

HCM Signalized Intersection Capacity Analysis
 1: Livermore Ave & East Ave

Existing Conditions
 Timing Plan: AM Peak



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|---------------------|------|-------|------|---------------------------|-------|
| Lane Configurations | | ↑↑ | ↑↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 579 | 285 | 3 | 442 | 127 |
| Future Volume (vph) | 0 | 579 | 285 | 3 | 442 | 127 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.1 | 4.1 | | | 4.1 |
| Lane Util. Factor | | 0.88 | 0.95 | | | 0.95 |
| Frbp, ped/bikes | | 1.00 | 1.00 | | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 |
| Frt | | 0.85 | 1.00 | | | 1.00 |
| Flt Protected | | 1.00 | 1.00 | | | 0.96 |
| Satd. Flow (prot) | | 2787 | 3534 | | | 3407 |
| Flt Permitted | | 1.00 | 1.00 | | | 0.96 |
| Satd. Flow (perm) | | 2787 | 3534 | | | 3407 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.89 | 0.89 | 0.97 | 0.97 |
| Adj. Flow (vph) | 0 | 623 | 320 | 3 | 456 | 131 |
| RTOR Reduction (vph) | 0 | 444 | 1 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 179 | 322 | 0 | 0 | 587 |
| Confl. Peds. (#/hr) | | | | 5 | | |
| Turn Type | | Prot | NA | | Split | NA |
| Protected Phases | | 2 | 4 | | 1 2 8 | 1 2 8 |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | 35.7 | 23.9 | | | 92.1 |
| Effective Green, g (s) | | 35.7 | 23.9 | | | 87.6 |
| Actuated g/C Ratio | | 0.29 | 0.19 | | | 0.71 |
| Clearance Time (s) | | 4.1 | 4.1 | | | |
| Vehicle Extension (s) | | 4.0 | 3.0 | | | |
| Lane Grp Cap (vph) | | 801 | 680 | | | 2403 |
| v/s Ratio Prot | | 0.06 | c0.09 | | | c0.17 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.22 | 0.47 | | | 0.24 |
| Uniform Delay, d1 | | 33.7 | 44.6 | | | 6.5 |
| Progression Factor | | 1.00 | 1.00 | | | 0.40 |
| Incremental Delay, d2 | | 0.2 | 0.5 | | | 0.1 |
| Delay (s) | | 33.9 | 45.1 | | | 2.6 |
| Level of Service | | C | D | | | A |
| Approach Delay (s) | 33.9 | | 45.1 | | | 2.6 |
| Approach LOS | C | | D | | | A |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 24.3 | | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | | | 0.30 | | | |
| Actuated Cycle Length (s) | | | 124.2 | | Sum of lost time (s) | 16.8 |
| Intersection Capacity Utilization | | | 41.8% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c | Critical Lane Group | | | | | |

HCM 6th TWSC
2: 5th St & East Ave

Existing Conditions
Timing Plan: AM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NEL | NER |
| Lane Configurations | ↑↑ | | | ↑↑ | ↑ | |
| Traffic Vol, veh/h | 445 | 0 | 25 | 577 | 2 | 13 |
| Future Vol, veh/h | 445 | 0 | 25 | 577 | 2 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 484 | 0 | 27 | 627 | 2 | 14 |

| Major/Minor | Major1 | Major2 | Minor1 | | | |
|----------------------|--------|--------|--------|---|------|------|
| Conflicting Flow All | 0 | 0 | 484 | 0 | 852 | 242 |
| Stage 1 | - | - | - | - | 484 | - |
| Stage 2 | - | - | - | - | 368 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 1075 | - | 299 | 759 |
| Stage 1 | - | - | - | - | 585 | - |
| Stage 2 | - | - | - | - | 670 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1075 | - | 287 | 759 |
| Mov Cap-2 Maneuver | - | - | - | - | 287 | - |
| Stage 1 | - | - | - | - | 585 | - |
| Stage 2 | - | - | - | - | 644 | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.5 | 10.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 622 | - | - | 1075 | - |
| HCM Lane V/C Ratio | 0.026 | - | - | 0.025 | - |
| HCM Control Delay (s) | 10.9 | - | - | 8.4 | 0.2 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.1 | - |

HCM 6th TWSC
3: East Ave & 6th St

Existing Conditions
Timing Plan: AM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.5 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 52 | 406 | 599 | 5 | 0 | 3 |
| Future Vol, veh/h | 52 | 406 | 599 | 5 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 90 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 57 | 441 | 651 | 5 | 0 | 3 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 656 | 0 | - | 0 | 989 328 |
| Stage 1 | - | - | - | - | 654 - |
| Stage 2 | - | - | - | - | 335 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 927 | - | - | - | 244 668 |
| Stage 1 | - | - | - | - | 479 - |
| Stage 2 | - | - | - | - | 697 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 927 | - | - | - | 229 668 |
| Mov Cap-2 Maneuver | - | - | - | - | 229 - |
| Stage 1 | - | - | - | - | 450 - |
| Stage 2 | - | - | - | - | 697 - |

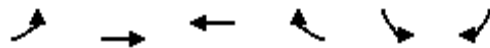
| Approach | EB | WB | SB |
|----------------------|----|----|------|
| HCM Control Delay, s | 1 | 0 | 10.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 927 | - | - | - | 668 |
| HCM Lane V/C Ratio | 0.061 | - | - | - | 0.005 |
| HCM Control Delay (s) | 9.1 | - | - | - | 10.4 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0 |

HCM Signalized Intersection Capacity Analysis

4: East Ave & Maple St

Existing Conditions
Timing Plan: AM Peak



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|------|-------|------|---------------------------|------|
| Lane Configurations | | ↑↑ | ↑↑ | | ↑ | ↑ |
| Traffic Volume (vph) | 0 | 406 | 581 | 355 | 118 | 14 |
| Future Volume (vph) | 0 | 406 | 581 | 355 | 118 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.4 | 4.4 | | 4.0 | 4.0 |
| Lane Util. Factor | | 0.95 | 0.95 | | 1.00 | 1.00 |
| Frbp, ped/bikes | | 1.00 | 0.99 | | 1.00 | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Frt | | 1.00 | 0.94 | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 3539 | 3311 | | 1770 | 1583 |
| Flt Permitted | | 1.00 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (perm) | | 3539 | 3311 | | 1770 | 1583 |
| Peak-hour factor, PHF | 0.82 | 0.82 | 0.75 | 0.75 | 0.65 | 0.65 |
| Adj. Flow (vph) | 0 | 495 | 775 | 473 | 182 | 22 |
| RTOR Reduction (vph) | 0 | 0 | 96 | 0 | 0 | 10 |
| Lane Group Flow (vph) | 0 | 495 | 1152 | 0 | 182 | 12 |
| Confl. Peds. (#/hr) | | | | 1 | 137 | |
| Turn Type | | NA | NA | | Prot | Perm |
| Protected Phases | | 2 | 6 | | 4 | |
| Permitted Phases | | | | | | 4 |
| Actuated Green, G (s) | | 33.1 | 33.1 | | 14.5 | 14.5 |
| Effective Green, g (s) | | 33.1 | 33.1 | | 14.5 | 14.5 |
| Actuated g/C Ratio | | 0.46 | 0.46 | | 0.20 | 0.20 |
| Clearance Time (s) | | 4.4 | 4.4 | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 1624 | 1520 | | 355 | 318 |
| v/s Ratio Prot | | 0.14 | c0.35 | | c0.10 | |
| v/s Ratio Perm | | | | | | 0.01 |
| v/c Ratio | | 0.30 | 0.76 | | 0.51 | 0.04 |
| Uniform Delay, d1 | | 12.3 | 16.2 | | 25.7 | 23.2 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 0.1 | 2.2 | | 1.3 | 0.0 |
| Delay (s) | | 12.4 | 18.4 | | 26.9 | 23.2 |
| Level of Service | | B | B | | C | C |
| Approach Delay (s) | | 12.4 | 18.4 | | 26.5 | |
| Approach LOS | | B | B | | C | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 17.7 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.54 | | | |
| Actuated Cycle Length (s) | | | 72.1 | | Sum of lost time (s) | 12.4 |
| Intersection Capacity Utilization | | | 41.1% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NEL | NER |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | | ↗ |
| Traffic Vol, veh/h | 510 | 14 | 76 | 937 | 0 | 45 |
| Future Vol, veh/h | 510 | 14 | 76 | 937 | 0 | 45 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 70 | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 554 | 15 | 83 | 1018 | 0 | 49 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 569 | 0 | 285 |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |
| Critical Hdwy | - | - | 4.14 | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.32 |
| Pot Cap-1 Maneuver | - | - | 999 | - | 712 |
| Stage 1 | - | - | - | - | 0 |
| Stage 2 | - | - | - | - | 0 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 999 | - | 712 |
| Mov Cap-2 Maneuver | - | - | - | - | - |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.7 | 10.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 712 | - | - | 999 | - |
| HCM Lane V/C Ratio | 0.069 | - | - | 0.083 | - |
| HCM Control Delay (s) | 10.4 | - | - | 8.9 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.3 | - |

HCM 6th Signalized Intersection Summary

6: Dolores St & East Ave

Existing Conditions

Timing Plan: AM Peak



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | | | ↕ | |
| Traffic Volume (veh/h) | 1 | 531 | 24 | 124 | 946 | 17 | 45 | 0 | 142 | 0 | 0 | 2 |
| Future Volume (veh/h) | 1 | 531 | 24 | 124 | 946 | 17 | 45 | 0 | 142 | 0 | 0 | 2 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.97 | 1.00 | | 0.97 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1 | 610 | 28 | 133 | 1017 | 18 | 55 | 0 | 173 | 0 | 0 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 | 0.82 | 0.82 | 0.82 | 0.50 | 0.50 | 0.50 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 4 | 1255 | 58 | 174 | 1643 | 29 | 323 | 0 | 284 | 0 | 0 | 7 |
| Arrive On Green | 0.00 | 0.36 | 0.36 | 0.10 | 0.46 | 0.46 | 0.18 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3454 | 158 | 1781 | 3570 | 63 | 1781 | 0 | 1569 | 0 | 0 | 1585 |
| Grp Volume(v), veh/h | 1 | 313 | 325 | 133 | 506 | 529 | 55 | 0 | 173 | 0 | 0 | 4 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1836 | 1781 | 1777 | 1856 | 1781 | 0 | 1569 | 0 | 0 | 1585 |
| Q Serve(g_s), s | 0.0 | 6.7 | 6.7 | 3.6 | 10.5 | 10.5 | 1.3 | 0.0 | 5.0 | 0.0 | 0.0 | 0.1 |
| Cycle Q Clear(g_c), s | 0.0 | 6.7 | 6.7 | 3.6 | 10.5 | 10.5 | 1.3 | 0.0 | 5.0 | 0.0 | 0.0 | 0.1 |
| Prop In Lane | 1.00 | | 0.09 | 1.00 | | 0.03 | 1.00 | | 1.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 4 | 646 | 667 | 174 | 818 | 854 | 323 | 0 | 284 | 0 | 0 | 7 |
| V/C Ratio(X) | 0.27 | 0.49 | 0.49 | 0.76 | 0.62 | 0.62 | 0.17 | 0.00 | 0.61 | 0.00 | 0.00 | 0.58 |
| Avail Cap(c_a), veh/h | 291 | 1271 | 1313 | 910 | 1271 | 1327 | 910 | 0 | 802 | 0 | 0 | 259 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.4 | 12.0 | 12.1 | 21.5 | 10.0 | 10.0 | 16.9 | 0.0 | 18.4 | 0.0 | 0.0 | 24.3 |
| Incr Delay (d2), s/veh | 14.4 | 0.8 | 0.8 | 2.6 | 1.1 | 1.0 | 0.4 | 0.0 | 3.0 | 0.0 | 0.0 | 25.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 2.3 | 2.4 | 1.5 | 3.4 | 3.6 | 0.5 | 0.0 | 1.9 | 0.0 | 0.0 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.8 | 12.9 | 12.8 | 24.2 | 11.1 | 11.0 | 17.3 | 0.0 | 21.4 | 0.0 | 0.0 | 50.2 |
| LnGrp LOS | D | B | B | C | B | B | B | A | C | A | A | D |
| Approach Vol, veh/h | | 639 | | | 1168 | | | 228 | | | | 4 |
| Approach Delay, s/veh | | 12.9 | | | 12.5 | | | 20.4 | | | | 50.2 |
| Approach LOS | | B | | | B | | | C | | | | D |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 4.1 | 27.5 | | 13.0 | 8.9 | 22.8 | | 4.3 | | | | |
| Change Period (Y+Rc), s | 4.1 | 5.0 | | 4.1 | 4.1 | 5.0 | | 4.1 | | | | |
| Max Green Setting (Gmax), s | 8.0 | 35.0 | | 25.0 | 25.0 | 35.0 | | 8.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.0 | 12.5 | | 7.0 | 5.6 | 8.7 | | 2.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 10.0 | | 1.6 | 0.2 | 6.0 | | 0.0 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 13.6 |
| HCM 6th LOS | B |

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
7: East Ave & Jensen St

Existing Conditions
Timing Plan: AM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.3 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 64 | 603 | 1033 | 21 | 9 | 67 |
| Future Vol, veh/h | 64 | 603 | 1033 | 21 | 9 | 67 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 115 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 70 | 655 | 1123 | 23 | 10 | 73 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1146 | 0 | - | 0 | 1603 |
| Stage 1 | - | - | - | - | 1135 |
| Stage 2 | - | - | - | - | 468 |
| Critical Hdwy | 4.14 | - | - | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 |
| Pot Cap-1 Maneuver | 605 | - | - | - | 96 |
| Stage 1 | - | - | - | - | 269 |
| Stage 2 | - | - | - | - | 597 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 605 | - | - | - | 85 |
| Mov Cap-2 Maneuver | - | - | - | - | 85 |
| Stage 1 | - | - | - | - | 238 |
| Stage 2 | - | - | - | - | 597 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.1 | 0 | 21.3 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 605 | - | - | - | 303 |
| HCM Lane V/C Ratio | 0.115 | - | - | - | 0.273 |
| HCM Control Delay (s) | 11.7 | - | - | - | 21.3 |
| HCM Lane LOS | B | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 1.1 |

HCM 6th TWSC
8: East Ave & Estate St

Existing Conditions
Timing Plan: AM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.9 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | | ↑↑ | |
| Traffic Vol, veh/h | 14 | 603 | 999 | 23 | 18 | 58 |
| Future Vol, veh/h | 14 | 603 | 999 | 23 | 18 | 58 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 655 | 1086 | 25 | 20 | 63 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 1111 | 0 | - | 0 | 1457 556 |
| Stage 1 | - | - | - | - | 1099 - |
| Stage 2 | - | - | - | - | 358 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 624 | - | - | - | 120 475 |
| Stage 1 | - | - | - | - | 281 - |
| Stage 2 | - | - | - | - | 678 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 624 | - | - | - | 115 475 |
| Mov Cap-2 Maneuver | - | - | - | - | 216 - |
| Stage 1 | - | - | - | - | 270 - |
| Stage 2 | - | - | - | - | 678 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.4 | 0 | 17.5 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 624 | - | - | - | 370 |
| HCM Lane V/C Ratio | 0.024 | - | - | - | 0.223 |
| HCM Control Delay (s) | 10.9 | 0.2 | - | - | 17.5 |
| HCM Lane LOS | B | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.8 |

HCM Signalized Intersection Capacity Analysis

9: Hillcrest Ave & East Ave

Existing Conditions

Timing Plan: AM Peak



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|------|-------|------|-------|----------------------|---------------------------|------|------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 28 | 600 | 22 | 30 | 878 | 19 | 93 | 10 | 35 | 79 | 7 | 41 |
| Future Volume (vph) | 28 | 600 | 22 | 30 | 878 | 19 | 93 | 10 | 35 | 79 | 7 | 41 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.1 | 4.7 | | 4.1 | 4.7 | | 4.1 | 4.1 | | 4.1 | 4.1 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frbp, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.97 | | 1.00 | 0.96 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 0.88 | | 1.00 | 0.87 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1770 | 3508 | | 1770 | 3524 | | 1770 | 1595 | | 1770 | 1558 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1770 | 3508 | | 1770 | 3524 | | 1770 | 1595 | | 1770 | 1558 | |
| Peak-hour factor, PHF | 0.69 | 0.69 | 0.69 | 0.84 | 0.84 | 0.84 | 0.64 | 0.64 | 0.64 | 0.74 | 0.74 | 0.74 |
| Adj. Flow (vph) | 41 | 870 | 32 | 36 | 1045 | 23 | 145 | 16 | 55 | 107 | 9 | 55 |
| RTOR Reduction (vph) | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 41 | 900 | 0 | 36 | 1067 | 0 | 145 | 71 | 0 | 107 | 64 | 0 |
| Confl. Peds. (#/hr) | | | 38 | | | 14 | | | 30 | | | 34 |
| Confl. Bikes (#/hr) | | | 9 | | | 8 | | | | | | 2 |
| Turn Type | Prot | NA | | Prot | NA | | Split | NA | | Split | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 4 | 4 | | 3 | 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | 3.9 | 36.4 | | 3.7 | 36.2 | | 19.8 | 19.8 | | 15.7 | 15.7 | |
| Effective Green, g (s) | 3.9 | 36.4 | | 3.7 | 36.2 | | 19.8 | 19.8 | | 15.7 | 15.7 | |
| Actuated g/C Ratio | 0.04 | 0.39 | | 0.04 | 0.39 | | 0.21 | 0.21 | | 0.17 | 0.17 | |
| Clearance Time (s) | 4.1 | 4.7 | | 4.1 | 4.7 | | 4.1 | 4.1 | | 4.1 | 4.1 | |
| Vehicle Extension (s) | 2.0 | 3.0 | | 2.0 | 3.0 | | 2.5 | 2.5 | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | 74 | 1378 | | 70 | 1377 | | 378 | 341 | | 300 | 264 | |
| v/s Ratio Prot | c0.02 | 0.26 | | 0.02 | c0.30 | | c0.08 | 0.04 | | c0.06 | 0.04 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | 0.55 | 0.65 | | 0.51 | 0.77 | | 0.38 | 0.21 | | 0.36 | 0.24 | |
| Uniform Delay, d1 | 43.5 | 22.9 | | 43.6 | 24.6 | | 31.2 | 30.0 | | 34.0 | 33.3 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.0 | 1.1 | | 2.6 | 2.8 | | 0.5 | 0.2 | | 0.5 | 0.3 | |
| Delay (s) | 48.5 | 24.1 | | 46.2 | 27.4 | | 31.6 | 30.2 | | 34.5 | 33.6 | |
| Level of Service | D | C | | D | C | | C | C | | C | C | |
| Approach Delay (s) | | 25.1 | | | 28.0 | | | 31.2 | | | 34.2 | |
| Approach LOS | | C | | | C | | | C | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 27.6 | | | | HCM 2000 Level of Service | | | C | | |
| HCM 2000 Volume to Capacity ratio | | | 0.57 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 92.6 | | | Sum of lost time (s) | | | 17.0 | | | |
| Intersection Capacity Utilization | | | 52.2% | | | ICU Level of Service | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↗ | |
| Traffic Vol, veh/h | 723 | 7 | 39 | 918 | 12 | 14 |
| Future Vol, veh/h | 723 | 7 | 39 | 918 | 12 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 50 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 786 | 8 | 42 | 998 | 13 | 15 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 0 | 0 | 794 | 0 | 1373 397 |
| Stage 1 | - | - | - | - | 790 - |
| Stage 2 | - | - | - | - | 583 - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | - | - | 823 | - | 137 602 |
| Stage 1 | - | - | - | - | 408 - |
| Stage 2 | - | - | - | - | 521 - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 823 | - | 130 602 |
| Mov Cap-2 Maneuver | - | - | - | - | 130 - |
| Stage 1 | - | - | - | - | 408 - |
| Stage 2 | - | - | - | - | 494 - |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.4 | 23.3 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 225 | - | - | 823 | - |
| HCM Lane V/C Ratio | 0.126 | - | - | 0.052 | - |
| HCM Control Delay (s) | 23.3 | - | - | 9.6 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.4 | - | - | 0.2 | - |

HCM 6th TWSC
11: East Ave & Hayes Ave

Existing Conditions
Timing Plan: AM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.3 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 35 | 707 | 886 | 30 | 32 | 69 |
| Future Vol, veh/h | 35 | 707 | 886 | 30 | 32 | 69 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 50 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 768 | 963 | 33 | 35 | 75 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 996 | 0 | - | 0 | 1440 498 |
| Stage 1 | - | - | - | - | 980 - |
| Stage 2 | - | - | - | - | 460 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 690 | - | - | - | 124 518 |
| Stage 1 | - | - | - | - | 324 - |
| Stage 2 | - | - | - | - | 602 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 690 | - | - | - | 117 518 |
| Mov Cap-2 Maneuver | - | - | - | - | 231 - |
| Stage 1 | - | - | - | - | 306 - |
| Stage 2 | - | - | - | - | 602 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.5 | 0 | 18.7 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 690 | - | - | - | 372 |
| HCM Lane V/C Ratio | 0.055 | - | - | - | 0.295 |
| HCM Control Delay (s) | 10.5 | - | - | - | 18.7 |
| HCM Lane LOS | B | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 1.2 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↘ | |
| Traffic Vol, veh/h | 715 | 21 | 18 | 885 | 41 | 9 |
| Future Vol, veh/h | 715 | 21 | 18 | 885 | 41 | 9 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 50 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 777 | 23 | 20 | 962 | 45 | 10 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 800 | 0 | 1310 |
| Stage 1 | - | - | - | - | 789 |
| Stage 2 | - | - | - | - | 521 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 819 | - | 151 |
| Stage 1 | - | - | - | - | 408 |
| Stage 2 | - | - | - | - | 561 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 819 | - | 147 |
| Mov Cap-2 Maneuver | - | - | - | - | 278 |
| Stage 1 | - | - | - | - | 408 |
| Stage 2 | - | - | - | - | 548 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.2 | 19.2 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 308 | - | - | 819 | - |
| HCM Lane V/C Ratio | 0.176 | - | - | 0.024 | - |
| HCM Control Delay (s) | 19.2 | - | - | 9.5 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.6 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.4 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 62 | 665 | 849 | 28 | 32 | 64 |
| Future Vol, veh/h | 62 | 665 | 849 | 28 | 32 | 64 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 50 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 67 | 723 | 923 | 30 | 35 | 70 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 953 | 0 | - | 0 | 1434 477 |
| Stage 1 | - | - | - | - | 938 - |
| Stage 2 | - | - | - | - | 496 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 717 | - | - | - | 125 534 |
| Stage 1 | - | - | - | - | 341 - |
| Stage 2 | - | - | - | - | 577 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 717 | - | - | - | 113 534 |
| Mov Cap-2 Maneuver | - | - | - | - | 229 - |
| Stage 1 | - | - | - | - | 309 - |
| Stage 2 | - | - | - | - | 577 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.9 | 0 | 18.5 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 717 | - | - | - | 370 |
| HCM Lane V/C Ratio | 0.094 | - | - | - | 0.282 |
| HCM Control Delay (s) | 10.5 | - | - | - | 18.5 |
| HCM Lane LOS | B | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 1.1 |

HCM Signalized Intersection Capacity Analysis
 14: Madison Ave & East Ave

Existing Conditions
 Timing Plan: AM Peak



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|------|------|------|-------|-------|------|
| Lane Configurations | ↑↑ | | ↵ | ↑↑ | ↵ | |
| Traffic Volume (vph) | 683 | 16 | 28 | 840 | 32 | 74 |
| Future Volume (vph) | 683 | 16 | 28 | 840 | 32 | 74 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.7 | | 4.7 | 4.7 | 4.0 | |
| Lane Util. Factor | 0.95 | | 1.00 | 0.95 | 1.00 | |
| Frt | 1.00 | | 1.00 | 1.00 | 0.91 | |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.99 | |
| Satd. Flow (prot) | 3527 | | 1770 | 3539 | 1663 | |
| Flt Permitted | 1.00 | | 0.36 | 1.00 | 0.99 | |
| Satd. Flow (perm) | 3527 | | 678 | 3539 | 1663 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 742 | 17 | 30 | 913 | 35 | 80 |
| RTOR Reduction (vph) | 3 | 0 | 0 | 0 | 71 | 0 |
| Lane Group Flow (vph) | 756 | 0 | 30 | 913 | 44 | 0 |
| Turn Type | NA | | Perm | NA | Perm | |
| Protected Phases | 2 | | | 6 | | |
| Permitted Phases | | | 6 | | 4 | |
| Actuated Green, G (s) | 20.0 | | 20.0 | 20.0 | 3.6 | |
| Effective Green, g (s) | 20.0 | | 20.0 | 20.0 | 3.6 | |
| Actuated g/C Ratio | 0.62 | | 0.62 | 0.62 | 0.11 | |
| Clearance Time (s) | 4.7 | | 4.7 | 4.7 | 4.0 | |
| Vehicle Extension (s) | 4.0 | | 4.0 | 4.0 | 3.0 | |
| Lane Grp Cap (vph) | 2183 | | 419 | 2191 | 185 | |
| v/s Ratio Prot | 0.21 | | | c0.26 | | |
| v/s Ratio Perm | | | 0.04 | | c0.03 | |
| v/c Ratio | 0.35 | | 0.07 | 0.42 | 0.24 | |
| Uniform Delay, d1 | 3.0 | | 2.5 | 3.2 | 13.1 | |
| Progression Factor | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.1 | | 0.1 | 0.2 | 0.7 | |
| Delay (s) | 3.1 | | 2.5 | 3.3 | 13.8 | |
| Level of Service | A | | A | A | B | |
| Approach Delay (s) | 3.1 | | | 3.3 | 13.8 | |
| Approach LOS | A | | | A | B | |

| Intersection Summary | | | |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay | 3.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.39 | | |
| Actuated Cycle Length (s) | 32.3 | Sum of lost time (s) | 8.7 |
| Intersection Capacity Utilization | 36.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM 6th TWSC
15: Aubrun St & East Ave

Existing Conditions
Timing Plan: AM Peak

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑ | | ↑ | ↑↑ | | | ↑↓ | | | | ↑ |
| Traffic Vol, veh/h | 0 | 751 | 5 | 0 | 863 | 5 | 0 | 0 | 9 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 751 | 5 | 0 | 863 | 5 | 0 | 0 | 9 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 60 | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 816 | 5 | 0 | 938 | 5 | 0 | 0 | 10 | 0 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|---|------|
| Conflicting Flow All | - | 0 | 0 | 821 | 0 | 0 | 1288 | 1762 | 411 | - | - | 472 |
| Stage 1 | - | - | - | - | - | - | 819 | 819 | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | 469 | 943 | - | - | - | - |
| Critical Hdwy | - | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | 804 | - | - | 121 | 83 | 590 | 0 | 0 | 538 |
| Stage 1 | 0 | - | - | - | - | - | 336 | 388 | - | 0 | 0 | - |
| Stage 2 | 0 | - | - | - | - | - | 544 | 339 | - | 0 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 804 | - | - | 121 | 83 | 590 | - | - | 538 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 241 | 203 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | 336 | 388 | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | 544 | 339 | - | - | - | - |

| Approach | EB | | | WB | | | NB | | | SB | | |
|----------------------|----|--|--|----|--|--|------|--|--|----|--|--|
| HCM Control Delay, s | 0 | | | 0 | | | 11.2 | | | 0 | | |
| HCM LOS | | | | | | | B | | | A | | |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-----|-----|-------|
| Capacity (veh/h) | 590 | - | - | 804 | - | - | - |
| HCM Lane V/C Ratio | 0.017 | - | - | - | - | - | - |
| HCM Control Delay (s) | 11.2 | - | - | 0 | - | - | 0 |
| HCM Lane LOS | B | - | - | A | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↘ | |
| Traffic Vol, veh/h | 700 | 87 | 145 | 805 | 62 | 99 |
| Future Vol, veh/h | 700 | 87 | 145 | 805 | 62 | 99 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 0 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 761 | 95 | 158 | 875 | 67 | 108 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 856 | 0 | 1563 |
| Stage 1 | - | - | - | - | 809 |
| Stage 2 | - | - | - | - | 754 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 780 | - | 102 |
| Stage 1 | - | - | - | - | 398 |
| Stage 2 | - | - | - | - | 425 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 780 | - | 81 |
| Mov Cap-2 Maneuver | - | - | - | - | 204 |
| Stage 1 | - | - | - | - | 398 |
| Stage 2 | - | - | - | - | 339 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 1.6 | 26.5 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 338 | - | - | 780 | - |
| HCM Lane V/C Ratio | 0.518 | - | - | 0.202 | - |
| HCM Control Delay (s) | 26.5 | - | - | 10.8 | - |
| HCM Lane LOS | D | - | - | B | - |
| HCM 95th %tile Q(veh) | 2.8 | - | - | 0.8 | - |

HCM Signalized Intersection Capacity Analysis
 17: East Ave & Loyola Way

Existing Conditions
 Timing Plan: AM Peak



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|-------|-------|------|---------------------------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 50 | 750 | 853 | 16 | 16 | 78 |
| Future Volume (vph) | 50 | 750 | 853 | 16 | 16 | 78 |
| Ideal Flow (vphp) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.7 | 5.3 | | 4.0 | 4.0 |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | | 1.00 | 1.00 |
| Frbp, ped/bikes | 1.00 | 1.00 | 1.00 | | 1.00 | 0.99 |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 1.00 | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (prot) | 1770 | 3539 | 3528 | | 1769 | 1561 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (perm) | 1770 | 3539 | 3528 | | 1769 | 1561 |
| Peak-hour factor, PHF | 0.76 | 0.76 | 0.69 | 0.69 | 0.81 | 0.81 |
| Adj. Flow (vph) | 66 | 987 | 1236 | 23 | 20 | 96 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 84 |
| Lane Group Flow (vph) | 66 | 987 | 1258 | 0 | 20 | 12 |
| Confl. Peds. (#/hr) | | | | 8 | 1 | 4 |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Turn Type | Prot | NA | NA | | Perm | Perm |
| Protected Phases | 5 | 2 | 6 | | | |
| Permitted Phases | | | | | 4 | 4 |
| Actuated Green, G (s) | 3.9 | 37.8 | 29.3 | | 6.5 | 6.5 |
| Effective Green, g (s) | 3.9 | 37.8 | 29.3 | | 6.5 | 6.5 |
| Actuated g/C Ratio | 0.07 | 0.71 | 0.55 | | 0.12 | 0.12 |
| Clearance Time (s) | 4.0 | 4.7 | 5.3 | | 4.0 | 4.0 |
| Vehicle Extension (s) | 2.0 | 3.0 | 3.0 | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 130 | 2524 | 1950 | | 216 | 191 |
| v/s Ratio Prot | 0.04 | c0.28 | c0.36 | | | |
| v/s Ratio Perm | | | | | c0.01 | 0.01 |
| v/c Ratio | 0.51 | 0.39 | 0.65 | | 0.09 | 0.06 |
| Uniform Delay, d1 | 23.6 | 3.0 | 8.2 | | 20.6 | 20.6 |
| Progression Factor | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.1 | 0.1 | 0.7 | | 0.1 | 0.0 |
| Delay (s) | 24.8 | 3.1 | 9.0 | | 20.7 | 20.6 |
| Level of Service | C | A | A | | C | C |
| Approach Delay (s) | | 4.5 | 9.0 | | 20.6 | |
| Approach LOS | | A | A | | C | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 7.6 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.54 | | | |
| Actuated Cycle Length (s) | | | 53.0 | | Sum of lost time (s) | 13.3 |
| Intersection Capacity Utilization | | | 44.3% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↘ | |
| Traffic Vol, veh/h | 704 | 30 | 62 | 821 | 39 | 69 |
| Future Vol, veh/h | 704 | 30 | 62 | 821 | 39 | 69 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 765 | 33 | 67 | 892 | 42 | 75 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 798 | 0 | 1362 |
| Stage 1 | - | - | - | - | 782 |
| Stage 2 | - | - | - | - | 580 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 820 | - | 139 |
| Stage 1 | - | - | - | - | 411 |
| Stage 2 | - | - | - | - | 523 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 820 | - | 128 |
| Mov Cap-2 Maneuver | - | - | - | - | 260 |
| Stage 1 | - | - | - | - | 411 |
| Stage 2 | - | - | - | - | 480 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.7 | 17.3 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 408 | - | - | 820 | - |
| HCM Lane V/C Ratio | 0.288 | - | - | 0.082 | - |
| HCM Control Delay (s) | 17.3 | - | - | 9.8 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 0.3 | - |

HCM 6th TWSC
19: Calvary Ln & East Ave

Existing Conditions
Timing Plan: AM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.2 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↗ | |
| Traffic Vol, veh/h | 754 | 21 | 41 | 883 | 0 | 2 |
| Future Vol, veh/h | 754 | 21 | 41 | 883 | 0 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 25 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 820 | 23 | 45 | 960 | 0 | 2 |























| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 843 | 0 | 1402 |
| Stage 1 | - | - | - | - | 832 |
| Stage 2 | - | - | - | - | 570 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 789 | - | 131 |
| Stage 1 | - | - | - | - | 388 |
| Stage 2 | - | - | - | - | 529 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 789 | - | 124 |
| Mov Cap-2 Maneuver | - | - | - | - | 255 |
| Stage 1 | - | - | - | - | 388 |
| Stage 2 | - | - | - | - | 499 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.4 | 11.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 580 | - | - | 789 | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.056 | - |
| HCM Control Delay (s) | 11.2 | - | - | 9.8 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | - |

HCM Signalized Intersection Capacity Analysis
 20: East Ave & Mines Rd

Existing Conditions
 Timing Plan: AM Peak

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|--|---|---|--|---|--|--|---|--|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  |   | | |   | | |   | |   | |  | |
| Traffic Volume (vph) | 177 | 584 | 0 | 0 | 618 | 161 | 0 | 0 | 0 | 103 | 0 | 306 | |
| Future Volume (vph) | 177 | 584 | 0 | 0 | 618 | 161 | 0 | 0 | 0 | 103 | 0 | 306 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 4.0 | 5.4 | | | 5.4 | | | | | 4.0 | | 4.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | | | | | 0.97 | | 1.00 | |
| Frbp, ped/bikes | 1.00 | 1.00 | | | 0.99 | | | | | 1.00 | | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | | 1.00 | | | | | 1.00 | | 1.00 | |
| Frt | 1.00 | 1.00 | | | 0.97 | | | | | 1.00 | | 0.85 | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | | | | | 0.95 | | 1.00 | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3412 | | | | | 3433 | | 1583 | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | | | | | 0.95 | | 1.00 | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3412 | | | | | 3433 | | 1583 | |
| Peak-hour factor, PHF | 0.74 | 0.74 | 0.74 | 0.75 | 0.75 | 0.75 | 0.92 | 0.92 | 0.92 | 0.80 | 0.80 | 0.80 | |
| Adj. Flow (vph) | 239 | 789 | 0 | 0 | 824 | 215 | 0 | 0 | 0 | 129 | 0 | 382 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 318 | |
| Lane Group Flow (vph) | 239 | 789 | 0 | 0 | 1018 | 0 | 0 | 0 | 0 | 129 | 0 | 65 | |
| Confl. Peds. (#/hr) | | | | | | | 18 | | | | | 1 | |
| Confl. Bikes (#/hr) | | | 26 | | | | 2 | | | | | | |
| Turn Type | Prot | NA | | | NA | | | | | Prot | | Prot | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | | 4 | | 4 | |
| Permitted Phases | | | | | | | | | | | | | |
| Actuated Green, G (s) | 14.6 | 43.2 | | | 24.6 | | | | | 10.7 | | 10.7 | |
| Effective Green, g (s) | 14.6 | 43.2 | | | 24.6 | | | | | 10.7 | | 10.7 | |
| Actuated g/C Ratio | 0.23 | 0.68 | | | 0.39 | | | | | 0.17 | | 0.17 | |
| Clearance Time (s) | 4.0 | 5.4 | | | 5.4 | | | | | 4.0 | | 4.0 | |
| Vehicle Extension (s) | 2.0 | 1.0 | | | 1.0 | | | | | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | 408 | 2415 | | | 1325 | | | | | 580 | | 267 | |
| v/s Ratio Prot | c0.14 | 0.22 | | | c0.30 | | | | | 0.04 | | c0.04 | |
| v/s Ratio Perm | | | | | | | | | | | | | |
| v/c Ratio | 0.59 | 0.33 | | | 0.77 | | | | | 0.22 | | 0.24 | |
| Uniform Delay, d1 | 21.7 | 4.1 | | | 16.9 | | | | | 22.7 | | 22.8 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | | | | 1.00 | | 1.00 | |
| Incremental Delay, d2 | 1.4 | 0.0 | | | 2.5 | | | | | 0.2 | | 0.5 | |
| Delay (s) | 23.0 | 4.1 | | | 19.3 | | | | | 22.9 | | 23.3 | |
| Level of Service | C | A | | | B | | | | | C | | C | |
| Approach Delay (s) | | 8.5 | | | 19.3 | | | 0.0 | | | 23.2 | | |
| Approach LOS | | A | | | B | | | A | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 15.8 | | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.65 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 63.3 | | | | | | | | | Sum of lost time (s) | 17.4 |
| Intersection Capacity Utilization | | | 50.3% | | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

c Critical Lane Group

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | ↘ | ↑↑ | ↑↑ | | ↘ | ↘ |
| Traffic Vol, veh/h | 28 | 659 | 717 | 2 | 7 | 62 |
| Future Vol, veh/h | 28 | 659 | 717 | 2 | 7 | 62 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 120 | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 30 | 716 | 779 | 2 | 8 | 67 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 781 | 0 | - | 0 | 1198 391 |
| Stage 1 | - | - | - | - | 780 - |
| Stage 2 | - | - | - | - | 418 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 832 | - | - | - | 178 608 |
| Stage 1 | - | - | - | - | 412 - |
| Stage 2 | - | - | - | - | 632 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 832 | - | - | - | 172 608 |
| Mov Cap-2 Maneuver | - | - | - | - | 172 - |
| Stage 1 | - | - | - | - | 397 - |
| Stage 2 | - | - | - | - | 632 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.4 | 0 | 13.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 832 | - | - | - | 172 | 608 |
| HCM Lane V/C Ratio | 0.037 | - | - | - | 0.044 | 0.111 |
| HCM Control Delay (s) | 9.5 | - | - | - | 26.9 | 11.7 |
| HCM Lane LOS | A | - | - | - | D | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.1 | 0.4 |

HCM 6th Signalized Intersection Summary
22: Charlotte Wy & East Ave

Existing Conditions
Timing Plan: AM Peak



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗↗ | ↖ | ↖ | ↗↗ | ↖ | ↖ | ↗ | | ↖ | ↗ | |
| Traffic Volume (veh/h) | 66 | 513 | 66 | 13 | 329 | 25 | 207 | 34 | 29 | 49 | 28 | 156 |
| Future Volume (veh/h) | 66 | 513 | 66 | 13 | 329 | 25 | 207 | 34 | 29 | 49 | 28 | 156 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.96 | 1.00 | | 0.97 | 1.00 | | 0.98 | 1.00 | | 0.98 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 85 | 658 | 85 | 16 | 396 | 30 | 314 | 52 | 44 | 59 | 34 | 188 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.83 | 0.83 | 0.83 | 0.66 | 0.66 | 0.66 | 0.83 | 0.83 | 0.83 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 109 | 1029 | 441 | 21 | 855 | 372 | 502 | 373 | 316 | 623 | 98 | 544 |
| Arrive On Green | 0.06 | 0.29 | 0.29 | 0.01 | 0.24 | 0.24 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| Sat Flow, veh/h | 1781 | 3554 | 1521 | 1781 | 3554 | 1544 | 1154 | 927 | 784 | 1293 | 245 | 1352 |
| Grp Volume(v), veh/h | 85 | 658 | 85 | 16 | 396 | 30 | 314 | 0 | 96 | 59 | 0 | 222 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1521 | 1781 | 1777 | 1544 | 1154 | 0 | 1711 | 1293 | 0 | 1597 |
| Q Serve(g_s), s | 2.3 | 7.8 | 2.0 | 0.4 | 4.6 | 0.7 | 12.5 | 0.0 | 1.7 | 1.5 | 0.0 | 4.7 |
| Cycle Q Clear(g_c), s | 2.3 | 7.8 | 2.0 | 0.4 | 4.6 | 0.7 | 17.2 | 0.0 | 1.7 | 3.2 | 0.0 | 4.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.46 | 1.00 | | 0.85 |
| Lane Grp Cap(c), veh/h | 109 | 1029 | 441 | 21 | 855 | 372 | 502 | 0 | 688 | 623 | 0 | 642 |
| V/C Ratio(X) | 0.78 | 0.64 | 0.19 | 0.75 | 0.46 | 0.08 | 0.63 | 0.00 | 0.14 | 0.09 | 0.00 | 0.35 |
| Avail Cap(c_a), veh/h | 553 | 2944 | 1260 | 553 | 2944 | 1279 | 516 | 0 | 709 | 639 | 0 | 661 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.4 | 15.0 | 12.9 | 23.8 | 15.7 | 14.2 | 16.0 | 0.0 | 9.1 | 10.1 | 0.0 | 10.0 |
| Incr Delay (d2), s/veh | 4.6 | 0.5 | 0.2 | 17.4 | 0.3 | 0.1 | 2.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 2.6 | 0.6 | 0.3 | 1.6 | 0.2 | 3.2 | 0.0 | 0.6 | 0.4 | 0.0 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 26.9 | 15.4 | 13.1 | 41.2 | 16.0 | 14.3 | 18.3 | 0.0 | 9.2 | 10.2 | 0.0 | 10.3 |
| LnGrp LOS | C | B | B | D | B | B | B | A | A | B | A | B |
| Approach Vol, veh/h | | 828 | | | 442 | | | 410 | | | 281 | |
| Approach Delay, s/veh | | 16.4 | | | 16.8 | | | 16.2 | | | 10.3 | |
| Approach LOS | | B | | | B | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 6.9 | 17.0 | | 24.3 | 4.6 | 19.4 | | 24.3 | | | | |
| Change Period (Y+Rc), s | 4.0 | 5.4 | | 4.9 | 4.0 | 5.4 | | 4.9 | | | | |
| Max Green Setting (Gmax), s | 15.0 | 40.0 | | 20.0 | 15.0 | 40.0 | | 20.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.3 | 6.6 | | 6.7 | 2.4 | 9.8 | | 19.2 | | | | |
| Green Ext Time (p_c), s | 0.1 | 2.1 | | 1.3 | 0.0 | 3.9 | | 0.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 15.5 |
| HCM 6th LOS | B |

Notes

User approved pedestrian interval to be less than phase max green.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↵ | ↕ | | ↵ | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 7 | 545 | 48 | 76 | 294 | 5 | 48 | 0 | 16 | 7 | 0 | 14 |
| Future Vol, veh/h | 7 | 545 | 48 | 76 | 294 | 5 | 48 | 0 | 16 | 7 | 0 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 592 | 52 | 83 | 320 | 5 | 52 | 0 | 17 | 8 | 0 | 15 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 325 | 0 | 0 | 644 | 0 | 0 | 960 | 1125 | 322 | 801 | 1149 | 163 |
| Stage 1 | - | - | - | - | - | - | 634 | 634 | - | 489 | 489 | - |
| Stage 2 | - | - | - | - | - | - | 326 | 491 | - | 312 | 660 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 1231 | - | - | 937 | - | - | 211 | 204 | 674 | 276 | 197 | 853 |
| Stage 1 | - | - | - | - | - | - | 434 | 471 | - | 529 | 548 | - |
| Stage 2 | - | - | - | - | - | - | 661 | 546 | - | 673 | 458 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 1231 | - | - | 937 | - | - | 192 | 185 | 674 | 250 | 178 | 853 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 192 | 185 | - | 250 | 178 | - |
| Stage 1 | - | - | - | - | - | - | 431 | 468 | - | 526 | 499 | - |
| Stage 2 | - | - | - | - | - | - | 592 | 497 | - | 651 | 455 | - |

| Approach | EB | | | WB | | | NB | | | SB | | |
|----------------------|-----|--|--|-----|--|--|------|--|--|----|--|--|
| HCM Control Delay, s | 0.1 | | | 1.9 | | | 26.8 | | | 13 | | |
| HCM LOS | | | | | | | D | | | B | | |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 234 | 1231 | - | - | 937 | - | - | 473 |
| HCM Lane V/C Ratio | 0.297 | 0.006 | - | - | 0.088 | - | - | 0.048 |
| HCM Control Delay (s) | 26.8 | 7.9 | - | - | 9.2 | - | - | 13 |
| HCM Lane LOS | D | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 1.2 | 0 | - | - | 0.3 | - | - | 0.2 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 9 | 566 | 350 | 9 | 12 | 25 |
| Future Vol, veh/h | 9 | 566 | 350 | 9 | 12 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 25 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 81 | 81 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 699 | 455 | 12 | 16 | 32 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 467 | 0 | - | 0 | 833 |
| Stage 1 | - | - | - | - | 461 |
| Stage 2 | - | - | - | - | 372 |
| Critical Hdwy | 4.14 | - | - | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 |
| Pot Cap-1 Maneuver | 1091 | - | - | - | 307 |
| Stage 1 | - | - | - | - | 601 |
| Stage 2 | - | - | - | - | 667 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1091 | - | - | - | 304 |
| Mov Cap-2 Maneuver | - | - | - | - | 304 |
| Stage 1 | - | - | - | - | 595 |
| Stage 2 | - | - | - | - | 667 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.1 | 0 | 12.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|------|-----|-----|-----|-------|
| Capacity (veh/h) | 1091 | - | - | - | 514 |
| HCM Lane V/C Ratio | 0.01 | - | - | - | 0.093 |
| HCM Control Delay (s) | 8.3 | - | - | - | 12.7 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.3 |

HCM 6th TWSC
25: Rovello Loop & East Ave

Existing Conditions
Timing Plan: AM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | | ↑↑ | | ↑ |
| Traffic Vol, veh/h | 573 | 2 | 0 | 358 | 0 | 5 |
| Future Vol, veh/h | 573 | 2 | 0 | 358 | 0 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 623 | 2 | 0 | 389 | 0 | 5 |

| Major/Minor | Major1 | Major2 | Minor1 | | | |
|----------------------|--------|--------|--------|---|---|------|
| Conflicting Flow All | 0 | 0 | - | - | - | 313 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 683 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | - | - | 683 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | NB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 10.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|-----------------------|-------|-----|-----|-----|
| Capacity (veh/h) | 683 | - | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | - |
| HCM Control Delay (s) | 10.3 | - | - | - |
| HCM Lane LOS | B | - | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - |

HCM 6th Signalized Intersection Summary
26: Vasco Rd & East Ave

Existing Conditions
Timing Plan: AM Peak



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↔↔ | ↔ | | ↔ | ↔↔ | | ↔ | ↔↔ | | ↔↔ | ↔ | ↔ |
| Traffic Volume (veh/h) | 184 | 331 | 24 | 6 | 14 | 26 | 83 | 211 | 212 | 248 | 229 | 261 |
| Future Volume (veh/h) | 184 | 331 | 24 | 6 | 14 | 26 | 83 | 211 | 212 | 248 | 229 | 261 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.94 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.98 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 224 | 404 | 29 | 10 | 23 | 43 | 94 | 240 | 241 | 314 | 290 | 330 |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.61 | 0.61 | 0.61 | 0.88 | 0.88 | 0.88 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 529 | 470 | 34 | 27 | 242 | 216 | 226 | 508 | 453 | 433 | 532 | 444 |
| Arrive On Green | 0.15 | 0.27 | 0.27 | 0.02 | 0.14 | 0.14 | 0.13 | 0.29 | 0.29 | 0.13 | 0.28 | 0.28 |
| Sat Flow, veh/h | 3456 | 1716 | 123 | 1781 | 1777 | 1585 | 1781 | 1777 | 1585 | 3456 | 1870 | 1560 |
| Grp Volume(v), veh/h | 224 | 0 | 433 | 10 | 23 | 43 | 94 | 240 | 241 | 314 | 290 | 330 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 0 | 1839 | 1781 | 1777 | 1585 | 1781 | 1777 | 1585 | 1728 | 1870 | 1560 |
| Q Serve(g_s), s | 3.8 | 0.0 | 14.3 | 0.4 | 0.7 | 1.5 | 3.1 | 7.1 | 8.2 | 5.6 | 8.4 | 12.3 |
| Cycle Q Clear(g_c), s | 3.8 | 0.0 | 14.3 | 0.4 | 0.7 | 1.5 | 3.1 | 7.1 | 8.2 | 5.6 | 8.4 | 12.3 |
| Prop In Lane | 1.00 | | 0.07 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 529 | 0 | 504 | 27 | 242 | 216 | 226 | 508 | 453 | 433 | 532 | 444 |
| V/C Ratio(X) | 0.42 | 0.00 | 0.86 | 0.37 | 0.10 | 0.20 | 0.42 | 0.47 | 0.53 | 0.73 | 0.54 | 0.74 |
| Avail Cap(c_a), veh/h | 1887 | 0 | 717 | 834 | 693 | 618 | 695 | 815 | 727 | 1078 | 876 | 730 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.6 | 0.0 | 22.1 | 31.2 | 24.2 | 24.6 | 25.8 | 18.9 | 19.3 | 27.0 | 19.4 | 20.8 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 5.5 | 3.1 | 0.1 | 0.2 | 0.9 | 0.3 | 0.4 | 0.9 | 1.2 | 3.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.4 | 0.0 | 6.2 | 0.2 | 0.3 | 0.5 | 1.3 | 2.6 | 2.7 | 2.1 | 3.3 | 4.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 25.1 | 0.0 | 27.6 | 34.3 | 24.3 | 24.8 | 26.7 | 19.1 | 19.6 | 27.8 | 20.7 | 24.3 |
| LnGrp LOS | C | A | C | C | C | C | C | B | B | C | C | C |
| Approach Vol, veh/h | | 657 | | | 76 | | | 575 | | | 934 | |
| Approach Delay, s/veh | | 26.7 | | | 25.9 | | | 20.6 | | | 24.4 | |
| Approach LOS | | C | | | C | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 5.1 | 22.9 | 12.2 | 23.9 | 13.9 | 14.0 | 12.1 | 24.0 | | | | |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 5.7 | 4.1 | 5.3 | 4.1 | 5.7 | | | | |
| Max Green Setting (Gmax), s | 30.0 | 25.0 | 25.0 | 30.0 | 35.0 | 25.0 | 20.0 | 29.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.4 | 16.3 | 5.1 | 14.3 | 5.8 | 3.5 | 7.6 | 10.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 1.1 | 0.1 | 3.6 | 0.7 | 0.2 | 0.5 | 1.7 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 24.1 |
| HCM 6th LOS | C |

Notes

User approved pedestrian interval to be less than phase max green.

HCM Signalized Intersection Capacity Analysis

1: Livermore Ave & East Ave

Existing Conditions

Timing Plan: PM Peak



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|------|------|-------|------|---------------------------|-------|
| Lane Configurations | | ↔↔ | ↕↔ | | | ↔↔ |
| Traffic Volume (vph) | 0 | 541 | 277 | 2 | 699 | 294 |
| Future Volume (vph) | 0 | 541 | 277 | 2 | 699 | 294 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.1 | 4.1 | | | 4.1 |
| Lane Util. Factor | | 0.88 | 0.95 | | | 0.95 |
| Frbp, ped/bikes | | 1.00 | 1.00 | | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 |
| Frt | | 0.85 | 1.00 | | | 1.00 |
| Flt Protected | | 1.00 | 1.00 | | | 0.97 |
| Satd. Flow (prot) | | 2787 | 3535 | | | 3419 |
| Flt Permitted | | 1.00 | 1.00 | | | 0.97 |
| Satd. Flow (perm) | | 2787 | 3535 | | | 3419 |
| Peak-hour factor, PHF | 0.82 | 0.82 | 0.90 | 0.90 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 660 | 308 | 2 | 736 | 309 |
| RTOR Reduction (vph) | 0 | 489 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 171 | 310 | 0 | 0 | 1045 |
| Confl. Peds. (#/hr) | | 4 | | 9 | | |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Turn Type | | Prot | NA | | Split | NA |
| Protected Phases | | 2 | 4 | | 1 2 8 | 1 2 8 |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | 35.1 | 24.5 | | | 102.5 |
| Effective Green, g (s) | | 35.1 | 24.5 | | | 98.0 |
| Actuated g/C Ratio | | 0.26 | 0.18 | | | 0.72 |
| Clearance Time (s) | | 4.1 | 4.1 | | | |
| Vehicle Extension (s) | | 4.0 | 3.0 | | | |
| Lane Grp Cap (vph) | | 723 | 640 | | | 2478 |
| v/s Ratio Prot | | 0.06 | c0.09 | | | c0.31 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.24 | 0.48 | | | 0.42 |
| Uniform Delay, d1 | | 39.5 | 49.7 | | | 7.4 |
| Progression Factor | | 1.00 | 1.00 | | | 0.46 |
| Incremental Delay, d2 | | 0.2 | 0.6 | | | 0.1 |
| Delay (s) | | 39.7 | 50.3 | | | 3.5 |
| Level of Service | | D | D | | | A |
| Approach Delay (s) | 39.7 | | 50.3 | | | 3.5 |
| Approach LOS | D | | D | | | A |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 22.5 | | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | | | 0.45 | | | |
| Actuated Cycle Length (s) | | | 135.2 | | Sum of lost time (s) | 16.8 |
| Intersection Capacity Utilization | | | 65.5% | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

HCM 6th TWSC
2: 5th St & East Ave

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NEL | NER |
| Lane Configurations | ↑↑ | | | ↑↑ | ↑ | ↑ |
| Traffic Vol, veh/h | 698 | 3 | 16 | 540 | 1 | 28 |
| Future Vol, veh/h | 698 | 3 | 16 | 540 | 1 | 28 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 759 | 3 | 17 | 587 | 1 | 30 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 0 | 0 | 762 | 0 | 1089 381 |
| Stage 1 | - | - | - | - | 761 - |
| Stage 2 | - | - | - | - | 328 - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | - | - | 846 | - | 210 617 |
| Stage 1 | - | - | - | - | 422 - |
| Stage 2 | - | - | - | - | 702 - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 846 | - | 204 617 |
| Mov Cap-2 Maneuver | - | - | - | - | 204 - |
| Stage 1 | - | - | - | - | 422 - |
| Stage 2 | - | - | - | - | 681 - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.4 | 11.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 577 | - | - | 846 | - |
| HCM Lane V/C Ratio | 0.055 | - | - | 0.021 | - |
| HCM Control Delay (s) | 11.6 | - | - | 9.3 | 0.1 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.1 | - |

HCM 6th TWSC
3: East Ave & 6th St

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.2 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 14 | 700 | 562 | 6 | 0 | 9 |
| Future Vol, veh/h | 14 | 700 | 562 | 6 | 0 | 9 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 90 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 761 | 611 | 7 | 0 | 10 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 618 | 0 | - | 0 | 1026 309 |
| Stage 1 | - | - | - | - | 615 - |
| Stage 2 | - | - | - | - | 411 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 958 | - | - | - | 231 687 |
| Stage 1 | - | - | - | - | 502 - |
| Stage 2 | - | - | - | - | 638 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 958 | - | - | - | 227 687 |
| Mov Cap-2 Maneuver | - | - | - | - | 227 - |
| Stage 1 | - | - | - | - | 494 - |
| Stage 2 | - | - | - | - | 638 - |

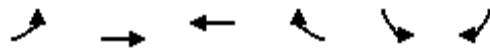
| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.2 | 0 | 10.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 958 | - | - | - | 687 |
| HCM Lane V/C Ratio | 0.016 | - | - | - | 0.014 |
| HCM Control Delay (s) | 8.8 | - | - | - | 10.3 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0 |

HCM Signalized Intersection Capacity Analysis

4: East Ave & Maple St

Existing Conditions
Timing Plan: PM Peak



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|------|-------|------|---------------------------|------|
| Lane Configurations | | ↑↑ | ↑↑ | | ↵ | ↵ |
| Traffic Volume (vph) | 0 | 688 | 562 | 198 | 206 | 4 |
| Future Volume (vph) | 0 | 688 | 562 | 198 | 206 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.4 | 4.4 | | 4.0 | 4.0 |
| Lane Util. Factor | | 0.95 | 0.95 | | 1.00 | 1.00 |
| Frbp, ped/bikes | | 1.00 | 0.99 | | 1.00 | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Frt | | 1.00 | 0.96 | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (prot) | | 3539 | 3379 | | 1770 | 1583 |
| Flt Permitted | | 1.00 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (perm) | | 3539 | 3379 | | 1770 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.94 | 0.94 | 0.80 | 0.80 |
| Adj. Flow (vph) | 0 | 748 | 598 | 211 | 258 | 5 |
| RTOR Reduction (vph) | 0 | 0 | 39 | 0 | 0 | 1 |
| Lane Group Flow (vph) | 0 | 748 | 770 | 0 | 258 | 4 |
| Confl. Peds. (#/hr) | | | | 3 | 16 | |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Turn Type | | NA | NA | | Prot | Perm |
| Protected Phases | | 2 | 6 | | 4 | |
| Permitted Phases | | | | | | 4 |
| Actuated Green, G (s) | | 21.9 | 21.9 | | 14.6 | 14.6 |
| Effective Green, g (s) | | 21.9 | 21.9 | | 14.6 | 14.6 |
| Actuated g/C Ratio | | 0.42 | 0.42 | | 0.28 | 0.28 |
| Clearance Time (s) | | 4.4 | 4.4 | | 4.0 | 4.0 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 1499 | 1431 | | 499 | 447 |
| v/s Ratio Prot | | 0.21 | c0.23 | | c0.15 | |
| v/s Ratio Perm | | | | | | 0.00 |
| v/c Ratio | | 0.50 | 0.54 | | 0.52 | 0.01 |
| Uniform Delay, d1 | | 10.9 | 11.1 | | 15.6 | 13.3 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 0.3 | 0.4 | | 0.9 | 0.0 |
| Delay (s) | | 11.2 | 11.5 | | 16.5 | 13.3 |
| Level of Service | | B | B | | B | B |
| Approach Delay (s) | | 11.2 | 11.5 | | 16.4 | |
| Approach LOS | | B | B | | B | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 12.1 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.49 | | | |
| Actuated Cycle Length (s) | | | 51.7 | | Sum of lost time (s) | 12.4 |
| Intersection Capacity Utilization | | | 41.2% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NEL | NER |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | | ↖ |
| Traffic Vol, veh/h | 866 | 28 | 55 | 770 | 0 | 51 |
| Future Vol, veh/h | 866 | 28 | 55 | 770 | 0 | 51 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 70 | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 941 | 30 | 60 | 837 | 0 | 55 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 971 | 0 | 486 |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |
| Critical Hdwy | - | - | 4.14 | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.32 |
| Pot Cap-1 Maneuver | - | - | 706 | - | 527 |
| Stage 1 | - | - | - | - | 0 |
| Stage 2 | - | - | - | - | 0 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 706 | - | 527 |
| Mov Cap-2 Maneuver | - | - | - | - | - |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.7 | 12.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 527 | - | - | 706 | - |
| HCM Lane V/C Ratio | 0.105 | - | - | 0.085 | - |
| HCM Control Delay (s) | 12.6 | - | - | 10.6 | - |
| HCM Lane LOS | B | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.4 | - | - | 0.3 | - |

HCM 6th Signalized Intersection Summary
6: Dolores St & East Ave

Existing Conditions
Timing Plan: PM Peak



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | | | ↕ | |
| Traffic Volume (veh/h) | 0 | 868 | 69 | 123 | 770 | 1 | 44 | 0 | 201 | 0 | 0 | 0 |
| Future Volume (veh/h) | 0 | 868 | 69 | 123 | 770 | 1 | 44 | 0 | 201 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.97 | 1.00 | | 0.97 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 954 | 76 | 128 | 802 | 1 | 56 | 0 | 258 | 0 | 0 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.96 | 0.96 | 0.96 | 0.78 | 0.78 | 0.78 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 3 | 1440 | 115 | 167 | 2185 | 3 | 423 | 0 | 372 | 0 | 3 | 0 |
| Arrive On Green | 0.00 | 0.43 | 0.43 | 0.09 | 0.60 | 0.60 | 0.24 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3326 | 265 | 1781 | 3642 | 5 | 1781 | 0 | 1569 | 0 | 1870 | 0 |
| Grp Volume(v), veh/h | 0 | 510 | 520 | 128 | 391 | 412 | 56 | 0 | 258 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1814 | 1781 | 1777 | 1869 | 1781 | 0 | 1569 | 0 | 1870 | 0 |
| Q Serve(g_s), s | 0.0 | 12.8 | 12.8 | 3.9 | 6.3 | 6.3 | 1.4 | 0.0 | 8.4 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 12.8 | 12.8 | 3.9 | 6.3 | 6.3 | 1.4 | 0.0 | 8.4 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 3 | 769 | 785 | 167 | 1066 | 1121 | 423 | 0 | 372 | 0 | 3 | 0 |
| V/C Ratio(X) | 0.00 | 0.66 | 0.66 | 0.77 | 0.37 | 0.37 | 0.13 | 0.00 | 0.69 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 255 | 1112 | 1135 | 796 | 1112 | 1170 | 796 | 0 | 702 | 0 | 268 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 12.6 | 12.6 | 24.7 | 5.7 | 5.7 | 16.8 | 0.0 | 19.5 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 1.4 | 1.4 | 2.8 | 0.3 | 0.3 | 0.2 | 0.0 | 3.3 | 0.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 4.5 | 4.6 | 1.7 | 1.8 | 1.8 | 0.6 | 0.0 | 3.2 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 14.0 | 14.0 | 27.5 | 6.0 | 6.0 | 17.0 | 0.0 | 22.7 | 0.0 | 0.0 | 0.0 |
| LnGrp LOS | A | B | B | C | A | A | B | A | C | A | A | A |
| Approach Vol, veh/h | | 1030 | | | 931 | | | 314 | | | | 0 |
| Approach Delay, s/veh | | 14.0 | | | 9.0 | | | 21.7 | | | | 0.0 |
| Approach LOS | | B | | | A | | | C | | | | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 0.0 | 38.5 | | 17.4 | 9.3 | 29.2 | | 0.0 | | | | |
| Change Period (Y+Rc), s | 4.1 | 5.0 | | 4.1 | 4.1 | 5.0 | | 4.1 | | | | |
| Max Green Setting (Gmax), s | 8.0 | 35.0 | | 25.0 | 25.0 | 35.0 | | 8.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 0.0 | 8.3 | | 10.4 | 5.9 | 14.8 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 7.9 | | 2.2 | 0.1 | 9.4 | | 0.0 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 13.0 |
| HCM 6th LOS | B |

Notes

User approved pedestrian interval to be less than phase max green.

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 82 | 980 | 848 | 16 | 7 | 47 |
| Future Vol, veh/h | 82 | 980 | 848 | 16 | 7 | 47 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 115 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 89 | 1065 | 922 | 17 | 8 | 51 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 939 | 0 | - | 0 | 1642 470 |
| Stage 1 | - | - | - | - | 931 - |
| Stage 2 | - | - | - | - | 711 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 726 | - | - | - | 91 540 |
| Stage 1 | - | - | - | - | 344 - |
| Stage 2 | - | - | - | - | 448 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 726 | - | - | - | 80 540 |
| Mov Cap-2 Maneuver | - | - | - | - | 80 - |
| Stage 1 | - | - | - | - | 302 - |
| Stage 2 | - | - | - | - | 448 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.8 | 0 | 19.4 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 726 | - | - | - | 309 |
| HCM Lane V/C Ratio | 0.123 | - | - | - | 0.19 |
| HCM Control Delay (s) | 10.7 | - | - | - | 19.4 |
| HCM Lane LOS | B | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.7 |

HCM 6th TWSC
8: East Ave & Estate St

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | | ↑↑ | |
| Traffic Vol, veh/h | 37 | 920 | 872 | 17 | 6 | 26 |
| Future Vol, veh/h | 37 | 920 | 872 | 17 | 6 | 26 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 40 | 1000 | 948 | 18 | 7 | 28 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 966 | 0 | - | 0 | 1537 483 |
| Stage 1 | - | - | - | - | 957 - |
| Stage 2 | - | - | - | - | 580 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 709 | - | - | - | 107 530 |
| Stage 1 | - | - | - | - | 333 - |
| Stage 2 | - | - | - | - | 523 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 709 | - | - | - | 93 530 |
| Mov Cap-2 Maneuver | - | - | - | - | 209 - |
| Stage 1 | - | - | - | - | 291 - |
| Stage 2 | - | - | - | - | 523 - |

| Approach | EB | WB | SB |
|----------------------|----|----|------|
| HCM Control Delay, s | 1 | 0 | 14.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 709 | - | - | - | 411 |
| HCM Lane V/C Ratio | 0.057 | - | - | - | 0.085 |
| HCM Control Delay (s) | 10.4 | 0.6 | - | - | 14.6 |
| HCM Lane LOS | B | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.3 |

HCM Signalized Intersection Capacity Analysis

9: Hillcrest Ave & East Ave

Existing Conditions

Timing Plan: PM Peak



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|------|-------|-------|-------|------|-------|------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 91 | 760 | 56 | 11 | 775 | 64 | 43 | 8 | 6 | 76 | 10 | 68 |
| Future Volume (vph) | 91 | 760 | 56 | 11 | 775 | 64 | 43 | 8 | 6 | 76 | 10 | 68 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.1 | 4.7 | | 4.1 | 4.7 | | 4.1 | 4.1 | | 4.1 | 4.1 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frbp, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 0.94 | | 1.00 | 0.87 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1770 | 3496 | | 1770 | 3487 | | 1770 | 1734 | | 1770 | 1596 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1770 | 3496 | | 1770 | 3487 | | 1770 | 1734 | | 1770 | 1596 | |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.75 | 0.75 | 0.75 | 0.84 | 0.84 | 0.84 |
| Adj. Flow (vph) | 106 | 884 | 65 | 13 | 901 | 74 | 57 | 11 | 8 | 90 | 12 | 81 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 106 | 946 | 0 | 13 | 971 | 0 | 57 | 19 | 0 | 90 | 93 | 0 |
| Confl. Peds. (#/hr) | | | 5 | | | 11 | | | 2 | | | 6 |
| Confl. Bikes (#/hr) | | | 1 | | | 8 | | | 1 | | | |
| Turn Type | Prot | NA | | Prot | NA | | Split | NA | | Split | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 4 | 4 | | 3 | 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | 7.7 | 42.8 | | 0.8 | 35.9 | | 7.9 | 7.9 | | 9.2 | 9.2 | |
| Effective Green, g (s) | 7.7 | 42.8 | | 0.8 | 35.9 | | 7.9 | 7.9 | | 9.2 | 9.2 | |
| Actuated g/C Ratio | 0.10 | 0.55 | | 0.01 | 0.46 | | 0.10 | 0.10 | | 0.12 | 0.12 | |
| Clearance Time (s) | 4.1 | 4.7 | | 4.1 | 4.7 | | 4.1 | 4.1 | | 4.1 | 4.1 | |
| Vehicle Extension (s) | 2.0 | 3.0 | | 2.0 | 3.0 | | 2.5 | 2.5 | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | 175 | 1925 | | 18 | 1611 | | 179 | 176 | | 209 | 188 | |
| v/s Ratio Prot | c0.06 | 0.27 | | 0.01 | c0.28 | | c0.03 | 0.01 | | 0.05 | c0.06 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | 0.61 | 0.49 | | 0.72 | 0.60 | | 0.32 | 0.11 | | 0.43 | 0.49 | |
| Uniform Delay, d1 | 33.5 | 10.7 | | 38.3 | 15.6 | | 32.4 | 31.7 | | 31.8 | 32.1 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.0 | 0.2 | | 77.2 | 0.6 | | 0.7 | 0.2 | | 1.0 | 1.5 | |
| Delay (s) | 37.6 | 10.9 | | 115.5 | 16.2 | | 33.2 | 31.9 | | 32.9 | 33.6 | |
| Level of Service | D | B | | F | B | | C | C | | C | C | |
| Approach Delay (s) | | 13.6 | | | 17.5 | | | 32.8 | | | 33.2 | |
| Approach LOS | | B | | | B | | | C | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 17.5 | | | | | | | | | B |
| HCM 2000 Volume to Capacity ratio | | | 0.55 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 77.7 | | | | | | | | 17.0 | |
| Intersection Capacity Utilization | | | 52.6% | | | | | | | | | A |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↗ | |
| Traffic Vol, veh/h | 843 | 7 | 27 | 853 | 11 | 4 |
| Future Vol, veh/h | 843 | 7 | 27 | 853 | 11 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 50 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 916 | 8 | 29 | 927 | 12 | 4 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 924 | 0 | 1442 |
| Stage 1 | - | - | - | - | 920 |
| Stage 2 | - | - | - | - | 522 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 735 | - | 123 |
| Stage 1 | - | - | - | - | 349 |
| Stage 2 | - | - | - | - | 560 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 735 | - | 118 |
| Mov Cap-2 Maneuver | - | - | - | - | 118 |
| Stage 1 | - | - | - | - | 349 |
| Stage 2 | - | - | - | - | 538 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.3 | 32.1 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|------|-----|
| Capacity (veh/h) | 149 | - | - | 735 | - |
| HCM Lane V/C Ratio | 0.109 | - | - | 0.04 | - |
| HCM Control Delay (s) | 32.1 | - | - | 10.1 | - |
| HCM Lane LOS | D | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.4 | - | - | 0.1 | - |

HCM 6th TWSC
11: East Ave & Hayes Ave

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.5 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 78 | 791 | 794 | 95 | 91 | 77 |
| Future Vol, veh/h | 78 | 791 | 794 | 95 | 91 | 77 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 50 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 85 | 860 | 863 | 103 | 99 | 84 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 966 | 0 | - | 0 | 1515 483 |
| Stage 1 | - | - | - | - | 915 - |
| Stage 2 | - | - | - | - | 600 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 709 | - | - | - | 110 530 |
| Stage 1 | - | - | - | - | 351 - |
| Stage 2 | - | - | - | - | 511 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 709 | - | - | - | - 97 530 |
| Mov Cap-2 Maneuver | - | - | - | - | 217 - |
| Stage 1 | - | - | - | - | 309 - |
| Stage 2 | - | - | - | - | 511 - |

| Approach | EB | WB | SB |
|----------------------|----|----|------|
| HCM Control Delay, s | 1 | 0 | 34.5 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|------|-----|-----|-----|-------|
| Capacity (veh/h) | 709 | - | - | - | 298 |
| HCM Lane V/C Ratio | 0.12 | - | - | - | 0.613 |
| HCM Control Delay (s) | 10.8 | - | - | - | 34.5 |
| HCM Lane LOS | B | - | - | - | D |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 3.8 |

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
12: Nielsen Ln & East Ave

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.3 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↗ | |
| Traffic Vol, veh/h | 842 | 28 | 11 | 911 | 16 | 14 |
| Future Vol, veh/h | 842 | 28 | 11 | 911 | 16 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 50 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 915 | 30 | 12 | 990 | 17 | 15 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 945 | 0 | 1449 |
| Stage 1 | - | - | - | - | 930 |
| Stage 2 | - | - | - | - | 519 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 722 | - | 122 |
| Stage 1 | - | - | - | - | 344 |
| Stage 2 | - | - | - | - | 562 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 722 | - | 120 |
| Mov Cap-2 Maneuver | - | - | - | - | 244 |
| Stage 1 | - | - | - | - | 344 |
| Stage 2 | - | - | - | - | 552 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 17.2 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 328 | - | - | 722 | - |
| HCM Lane V/C Ratio | 0.099 | - | - | 0.017 | - |
| HCM Control Delay (s) | 17.2 | - | - | 10.1 | - |
| HCM Lane LOS | C | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 24 | 829 | 875 | 18 | 14 | 47 |
| Future Vol, veh/h | 24 | 829 | 875 | 18 | 14 | 47 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 50 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 26 | 901 | 951 | 20 | 15 | 51 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 971 | 0 | - | 0 | 1464 486 |
| Stage 1 | - | - | - | - | 961 - |
| Stage 2 | - | - | - | - | 503 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 706 | - | - | - | 119 527 |
| Stage 1 | - | - | - | - | 332 - |
| Stage 2 | - | - | - | - | 573 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 706 | - | - | - | 115 527 |
| Mov Cap-2 Maneuver | - | - | - | - | 234 - |
| Stage 1 | - | - | - | - | 320 - |
| Stage 2 | - | - | - | - | 573 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.3 | 0 | 15.5 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 706 | - | - | - | 409 |
| HCM Lane V/C Ratio | 0.037 | - | - | - | 0.162 |
| HCM Control Delay (s) | 10.3 | - | - | - | 15.5 |
| HCM Lane LOS | B | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.6 |

HCM Signalized Intersection Capacity Analysis
 14: Madison Ave & East Ave

Existing Conditions
 Timing Plan: PM Peak



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|------|------|------|-------|-------|------|
| Lane Configurations | ↑↑ | | ↵ | ↑↑ | ↵ | |
| Traffic Volume (vph) | 814 | 17 | 36 | 877 | 11 | 24 |
| Future Volume (vph) | 814 | 17 | 36 | 877 | 11 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.7 | | 4.7 | 4.7 | 4.0 | |
| Lane Util. Factor | 0.95 | | 1.00 | 0.95 | 1.00 | |
| Frt | 1.00 | | 1.00 | 1.00 | 0.91 | |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.98 | |
| Satd. Flow (prot) | 3529 | | 1770 | 3539 | 1664 | |
| Flt Permitted | 1.00 | | 0.32 | 1.00 | 0.98 | |
| Satd. Flow (perm) | 3529 | | 588 | 3539 | 1664 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 885 | 18 | 39 | 953 | 12 | 26 |
| RTOR Reduction (vph) | 2 | 0 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 901 | 0 | 39 | 953 | 13 | 0 |
| Turn Type | NA | | Perm | NA | Perm | |
| Protected Phases | 2 | | | 6 | | |
| Permitted Phases | | | 6 | | 4 | |
| Actuated Green, G (s) | 19.8 | | 19.8 | 19.8 | 0.8 | |
| Effective Green, g (s) | 19.8 | | 19.8 | 19.8 | 0.8 | |
| Actuated g/C Ratio | 0.68 | | 0.68 | 0.68 | 0.03 | |
| Clearance Time (s) | 4.7 | | 4.7 | 4.7 | 4.0 | |
| Vehicle Extension (s) | 4.0 | | 4.0 | 4.0 | 3.0 | |
| Lane Grp Cap (vph) | 2384 | | 397 | 2391 | 45 | |
| v/s Ratio Prot | 0.26 | | | c0.27 | | |
| v/s Ratio Perm | | | 0.07 | | c0.01 | |
| v/c Ratio | 0.38 | | 0.10 | 0.40 | 0.28 | |
| Uniform Delay, d1 | 2.1 | | 1.6 | 2.1 | 14.0 | |
| Progression Factor | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.1 | | 0.1 | 0.1 | 3.4 | |
| Delay (s) | 2.2 | | 1.8 | 2.3 | 17.4 | |
| Level of Service | A | | A | A | B | |
| Approach Delay (s) | 2.2 | | | 2.2 | 17.4 | |
| Approach LOS | A | | | A | B | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay | 2.5 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.39 | | |
| Actuated Cycle Length (s) | 29.3 | Sum of lost time (s) | 8.7 |
| Intersection Capacity Utilization | 40.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM 6th TWSC
15: Aubrun St & East Ave

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑↑ | | ↑ | ↑↑ | | | ↑↑ | | | | ↑ |
| Traffic Vol, veh/h | 0 | 798 | 10 | 4 | 911 | 0 | 4 | 0 | 4 | 3 | 0 | 3 |
| Future Vol, veh/h | 0 | 798 | 10 | 4 | 911 | 0 | 4 | 0 | 4 | 3 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 60 | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 867 | 11 | 4 | 990 | 0 | 4 | 0 | 4 | 3 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|---|------|
| Conflicting Flow All | - | 0 | 0 | 878 | 0 | 0 | 1376 | 1871 | 439 | 1432 | - | 495 |
| Stage 1 | - | - | - | - | - | - | 873 | 873 | - | 998 | - | - |
| Stage 2 | - | - | - | - | - | - | 503 | 998 | - | 434 | - | - |
| Critical Hdwy | - | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | - | - |
| Follow-up Hdwy | - | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | 765 | - | - | 104 | 71 | 566 | 95 | 0 | 520 |
| Stage 1 | 0 | - | - | - | - | - | 311 | 366 | - | 261 | 0 | - |
| Stage 2 | 0 | - | - | - | - | - | 519 | 320 | - | 570 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 765 | - | - | 103 | 71 | 566 | 94 | - | 520 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 220 | 188 | - | 198 | - | - |
| Stage 1 | - | - | - | - | - | - | 311 | 366 | - | 261 | - | - |
| Stage 2 | - | - | - | - | - | - | 513 | 318 | - | 566 | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|----|------|----|
| HCM Control Delay, s | 0 | 0 | 16.7 | 12 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 317 | - | - | 765 | - | - | 520 |
| HCM Lane V/C Ratio | 0.027 | - | - | 0.006 | - | - | 0.006 |
| HCM Control Delay (s) | 16.7 | - | - | 9.7 | - | - | 12 |
| HCM Lane LOS | C | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - | - | 0 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↗ | |
| Traffic Vol, veh/h | 737 | 33 | 47 | 900 | 64 | 81 |
| Future Vol, veh/h | 737 | 33 | 47 | 900 | 64 | 81 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 0 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 801 | 36 | 51 | 978 | 70 | 88 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 837 | 0 | 1410 |
| Stage 1 | - | - | - | - | 819 |
| Stage 2 | - | - | - | - | 591 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 793 | - | 129 |
| Stage 1 | - | - | - | - | 394 |
| Stage 2 | - | - | - | - | 516 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 793 | - | 121 |
| Mov Cap-2 Maneuver | - | - | - | - | 253 |
| Stage 1 | - | - | - | - | 394 |
| Stage 2 | - | - | - | - | 483 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.5 | 21.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 370 | - | - | 793 | - |
| HCM Lane V/C Ratio | 0.426 | - | - | 0.064 | - |
| HCM Control Delay (s) | 21.8 | - | - | 9.9 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 2.1 | - | - | 0.2 | - |

HCM Signalized Intersection Capacity Analysis
 17: East Ave & Loyola Way

Existing Conditions
 Timing Plan: PM Peak



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↖ | ↗↗ | ↖↗ | | ↖ | ↗ |
| Traffic Volume (vph) | 92 | 682 | 898 | 35 | 19 | 82 |
| Future Volume (vph) | 92 | 682 | 898 | 35 | 19 | 82 |
| Ideal Flow (vphp) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.7 | 5.3 | | 4.0 | 4.0 |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | | 1.00 | 1.00 |
| Frbp, ped/bikes | 1.00 | 1.00 | 1.00 | | 1.00 | 0.98 |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.99 | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (prot) | 1770 | 3539 | 3514 | | 1764 | 1552 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 |
| Satd. Flow (perm) | 1770 | 3539 | 3514 | | 1764 | 1552 |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.83 | 0.83 | 0.56 | 0.56 |
| Adj. Flow (vph) | 106 | 784 | 1082 | 42 | 34 | 146 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 122 |
| Lane Group Flow (vph) | 106 | 784 | 1121 | 0 | 34 | 24 |
| Confl. Peds. (#/hr) | | | | | 5 | 12 |
| Confl. Bikes (#/hr) | | | | 24 | | |
| Turn Type | Prot | NA | NA | | Perm | Perm |
| Protected Phases | 5 | 2 | 6 | | | |
| Permitted Phases | | | | | 4 | 4 |
| Actuated Green, G (s) | 7.1 | 41.6 | 29.9 | | 9.8 | 9.8 |
| Effective Green, g (s) | 7.1 | 41.6 | 29.9 | | 9.8 | 9.8 |
| Actuated g/C Ratio | 0.12 | 0.69 | 0.50 | | 0.16 | 0.16 |
| Clearance Time (s) | 4.0 | 4.7 | 5.3 | | 4.0 | 4.0 |
| Vehicle Extension (s) | 2.0 | 3.0 | 3.0 | | 2.0 | 2.0 |
| Lane Grp Cap (vph) | 209 | 2449 | 1748 | | 287 | 253 |
| v/s Ratio Prot | c0.06 | 0.22 | c0.32 | | | |
| v/s Ratio Perm | | | | | c0.02 | 0.02 |
| v/c Ratio | 0.51 | 0.32 | 0.64 | | 0.12 | 0.09 |
| Uniform Delay, d1 | 24.9 | 3.7 | 11.1 | | 21.5 | 21.4 |
| Progression Factor | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.7 | 0.1 | 0.8 | | 0.1 | 0.1 |
| Delay (s) | 25.6 | 3.7 | 12.0 | | 21.5 | 21.4 |
| Level of Service | C | A | B | | C | C |
| Approach Delay (s) | | 6.3 | 12.0 | | 21.5 | |
| Approach LOS | | A | B | | C | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 10.5 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.51 | | | |
| Actuated Cycle Length (s) | | | 60.1 | | Sum of lost time (s) | 13.3 |
| Intersection Capacity Utilization | | | 52.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

c Critical Lane Group

HCM 6th TWSC
18: Buena Vista Ave & East Ave

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.3 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↘ | |
| Traffic Vol, veh/h | 743 | 0 | 89 | 930 | 20 | 71 |
| Future Vol, veh/h | 743 | 0 | 89 | 930 | 20 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 808 | 0 | 97 | 1011 | 22 | 77 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 808 | 0 | 1508 |
| Stage 1 | - | - | - | - | 808 |
| Stage 2 | - | - | - | - | 700 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 813 | - | 111 |
| Stage 1 | - | - | - | - | 399 |
| Stage 2 | - | - | - | - | 454 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 813 | - | 98 |
| Mov Cap-2 Maneuver | - | - | - | - | 227 |
| Stage 1 | - | - | - | - | 399 |
| Stage 2 | - | - | - | - | 400 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.9 | 15.6 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 439 | - | - | 813 | - |
| HCM Lane V/C Ratio | 0.225 | - | - | 0.119 | - |
| HCM Control Delay (s) | 15.6 | - | - | 10 | - |
| HCM Lane LOS | C | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.9 | - | - | 0.4 | - |

HCM 6th TWSC
19: Calvary Ln & East Ave

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.2 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↘ | |
| Traffic Vol, veh/h | 811 | 3 | 9 | 1018 | 9 | 1 |
| Future Vol, veh/h | 811 | 3 | 9 | 1018 | 9 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 25 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 882 | 3 | 10 | 1107 | 10 | 1 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 885 | 0 | 1458 |
| Stage 1 | - | - | - | - | 884 |
| Stage 2 | - | - | - | - | 574 |
| Critical Hdwy | - | - | 4.14 | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 |
| Pot Cap-1 Maneuver | - | - | 760 | - | 120 |
| Stage 1 | - | - | - | - | 364 |
| Stage 2 | - | - | - | - | 527 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 760 | - | 118 |
| Mov Cap-2 Maneuver | - | - | - | - | 247 |
| Stage 1 | - | - | - | - | 364 |
| Stage 2 | - | - | - | - | 520 |




















| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 19.3 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 262 | - | - | 760 | - |
| HCM Lane V/C Ratio | 0.041 | - | - | 0.013 | - |
| HCM Control Delay (s) | 19.3 | - | - | 9.8 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

HCM Signalized Intersection Capacity Analysis

20: East Ave & Mines Rd

Existing Conditions
Timing Plan: PM Peak

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  |  | | |  | | |  | |  |  |  | |
| Traffic Volume (vph) | 260 | 532 | 0 | 0 | 722 | 182 | 0 | 0 | 0 | 139 | 0 | 275 | |
| Future Volume (vph) | 260 | 532 | 0 | 0 | 722 | 182 | 0 | 0 | 0 | 139 | 0 | 275 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 4.0 | 5.4 | | | 5.4 | | | | | 4.0 | | 4.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | | | | | 0.97 | | 1.00 | |
| Frbp, ped/bikes | 1.00 | 1.00 | | | 0.99 | | | | | 1.00 | | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | | 1.00 | | | | | 1.00 | | 1.00 | |
| Frt | 1.00 | 1.00 | | | 0.97 | | | | | 1.00 | | 0.85 | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | | | | | 0.95 | | 1.00 | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3413 | | | | | 3433 | | 1583 | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | | | | | 0.95 | | 1.00 | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3413 | | | | | 3433 | | 1583 | |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.87 | 0.82 | 0.82 | 0.82 | 0.92 | 0.92 | 0.92 | 0.83 | 0.83 | 0.83 | |
| Adj. Flow (vph) | 299 | 611 | 0 | 0 | 880 | 222 | 0 | 0 | 0 | 167 | 0 | 331 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 277 | |
| Lane Group Flow (vph) | 299 | 611 | 0 | 0 | 1082 | 0 | 0 | 0 | 0 | 167 | 0 | 54 | |
| Confl. Peds. (#/hr) | | | 3 | | | | 3 | | | | | 1 | |
| Confl. Bikes (#/hr) | | | 1 | | | | 24 | | | | | | |
| Turn Type | Prot | NA | | | NA | | | | | Prot | | Prot | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | | 4 | | 4 | |
| Permitted Phases | | | | | | | | | | | | | |
| Actuated Green, G (s) | 17.7 | 49.7 | | | 28.0 | | | | | 11.6 | | 11.6 | |
| Effective Green, g (s) | 17.7 | 49.7 | | | 28.0 | | | | | 11.6 | | 11.6 | |
| Actuated g/C Ratio | 0.25 | 0.70 | | | 0.40 | | | | | 0.16 | | 0.16 | |
| Clearance Time (s) | 4.0 | 5.4 | | | 5.4 | | | | | 4.0 | | 4.0 | |
| Vehicle Extension (s) | 2.0 | 1.0 | | | 1.0 | | | | | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | 443 | 2487 | | | 1351 | | | | | 563 | | 259 | |
| v/s Ratio Prot | c0.17 | 0.17 | | | c0.32 | | | | | c0.05 | | 0.03 | |
| v/s Ratio Perm | | | | | | | | | | | | | |
| v/c Ratio | 0.67 | 0.25 | | | 0.80 | | | | | 0.30 | | 0.21 | |
| Uniform Delay, d1 | 23.9 | 3.8 | | | 18.9 | | | | | 26.0 | | 25.6 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | | | | 1.00 | | 1.00 | |
| Incremental Delay, d2 | 3.2 | 0.0 | | | 3.3 | | | | | 0.3 | | 0.4 | |
| Delay (s) | 27.1 | 3.8 | | | 22.2 | | | | | 26.3 | | 26.0 | |
| Level of Service | C | A | | | C | | | | | C | | C | |
| Approach Delay (s) | | 11.4 | | | 22.2 | | | 0.0 | | | 26.1 | | |
| Approach LOS | | B | | | C | | | A | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 19.1 | | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.71 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.7 | | | | | | | | | Sum of lost time (s) | 17.4 |
| Intersection Capacity Utilization | | | 55.7% | | | | | | | | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

c Critical Lane Group

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | ↘ | ↑↑ | ↑↑ | | ↘ | ↘ |
| Traffic Vol, veh/h | 82 | 583 | 830 | 17 | 6 | 43 |
| Future Vol, veh/h | 82 | 583 | 830 | 17 | 6 | 43 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 120 | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 89 | 634 | 902 | 18 | 7 | 47 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----------|
| Conflicting Flow All | 920 | 0 | - | 0 | 1406 460 |
| Stage 1 | - | - | - | - | 911 - |
| Stage 2 | - | - | - | - | 495 - |
| Critical Hdwy | 4.14 | - | - | - | 6.84 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 - |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 3.32 |
| Pot Cap-1 Maneuver | 738 | - | - | - | 130 548 |
| Stage 1 | - | - | - | - | 352 - |
| Stage 2 | - | - | - | - | 578 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 738 | - | - | - | 114 548 |
| Mov Cap-2 Maneuver | - | - | - | - | 114 - |
| Stage 1 | - | - | - | - | 309 - |
| Stage 2 | - | - | - | - | 578 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.3 | 0 | 15.4 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 738 | - | - | - | 114 | 548 |
| HCM Lane V/C Ratio | 0.121 | - | - | - | 0.057 | 0.085 |
| HCM Control Delay (s) | 10.5 | - | - | - | 38.5 | 12.2 |
| HCM Lane LOS | B | - | - | - | E | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.2 | 0.3 |

HCM 6th Signalized Intersection Summary
 22: Charlotte Wy & East Ave

Existing Conditions
 Timing Plan: PM Peak



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 104 | 349 | 147 | 29 | 688 | 60 | 107 | 10 | 18 | 23 | 15 | 77 |
| Future Volume (veh/h) | 104 | 349 | 147 | 29 | 688 | 60 | 107 | 10 | 18 | 23 | 15 | 77 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 0.95 | 0.99 | | 0.98 | 0.99 | | 0.98 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 117 | 392 | 165 | 32 | 764 | 67 | 149 | 14 | 25 | 27 | 18 | 91 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 | 0.72 | 0.72 | 0.72 | 0.85 | 0.85 | 0.85 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 151 | 1437 | 625 | 40 | 1214 | 516 | 400 | 140 | 250 | 465 | 62 | 314 |
| Arrive On Green | 0.08 | 0.40 | 0.40 | 0.02 | 0.34 | 0.34 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1781 | 3554 | 1546 | 1781 | 3554 | 1510 | 1277 | 594 | 1060 | 1359 | 264 | 1334 |
| Grp Volume(v), veh/h | 117 | 392 | 165 | 32 | 764 | 67 | 149 | 0 | 39 | 27 | 0 | 109 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1546 | 1781 | 1777 | 1510 | 1277 | 0 | 1654 | 1359 | 0 | 1598 |
| Q Serve(g_s), s | 2.7 | 3.1 | 3.0 | 0.8 | 7.6 | 1.3 | 4.6 | 0.0 | 0.8 | 0.7 | 0.0 | 2.4 |
| Cycle Q Clear(g_c), s | 2.7 | 3.1 | 3.0 | 0.8 | 7.6 | 1.3 | 7.0 | 0.0 | 0.8 | 1.5 | 0.0 | 2.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.64 | 1.00 | | 0.83 |
| Lane Grp Cap(c), veh/h | 151 | 1437 | 625 | 40 | 1214 | 516 | 400 | 0 | 390 | 465 | 0 | 377 |
| V/C Ratio(X) | 0.77 | 0.27 | 0.26 | 0.81 | 0.63 | 0.13 | 0.37 | 0.00 | 0.10 | 0.06 | 0.00 | 0.29 |
| Avail Cap(c_a), veh/h | 631 | 3355 | 1460 | 631 | 3355 | 1426 | 701 | 0 | 781 | 786 | 0 | 754 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.0 | 8.4 | 8.4 | 20.6 | 11.7 | 9.6 | 16.1 | 0.0 | 12.7 | 13.2 | 0.0 | 13.3 |
| Incr Delay (d2), s/veh | 3.2 | 0.1 | 0.2 | 13.3 | 0.4 | 0.1 | 0.6 | 0.0 | 0.1 | 0.1 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.8 | 0.7 | 0.4 | 2.2 | 0.3 | 1.2 | 0.0 | 0.3 | 0.2 | 0.0 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 22.1 | 8.5 | 8.6 | 34.0 | 12.1 | 9.7 | 16.7 | 0.0 | 12.8 | 13.3 | 0.0 | 13.7 |
| LnGrp LOS | C | A | A | C | B | A | B | A | B | B | A | B |
| Approach Vol, veh/h | | 674 | | | 863 | | | 188 | | | | 136 |
| Approach Delay, s/veh | | 10.9 | | | 12.7 | | | 15.9 | | | | 13.6 |
| Approach LOS | | B | | | B | | | B | | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 7.6 | 19.9 | | 14.9 | 4.9 | 22.5 | | 14.9 | | | | |
| Change Period (Y+Rc), s | 4.0 | 5.4 | | 4.9 | 4.0 | 5.4 | | 4.9 | | | | |
| Max Green Setting (Gmax), s | 15.0 | 40.0 | | 20.0 | 15.0 | 40.0 | | 20.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.7 | 9.6 | | 4.4 | 2.8 | 5.1 | | 9.0 | | | | |
| Green Ext Time (p_c), s | 0.1 | 4.6 | | 0.5 | 0.0 | 2.5 | | 0.5 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 12.4 |
| HCM 6th LOS | B |

Notes

User approved pedestrian interval to be less than phase max green.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↵ | ↕ | | ↵ | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 16 | 385 | 31 | 9 | 701 | 14 | 34 | 0 | 33 | 3 | 0 | 11 |
| Future Vol, veh/h | 16 | 385 | 31 | 9 | 701 | 14 | 34 | 0 | 33 | 3 | 0 | 11 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 418 | 34 | 10 | 762 | 15 | 37 | 0 | 36 | 3 | 0 | 12 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 777 | 0 | 0 | 452 | 0 | 0 | 870 | 1266 | 226 | 1033 | 1276 | 389 |
| Stage 1 | - | - | - | - | - | - | 469 | 469 | - | 790 | 790 | - |
| Stage 2 | - | - | - | - | - | - | 401 | 797 | - | 243 | 486 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 835 | - | - | 1105 | - | - | 246 | 168 | 777 | 187 | 165 | 610 |
| Stage 1 | - | - | - | - | - | - | 544 | 559 | - | 350 | 400 | - |
| Stage 2 | - | - | - | - | - | - | 597 | 397 | - | 739 | 549 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 835 | - | - | 1105 | - | - | 236 | 163 | 777 | 174 | 160 | 610 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 236 | 163 | - | 174 | 160 | - |
| Stage 1 | - | - | - | - | - | - | 533 | 548 | - | 343 | 396 | - |
| Stage 2 | - | - | - | - | - | - | 580 | 393 | - | 691 | 538 | - |

| Approach | EB | | | WB | | | NB | | | SB | | |
|----------------------|-----|--|--|-----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 0.3 | | | 0.1 | | | 17.6 | | | 14.4 | | |
| HCM LOS | | | | | | | C | | | B | | |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 359 | 835 | - | - | 1105 | - | - | 397 |
| HCM Lane V/C Ratio | 0.203 | 0.021 | - | - | 0.009 | - | - | 0.038 |
| HCM Control Delay (s) | 17.6 | 9.4 | - | - | 8.3 | - | - | 14.4 |
| HCM Lane LOS | C | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.7 | 0.1 | - | - | 0 | - | - | 0.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.5 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 395 | 725 | 9 | 7 | 14 |
| Future Vol, veh/h | 16 | 395 | 725 | 9 | 7 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 2 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 25 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 90 | 90 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 425 | 806 | 10 | 9 | 18 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 818 | 0 | - | 0 | 1060 |
| Stage 1 | - | - | - | - | 813 |
| Stage 2 | - | - | - | - | 247 |
| Critical Hdwy | 4.14 | - | - | - | 6.84 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 |
| Follow-up Hdwy | 2.22 | - | - | - | 3.52 |
| Pot Cap-1 Maneuver | 806 | - | - | - | 219 |
| Stage 1 | - | - | - | - | 396 |
| Stage 2 | - | - | - | - | 771 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 804 | - | - | - | 214 |
| Mov Cap-2 Maneuver | - | - | - | - | 214 |
| Stage 1 | - | - | - | - | 387 |
| Stage 2 | - | - | - | - | 769 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.4 | 0 | 15.4 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 804 | - | - | - | 372 |
| HCM Lane V/C Ratio | 0.021 | - | - | - | 0.071 |
| HCM Control Delay (s) | 9.6 | - | - | - | 15.4 |
| HCM Lane LOS | A | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.2 |

HCM 6th TWSC
25: Rovello Loop & East Ave

Existing Conditions
Timing Plan: PM Peak

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | | ↑↑ | | ↑ |
| Traffic Vol, veh/h | 393 | 11 | 0 | 738 | 0 | 3 |
| Future Vol, veh/h | 393 | 11 | 0 | 738 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 427 | 12 | 0 | 802 | 0 | 3 |





























| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 0 | 0 | - | - | 220 |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | - | 0 | - | 0 | 784 |
| Stage 1 | - | 0 | - | 0 | - |
| Stage 2 | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | - | 784 |
| Mov Cap-2 Maneuver | - | - | - | - | - |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |

| Approach | EB | WB | NB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 9.6 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|-----------------------|-------|-----|-----|-----|
| Capacity (veh/h) | 784 | - | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | - |
| HCM Control Delay (s) | 9.6 | - | - | - |
| HCM Lane LOS | A | - | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - |

HCM 6th Signalized Intersection Summary
26: Vasco Rd & East Ave

Existing Conditions
Timing Plan: PM Peak

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |  | |   |   | |   |   | |   |  |   |
| Traffic Volume (veh/h) | 280 | 18 | 74 | 225 | 390 | 313 | 63 | 240 | 3 | 20 | 323 | 281 |
| Future Volume (veh/h) | 280 | 18 | 74 | 225 | 390 | 313 | 63 | 240 | 3 | 20 | 323 | 281 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.97 | 1.00 | | 0.96 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 318 | 20 | 84 | 256 | 443 | 356 | 68 | 261 | 3 | 22 | 359 | 312 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.92 | 0.92 | 0.92 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 439 | 72 | 303 | 299 | 506 | 405 | 174 | 1177 | 14 | 100 | 483 | 403 |
| Arrive On Green | 0.13 | 0.23 | 0.23 | 0.17 | 0.28 | 0.28 | 0.10 | 0.33 | 0.33 | 0.03 | 0.26 | 0.26 |
| Sat Flow, veh/h | 3456 | 307 | 1291 | 1781 | 1836 | 1467 | 1781 | 3598 | 41 | 3456 | 1870 | 1562 |
| Grp Volume(v), veh/h | 318 | 0 | 104 | 256 | 429 | 370 | 68 | 129 | 135 | 22 | 359 | 312 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 0 | 1598 | 1781 | 1777 | 1526 | 1781 | 1777 | 1863 | 1728 | 1870 | 1562 |
| Q Serve(g_s), s | 7.0 | 0.0 | 4.2 | 11.1 | 18.3 | 18.5 | 2.9 | 4.2 | 4.2 | 0.5 | 14.0 | 14.7 |
| Cycle Q Clear(g_c), s | 7.0 | 0.0 | 4.2 | 11.1 | 18.3 | 18.5 | 2.9 | 4.2 | 4.2 | 0.5 | 14.0 | 14.7 |
| Prop In Lane | 1.00 | | 0.81 | 1.00 | | 0.96 | 1.00 | | 0.02 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 439 | 0 | 375 | 299 | 490 | 421 | 174 | 581 | 609 | 100 | 483 | 403 |
| V/C Ratio(X) | 0.72 | 0.00 | 0.28 | 0.86 | 0.87 | 0.88 | 0.39 | 0.22 | 0.22 | 0.22 | 0.74 | 0.77 |
| Avail Cap(c_a), veh/h | 1519 | 0 | 502 | 671 | 558 | 479 | 559 | 656 | 688 | 868 | 705 | 588 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.4 | 0.0 | 24.9 | 32.2 | 27.5 | 27.6 | 33.7 | 19.4 | 19.4 | 37.8 | 27.1 | 27.4 |
| Incr Delay (d2), s/veh | 2.3 | 0.0 | 0.1 | 2.7 | 12.1 | 14.4 | 1.1 | 0.1 | 0.1 | 0.4 | 3.4 | 5.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.9 | 0.0 | 1.5 | 4.7 | 8.8 | 7.9 | 1.2 | 1.6 | 1.7 | 0.2 | 6.1 | 5.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 35.7 | 0.0 | 25.1 | 34.9 | 39.6 | 42.0 | 34.8 | 19.5 | 19.5 | 38.2 | 30.4 | 32.4 |
| LnGrp LOS | D | A | C | C | D | D | C | B | B | D | C | C |
| Approach Vol, veh/h | | 422 | | | 1055 | | | 332 | | | 693 | |
| Approach Delay, s/veh | | 33.1 | | | 39.3 | | | 22.6 | | | 31.6 | |
| Approach LOS | | C | | | D | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 17.5 | 24.0 | 11.9 | 26.3 | 14.2 | 27.3 | 6.4 | 31.7 | | | | |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 5.7 | 4.1 | 5.3 | 4.1 | 5.7 | | | | |
| Max Green Setting (Gmax), s | 30.0 | 25.0 | 25.0 | 30.0 | 35.0 | 25.0 | 20.0 | 29.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 13.1 | 6.2 | 4.9 | 16.7 | 9.0 | 20.5 | 2.5 | 6.2 | | | | |
| Green Ext Time (p_c), s | 0.3 | 0.3 | 0.1 | 3.7 | 1.1 | 1.5 | 0.0 | 0.8 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 33.9 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved pedestrian interval to be less than phase max green. | | | | | | | | | | | | |