 | 0 | 0 | 310 | 0 | 1190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.0 | | 4.0 | 4.5 | | | | | 4.4 | | 4.4 |
| Lane Util. Factor | | 0.81 | | 0.97 | 0.91 | | | | | 0.97 | | 0.88 |
| Frt | | 0.96 | | 1.00 | 1.00 | | | | | 1.00 | | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | 0.95 | | 1.00 |
| Satd. Flow (prot) | | 7258 | | 3433 | 5085 | | | | | 3433 | | 2787 |
| Flt Permitted | | 1.00 | | 0.95 | 1.00 | | | | | 0.95 | | 1.00 |
| Satd. Flow (perm) | | 7258 | | 3433 | 5085 | | | | | 3433 | | 2787 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.95 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 2245 | 758 | 884 | 1799 | 0 | 0 | 0 | 0 | 326 | 0 | 1253 |
| RTOR Reduction (vph) | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2969 | 0 | 884 | 1799 | 0 | 0 | 0 | 0 | 326 | 0 | 1253 |
| Turn Type | | NA | | Prot | NA | | | | | Prot | | Prot |
| Protected Phases | | 6 | | 5 4 | 2 4 | | | | | 3 | | 3 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 57.0 | | 39.6 | 108.5 | | | | | 58.6 | | 58.6 |
| Effective Green, g (s) | | 59.0 | | 43.6 | 106.1 | | | | | 60.6 | | 60.6 |
| Actuated g/C Ratio | | 0.33 | | 0.24 | 0.59 | | | | | 0.34 | | 0.34 |
| Clearance Time (s) | | 6.0 | | | | | | | | 6.4 | | 6.4 |
| Vehicle Extension (s) | | 3.0 | | | | | | | | 2.0 | | 2.0 |
| Lane Grp Cap (vph) | | 2379 | | 831 | 2997 | | | | | 1155 | | 938 |
| v/s Ratio Prot | | c0.41 | | c0.26 | 0.35 | | | | | 0.09 | | c0.45 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 1.35dr | | 1.06 | 0.60 | | | | | 0.28 | | 1.34 |
| Uniform Delay, d1 | | 60.5 | | 68.2 | 23.5 | | | | | 43.8 | | 59.7 |
| Progression Factor | | 0.67 | | 1.23 | 0.40 | | | | | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 114.0 | | 46.8 | 0.3 | | | | | 0.0 | | 158.4 |
| Delay (s) | | 154.8 | | 130.4 | 9.8 | | | | | 43.8 | | 218.1 |
| Level of Service | | F | | F | A | | | | | D | | F |
| Approach Delay (s) | | 154.8 | | | 49.5 | | | 0.0 | | | 182.1 | |
| Approach LOS | | F | | | D | | | A | | | F | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 121.9 | | | HCM 2000 Level of Service | | | | F | | |
| HCM 2000 Volume to Capacity ratio | | | 1.23 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | Sum of lost time (s) | | | | 16.8 | | |
| Intersection Capacity Utilization | | | 81.0% | | | ICU Level of Service | | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| dr Defacto Right Lane. Recode with 1 though lane as a right lane. | | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues



| Lane Group | EBT | EBR | WBT | NBL | NBR |
|-------------------------|------|------|------|-------|-------|
| Lane Group Flow (vph) | 1495 | 1053 | 2071 | 958 | 716 |
| v/c Ratio | 0.44 | 0.38 | 0.35 | 1.09 | 1.13 |
| Control Delay | 3.7 | 1.4 | 5.2 | 125.4 | 141.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 3.8 | 1.4 | 5.2 | 125.4 | 141.3 |
| Queue Length 50th (ft) | 121 | 0 | 46 | ~450 | ~428 |
| Queue Length 95th (ft) | m102 | m0 | 69 | #545 | #541 |
| Internal Link Dist (ft) | 260 | | 630 | 1225 | |
| Turn Bay Length (ft) | | 700 | | 410 | 430 |
| Base Capacity (vph) | 3390 | 2787 | 5846 | 876 | 633 |
| Starvation Cap Reductn | 236 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 37 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.38 | 0.35 | 1.09 | 1.13 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.













HCM Signalized Intersection Capacity Analysis

4: I-95 NB On/Off-Ramp & SR 869/SW 10th Street

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------|-------|-------|-------|---------------------------|-------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑↑ | ↗↘ | | ↑↑↑↑ | ↖↗ | ↗↘ |
| Traffic Volume (vph) | 1375 | 1000 | 0 | 1905 | 910 | 680 |
| Future Volume (vph) | 1375 | 1000 | 0 | 1905 | 910 | 680 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 2.0 | | 4.5 | 4.4 | 4.4 |
| Lane Util. Factor | 0.91 | 0.88 | | 0.81 | 0.94 | 0.76 |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 5085 | 2787 | | 7544 | 4990 | 3610 |
| Flt Permitted | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 5085 | 2787 | | 7544 | 4990 | 3610 |
| Peak-hour factor, PHF | 0.92 | 0.95 | 0.92 | 0.92 | 0.95 | 0.95 |
| Adj. Flow (vph) | 1495 | 1053 | 0 | 2071 | 958 | 716 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 1495 | 1053 | 0 | 2071 | 958 | 716 |
| Turn Type | NA | Free | | NA | Prot | Prot |
| Protected Phases | 6 3 | | | 2 3 | 4 | 4 |
| Permitted Phases | | Free | | | | |
| Actuated Green, G (s) | 115.6 | 180.0 | | 137.6 | 29.6 | 29.6 |
| Effective Green, g (s) | 119.6 | 180.0 | | 139.6 | 31.6 | 31.6 |
| Actuated g/C Ratio | 0.66 | 1.00 | | 0.78 | 0.18 | 0.18 |
| Clearance Time (s) | | | | | 6.4 | 6.4 |
| Vehicle Extension (s) | | | | | 3.5 | 3.5 |
| Lane Grp Cap (vph) | 3378 | 2787 | | 5850 | 876 | 633 |
| v/s Ratio Prot | c0.29 | | | 0.27 | 0.19 | c0.20 |
| v/s Ratio Perm | | c0.38 | | | | |
| v/c Ratio | 0.44 | 0.38 | | 0.35 | 1.09 | 1.13 |
| Uniform Delay, d1 | 14.4 | 0.0 | | 6.2 | 74.2 | 74.2 |
| Progression Factor | 0.47 | 1.00 | | 0.80 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.0 | 0.0 | | 0.0 | 59.2 | 77.6 |
| Delay (s) | 6.7 | 0.0 | | 5.0 | 133.4 | 151.8 |
| Level of Service | A | A | | A | F | F |
| Approach Delay (s) | 4.0 | | | 5.0 | 141.3 | |
| Approach LOS | A | | | A | F | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 40.8 | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.59 | | | |
| Actuated Cycle Length (s) | | | 180.0 | | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | | | 56.9% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

Queues

5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 266 | 1712 | 255 | 239 | 1348 | 125 | 304 | 147 | 136 | 261 | 310 | 418 |
| v/c Ratio | 0.74 | 0.74 | 0.31 | 0.78 | 0.61 | 0.16 | 0.92 | 0.17 | 0.28 | 0.62 | 0.86 | 0.91 |
| Control Delay | 98.5 | 28.2 | 5.7 | 98.0 | 41.7 | 5.8 | 78.9 | 53.0 | 8.1 | 48.5 | 92.1 | 61.7 |
| Queue Delay | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 98.5 | 28.7 | 5.7 | 98.0 | 41.7 | 5.8 | 78.9 | 53.0 | 8.1 | 48.5 | 92.1 | 61.7 |
| Queue Length 50th (ft) | 147 | 427 | 22 | 144 | 455 | 1 | 278 | 72 | 0 | 223 | 359 | 287 |
| Queue Length 95th (ft) | m174 | m447 | m54 | #198 | 549 | 47 | #431 | 101 | 57 | 288 | 460 | 421 |
| Internal Link Dist (ft) | | 630 | | | 1233 | | | 1112 | | | 1327 | |
| Turn Bay Length (ft) | 300 | | 300 | 200 | | 300 | 260 | | 260 | 170 | | 170 |
| Base Capacity (vph) | 400 | 2301 | 813 | 316 | 2221 | 761 | 338 | 1008 | 548 | 427 | 437 | 518 |
| Starvation Cap Reductn | 0 | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 0.82 | 0.31 | 0.76 | 0.61 | 0.16 | 0.90 | 0.15 | 0.25 | 0.61 | 0.71 | 0.81 |

Intersection Summary




































95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

5: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |    |    |  |    |    |  |  |   |  |   |   |  |
| Traffic Volume (vph) | 245 | 1575 | 235 | 220 | 1240 | 115 | 280 | 135 | 125 | 240 | 285 | 385 |
| Future Volume (vph) | 245 | 1575 | 235 | 220 | 1240 | 115 | 280 | 135 | 125 | 240 | 285 | 385 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.15 | 1.00 | 1.00 | 0.66 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 273 | 3539 | 1583 | 1227 | 1863 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 266 | 1712 | 255 | 239 | 1348 | 125 | 304 | 147 | 136 | 261 | 310 | 418 |
| RTOR Reduction (vph) | 0 | 0 | 97 | 0 | 0 | 70 | 0 | 0 | 103 | 0 | 0 | 154 |
| Lane Group Flow (vph) | 266 | 1712 | 158 | 239 | 1348 | 55 | 304 | 147 | 33 | 261 | 310 | 264 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | 6 | | | 2 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 16.9 | 79.4 | 79.4 | 14.1 | 76.6 | 76.6 | 68.0 | 43.5 | 43.5 | 53.7 | 34.9 | 34.9 |
| Effective Green, g (s) | 18.9 | 81.4 | 81.4 | 16.1 | 78.6 | 78.6 | 68.0 | 43.5 | 43.5 | 53.7 | 34.9 | 34.9 |
| Actuated g/C Ratio | 0.10 | 0.45 | 0.45 | 0.09 | 0.44 | 0.44 | 0.38 | 0.24 | 0.24 | 0.30 | 0.19 | 0.19 |
| Clearance Time (s) | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | 1.5 | 3.0 | 3.0 | 1.5 | 3.0 | 3.0 | 1.5 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 360 | 2299 | 715 | 307 | 2220 | 691 | 331 | 855 | 382 | 422 | 361 | 306 |
| v/s Ratio Prot | c0.08 | c0.34 | | 0.07 | 0.27 | | c0.14 | 0.04 | | 0.06 | 0.17 | |
| v/s Ratio Perm | | | 0.10 | | | 0.03 | c0.21 | | 0.02 | 0.12 | | 0.17 |
| v/c Ratio | 0.74 | 0.74 | 0.22 | 0.78 | 0.61 | 0.08 | 0.92 | 0.17 | 0.09 | 0.62 | 0.86 | 0.86 |
| Uniform Delay, d1 | 78.2 | 40.7 | 30.0 | 80.2 | 38.9 | 29.6 | 48.7 | 54.0 | 52.9 | 52.1 | 70.2 | 70.2 |
| Progression Factor | 1.14 | 0.63 | 0.47 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 5.1 | 1.7 | 0.5 | 10.8 | 1.2 | 0.2 | 28.8 | 0.0 | 0.0 | 1.9 | 17.4 | 20.7 |
| Delay (s) | 93.9 | 27.2 | 14.6 | 91.0 | 40.1 | 29.8 | 77.5 | 54.0 | 52.9 | 54.0 | 87.5 | 91.0 |
| Level of Service | F | C | B | F | D | C | E | D | D | D | F | F |
| Approach Delay (s) | | 33.7 | | | 46.5 | | | 65.9 | | | 80.1 | |
| Approach LOS | | C | | | D | | | E | | | F | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 49.4 | | | | HCM 2000 Level of Service | | | D | | |
| HCM 2000 Volume to Capacity ratio | | | 0.84 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 180.0 | | | | Sum of lost time (s) | | | 20.2 | | |
| Intersection Capacity Utilization | | | 84.1% | | | | ICU Level of Service | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

1: NW 5th Terr & Sample Road

| | → | ↙ | ← | ↘ | ↗ |
|-------------------------|------|-------|------|------|------|
| Lane Group | EBT | WBL | WBT | NBL | NBR |
| Lane Group Flow (vph) | 2777 | 272 | 2571 | 125 | 130 |
| v/c Ratio | 0.65 | 0.95 | 0.65 | 0.67 | 0.46 |
| Control Delay | 20.2 | 96.2 | 2.7 | 72.8 | 13.6 |
| Queue Delay | 0.0 | 43.4 | 0.3 | 0.0 | 0.0 |
| Total Delay | 20.3 | 139.6 | 3.0 | 72.8 | 13.6 |
| Queue Length 50th (ft) | 374 | 198 | 65 | 103 | 0 |
| Queue Length 95th (ft) | 448 | #397 | 45 | 164 | 58 |
| Internal Link Dist (ft) | 575 | | 175 | 531 | |
| Turn Bay Length (ft) | | | | | |
| Base Capacity (vph) | 4288 | 285 | 3961 | 503 | 543 |
| Starvation Cap Reductn | 0 | 57 | 613 | 0 | 0 |
| Spillback Cap Reductn | 153 | 0 | 0 | 0 | 2 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 1.19 | 0.77 | 0.25 | 0.24 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

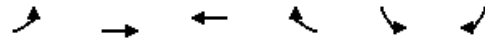
1: NW 5th Terr & Sample Road

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|------|------|-------|-------|---------------------------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | > | | > | > | > | > |
| Traffic Volume (vph) | 2460 | 95 | 250 | 2365 | 115 | 120 |
| Future Volume (vph) | 2460 | 95 | 250 | 2365 | 115 | 120 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | | 6.0 | 6.0 | 9.0 | 9.0 |
| Lane Util. Factor | 0.81 | | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | 0.99 | | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 7502 | | 1770 | 5085 | 1770 | 1583 |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 7502 | | 1770 | 5085 | 1770 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2674 | 103 | 272 | 2571 | 125 | 130 |
| RTOR Reduction (vph) | 3 | 0 | 0 | 0 | 0 | 116 |
| Lane Group Flow (vph) | 2774 | 0 | 272 | 2571 | 125 | 14 |
| Turn Type | NA | | Prot | NA | Prot | Perm |
| Protected Phases | 2 3 | | 1 | 1 2 3 | 4 | |
| Permitted Phases | | | | | 4 | 4 |
| Actuated Green, G (s) | 72.3 | | 19.0 | 99.3 | 13.7 | 13.7 |
| Effective Green, g (s) | 74.3 | | 21.0 | 101.3 | 13.7 | 13.7 |
| Actuated g/C Ratio | 0.57 | | 0.16 | 0.78 | 0.11 | 0.11 |
| Clearance Time (s) | | | 8.0 | | 9.0 | 9.0 |
| Vehicle Extension (s) | | | 1.5 | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 4287 | | 285 | 3962 | 186 | 166 |
| v/s Ratio Prot | 0.37 | | c0.15 | c0.51 | c0.07 | |
| v/s Ratio Perm | | | | | | 0.01 |
| v/c Ratio | 0.65 | | 0.95 | 0.65 | 0.67 | 0.08 |
| Uniform Delay, d1 | 18.9 | | 54.0 | 6.4 | 56.0 | 52.5 |
| Progression Factor | 1.00 | | 1.12 | 0.30 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.3 | | 34.2 | 0.2 | 7.3 | 0.1 |
| Delay (s) | 19.2 | | 94.8 | 2.1 | 63.3 | 52.6 |
| Level of Service | B | | F | A | E | D |
| Approach Delay (s) | 19.2 | | | 11.0 | 57.8 | |
| Approach LOS | B | | | B | E | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 16.9 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.77 | | | |
| Actuated Cycle Length (s) | | | 130.0 | | Sum of lost time (s) | 27.0 |
| Intersection Capacity Utilization | | | 67.5% | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

Queues

2: Sample Road & NW 5th Ave





















| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-------------------------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 196 | 2609 | 2674 | 315 | 207 | 168 |
| v/c Ratio | 1.03 | 0.52 | 0.67 | 0.28 | 0.57 | 0.53 |
| Control Delay | 106.8 | 2.2 | 13.6 | 1.1 | 61.0 | 13.6 |
| Queue Delay | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 |
| Total Delay | 106.8 | 2.3 | 13.6 | 1.1 | 61.0 | 13.8 |
| Queue Length 50th (ft) | ~177 | 25 | 375 | 1 | 87 | 0 |
| Queue Length 95th (ft) | #335 | 38 | 470 | m11 | 122 | 65 |
| Internal Link Dist (ft) | | 175 | 1004 | | 271 | |
| Turn Bay Length (ft) | | | | 450 | | |
| Base Capacity (vph) | 190 | 4992 | 4006 | 1107 | 977 | 570 |
| Starvation Cap Reductn | 0 | 737 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 192 | 0 | 0 | 61 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.03 | 0.61 | 0.70 | 0.28 | 0.21 | 0.33 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Sample Road & NW 5th Ave

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  |    |    |  |    |  |
| Traffic Volume (vph) | 180 | 2400 | 2460 | 290 | 190 | 155 |
| Future Volume (vph) | 180 | 2400 | 2460 | 290 | 190 | 155 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 9.0 | 9.0 |
| Lane Util. Factor | 1.00 | 0.86 | 0.86 | 1.00 | 0.97 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | 0.85 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 1770 | 6408 | 6408 | 1583 | 3433 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 1770 | 6408 | 6408 | 1583 | 3433 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 196 | 2609 | 2674 | 315 | 207 | 168 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 118 | 0 | 150 |
| Lane Group Flow (vph) | 196 | 2609 | 2674 | 197 | 207 | 18 |
| Turn Type | Prot | NA | NA | Perm | Prot | Perm |
| Protected Phases | 3 | 1 2 3 | 1 2 | | 4 | |
| Permitted Phases | | | | 1 2 | | 4 |
| Actuated Green, G (s) | 12.0 | 99.3 | 79.3 | 79.3 | 13.7 | 13.7 |
| Effective Green, g (s) | 14.0 | 101.3 | 81.3 | 81.3 | 13.7 | 13.7 |
| Actuated g/C Ratio | 0.11 | 0.78 | 0.63 | 0.63 | 0.11 | 0.11 |
| Clearance Time (s) | 8.0 | | | | 9.0 | 9.0 |
| Vehicle Extension (s) | 1.5 | | | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 190 | 4993 | 4007 | 989 | 361 | 166 |
| v/s Ratio Prot | c0.11 | 0.41 | c0.42 | | c0.06 | |
| v/s Ratio Perm | | | | 0.12 | | 0.01 |
| v/c Ratio | 1.03 | 0.52 | 0.67 | 0.20 | 0.57 | 0.11 |
| Uniform Delay, d1 | 58.0 | 5.3 | 15.7 | 10.4 | 55.4 | 52.6 |
| Progression Factor | 0.68 | 0.33 | 0.80 | 0.61 | 1.00 | 1.00 |
| Incremental Delay, d2 | 66.0 | 0.0 | 0.2 | 0.0 | 1.4 | 0.1 |
| Delay (s) | 105.3 | 1.8 | 12.8 | 6.3 | 56.7 | 52.7 |
| Level of Service | F | A | B | A | E | D |
| Approach Delay (s) | | 9.0 | 12.1 | | 54.9 | |
| Approach LOS | | A | B | | D | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 13.3 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.74 | | | |
| Actuated Cycle Length (s) | | | 130.0 | | Sum of lost time (s) | 27.0 |
| Intersection Capacity Utilization | | | 68.5% | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

Queues

3: Sample Road & I-95 SB RAMP












| | → | ↘ | ← | ↙ | ↗ |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | EBR | WBT | SBL2 | SBR |
| Lane Group Flow (vph) | 2054 | 737 | 2174 | 589 | 789 |
| v/c Ratio | 0.62 | 0.47 | 0.83 | 0.55 | 0.90 |
| Control Delay | 11.0 | 2.3 | 14.1 | 20.7 | 37.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 11.0 | 2.3 | 14.1 | 20.7 | 37.3 |
| Queue Length 50th (ft) | 204 | 21 | 230 | 97 | 167 |
| Queue Length 95th (ft) | 304 | 60 | 291 | 143 | #279 |
| Internal Link Dist (ft) | 1004 | | 259 | | |
| Turn Bay Length (ft) | | 250 | | | |
| Base Capacity (vph) | 3308 | 1583 | 2625 | 1082 | 878 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.62 | 0.47 | 0.83 | 0.54 | 0.90 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Sample Road & I-95 SB RAMP

| |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | SBL2 | SBL | SBR | NWL | NWR | |
| Lane Configurations | | ↑↑↑ | ↑ | | ↑↑↑ | | ↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1890 | 700 | 0 | 2000 | 0 | 560 | 0 | 750 | 0 | 0 | |
| Future Volume (vph) | 0 | 1890 | 700 | 0 | 2000 | 0 | 560 | 0 | 750 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | 5.5 | 2.0 | | 5.5 | | 5.5 | | 5.5 | | | |
| Lane Util. Factor | | 0.86 | 1.00 | | 0.91 | | 0.97 | | 0.88 | | | |
| Flt | | 1.00 | 0.85 | | 1.00 | | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 6408 | 1583 | | 5085 | | 3433 | | 2787 | | | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 6408 | 1583 | | 5085 | | 3433 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.95 | 0.92 | 0.92 | 0.92 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 2054 | 737 | 0 | 2174 | 0 | 589 | 0 | 789 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 2054 | 737 | 0 | 2174 | 0 | 589 | 0 | 789 | 0 | 0 | |
| Turn Type | | NA | Free | | NA | | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 3 | | 3 | | | |
| Permitted Phases | | | Free | | | | | | | | | |
| Actuated Green, G (s) | | 31.6 | 65.0 | | 31.6 | | 18.4 | | 18.4 | | | |
| Effective Green, g (s) | | 33.6 | 65.0 | | 33.6 | | 20.4 | | 20.4 | | | |
| Actuated g/C Ratio | | 0.52 | 1.00 | | 0.52 | | 0.31 | | 0.31 | | | |
| Clearance Time (s) | | 7.5 | | | 7.5 | | 7.5 | | 7.5 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 2.5 | | 2.5 | | | |
| Lane Grp Cap (vph) | | 3312 | 1583 | | 2628 | | 1077 | | 874 | | | |
| v/s Ratio Prot | | 0.32 | | | c0.43 | | 0.17 | | c0.28 | | | |
| v/s Ratio Perm | | | 0.47 | | | | | | | | | |
| v/c Ratio | | 0.62 | 0.47 | | 0.83 | | 0.55 | | 0.90 | | | |
| Uniform Delay, d1 | | 11.2 | 0.0 | | 13.3 | | 18.5 | | 21.4 | | | |
| Progression Factor | | 0.90 | 1.00 | | 0.89 | | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 0.8 | 0.9 | | 2.1 | | 0.5 | | 12.5 | | | |
| Delay (s) | | 10.9 | 0.9 | | 13.9 | | 18.9 | | 33.8 | | | |
| Level of Service | | B | A | | B | | B | | C | | | |
| Approach Delay (s) | | 8.2 | | | 13.9 | | | 27.5 | | 0.0 | | |
| Approach LOS | | A | | | B | | | C | | A | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 14.4 | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.86 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 65.0 | | | | | | | | Sum of lost time (s) | 11.0 |
| Intersection Capacity Utilization | | | 74.0% | | | | | | | | ICU Level of Service | D |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Queues

4: I-95 NB RAMP & Sample Road













| | → | ← | ↖ | ↗ | |
|-------------------------|------|------|------|------|------|
| Lane Group | EBT | WBT | WBR | NBL2 | NBR |
| Lane Group Flow (vph) | 1880 | 1891 | 453 | 1200 | 705 |
| v/c Ratio | 0.74 | 0.75 | 0.29 | 0.84 | 0.61 |
| Control Delay | 19.1 | 15.1 | 0.2 | 40.0 | 31.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.1 | 15.1 | 0.2 | 40.0 | 31.7 |
| Queue Length 50th (ft) | 391 | 170 | 0 | 453 | 255 |
| Queue Length 95th (ft) | 411 | m213 | m0 | 522 | 311 |
| Internal Link Dist (ft) | 270 | 1155 | | | |
| Turn Bay Length (ft) | | | 250 | | |
| Base Capacity (vph) | 2537 | 2537 | 1583 | 1544 | 1254 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.74 | 0.75 | 0.29 | 0.78 | 0.56 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis











4: I-95 NB RAMP & Sample Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL2 | NBL | NBR | SEL | SER | |
| Lane Configurations | | ↑↑↑ | | | ↑↑↑ | ↑ | ↑↑ | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1730 | 0 | 0 | 1740 | 430 | 1140 | 0 | 670 | 0 | 0 | |
| Future Volume (vph) | 0 | 1730 | 0 | 0 | 1740 | 430 | 1140 | 0 | 670 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | 5.5 | | | 5.5 | 2.0 | 5.5 | | 5.5 | | | |
| Lane Util. Factor | | 0.91 | | | 0.91 | 1.00 | 0.97 | | 0.88 | | | |
| Frt | | 1.00 | | | 1.00 | 0.85 | 1.00 | | 0.85 | | | |
| Flt Protected | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (prot) | | 5085 | | | 5085 | 1583 | 3433 | | 2787 | | | |
| Flt Permitted | | 1.00 | | | 1.00 | 1.00 | 0.95 | | 1.00 | | | |
| Satd. Flow (perm) | | 5085 | | | 5085 | 1583 | 3433 | | 2787 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.92 | 0.95 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 1880 | 0 | 0 | 1891 | 453 | 1200 | 0 | 705 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 1880 | 0 | 0 | 1891 | 453 | 1200 | 0 | 705 | 0 | 0 | |
| Turn Type | | NA | | | NA | Free | Prot | | Prot | | | |
| Protected Phases | | 6 | | | 2 | | 4 | | 4 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | | 62.9 | | | 62.9 | 130.0 | 52.1 | | 52.1 | | | |
| Effective Green, g (s) | | 64.9 | | | 64.9 | 130.0 | 54.1 | | 54.1 | | | |
| Actuated g/C Ratio | | 0.50 | | | 0.50 | 1.00 | 0.42 | | 0.42 | | | |
| Clearance Time (s) | | 7.5 | | | 7.5 | | 7.5 | | 7.5 | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 2.5 | | 2.5 | | | |
| Lane Grp Cap (vph) | | 2538 | | | 2538 | 1583 | 1428 | | 1159 | | | |
| v/s Ratio Prot | | 0.37 | | | c0.37 | | c0.35 | | 0.25 | | | |
| v/s Ratio Perm | | | | | | 0.29 | | | | | | |
| v/c Ratio | | 0.74 | | | 0.75 | 0.29 | 0.84 | | 0.61 | | | |
| Uniform Delay, d1 | | 25.9 | | | 26.0 | 0.0 | 34.1 | | 29.7 | | | |
| Progression Factor | | 0.65 | | | 0.53 | 1.00 | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 1.0 | | | 0.9 | 0.2 | 4.6 | | 0.8 | | | |
| Delay (s) | | 17.9 | | | 14.6 | 0.2 | 38.6 | | 30.4 | | | |
| Level of Service | | B | | | B | A | D | | C | | | |
| Approach Delay (s) | | 17.9 | | | 11.8 | | | 35.6 | | 0.0 | | |
| Approach LOS | | B | | | B | | | D | | A | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 21.0 | | | | | | | | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | | | 0.79 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | | | | | Sum of lost time (s) | 11.0 |
| Intersection Capacity Utilization | | | 66.0% | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Queues

5: NE 3rd Ave & Sample Road






























| |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 511 | 2098 | 114 | 1820 | 261 | 337 | 120 | 87 | 266 | 418 |
| v/c Ratio | 0.97 | 0.84 | 0.93 | 0.88 | 1.09 | 0.82 | 0.24 | 0.51 | 0.76 | 0.89 |
| Control Delay | 83.2 | 28.7 | 125.3 | 41.7 | 120.8 | 64.3 | 1.1 | 42.8 | 63.2 | 47.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 83.2 | 28.7 | 125.3 | 41.7 | 120.8 | 64.3 | 1.1 | 42.8 | 63.2 | 47.0 |
| Queue Length 50th (ft) | 234 | 368 | 97 | 510 | ~197 | 272 | 0 | 53 | 214 | 184 |
| Queue Length 95th (ft) | #343 | #602 | #217 | #690 | #280 | 358 | 0 | 87 | 291 | 303 |
| Internal Link Dist (ft) | | 1155 | | 834 | | 912 | | | 742 | |
| Turn Bay Length (ft) | 550 | | 490 | | 250 | | 225 | 200 | | |
| Base Capacity (vph) | 528 | 2491 | 122 | 2073 | 240 | 515 | 583 | 171 | 458 | 547 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.97 | 0.84 | 0.93 | 0.88 | 1.09 | 0.65 | 0.21 | 0.51 | 0.58 | 0.76 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

5: NE 3rd Ave & Sample Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |   | |   |   | |   |  |  |   |   |  |
| Traffic Volume (vph) | 470 | 1715 | 215 | 105 | 1545 | 130 | 240 | 310 | 110 | 80 | 245 | 385 |
| Future Volume (vph) | 470 | 1715 | 215 | 105 | 1545 | 130 | 240 | 310 | 110 | 80 | 245 | 385 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 0.97 | 0.91 | | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5000 | | 1770 | 5026 | | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.25 | 1.00 | 1.00 | 0.26 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5000 | | 1770 | 5026 | | 473 | 1863 | 1583 | 477 | 1863 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 511 | 1864 | 234 | 114 | 1679 | 141 | 261 | 337 | 120 | 87 | 266 | 418 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 6 | 0 | 0 | 0 | 94 | 0 | 0 | 170 |
| Lane Group Flow (vph) | 511 | 2087 | 0 | 114 | 1814 | 0 | 261 | 337 | 26 | 87 | 266 | 248 |
| Turn Type | Prot | NA | | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | | | | | | | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 18.0 | 62.5 | | 7.0 | 51.5 | | 38.6 | 28.6 | 28.6 | 30.4 | 24.5 | 24.5 |
| Effective Green, g (s) | 20.0 | 64.5 | | 9.0 | 53.5 | | 38.6 | 28.6 | 28.6 | 30.4 | 24.5 | 24.5 |
| Actuated g/C Ratio | 0.15 | 0.50 | | 0.07 | 0.41 | | 0.30 | 0.22 | 0.22 | 0.23 | 0.19 | 0.19 |
| Clearance Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 1.5 | 3.0 | | 1.5 | 3.0 | | 1.5 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 528 | 2480 | | 122 | 2068 | | 240 | 409 | 348 | 170 | 351 | 298 |
| v/s Ratio Prot | c0.15 | c0.42 | | 0.06 | 0.36 | | c0.08 | c0.18 | | 0.02 | 0.14 | |
| v/s Ratio Perm | | | | | | | c0.24 | | 0.02 | 0.10 | | 0.16 |
| v/c Ratio | 0.97 | 0.84 | | 0.93 | 0.88 | | 1.09 | 0.82 | 0.08 | 0.51 | 0.76 | 0.83 |
| Uniform Delay, d1 | 54.7 | 28.3 | | 60.2 | 35.2 | | 43.3 | 48.3 | 40.2 | 40.9 | 49.9 | 50.8 |
| Progression Factor | 1.05 | 0.88 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 25.0 | 2.7 | | 60.3 | 5.6 | | 83.4 | 12.1 | 0.0 | 1.1 | 8.1 | 17.1 |
| Delay (s) | 82.4 | 27.7 | | 120.6 | 40.8 | | 126.7 | 60.4 | 40.3 | 41.9 | 58.0 | 67.9 |
| Level of Service | F | C | | F | D | | F | E | D | D | E | E |
| Approach Delay (s) | | 38.4 | | | 45.5 | | | 81.1 | | | 61.5 | |
| Approach LOS | | D | | | D | | | F | | | E | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 48.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.99 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 22.0 |
| Intersection Capacity Utilization | 90.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group