

Appendix 2

Synchro Output

HCM 6th Signalized Intersection Summary
 1: US 95 SB Ramps & Sunset Rd

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|-------|-------|------|------|-----|-------|-----|------|------|------|
| Lane Configurations | 0 | 3 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | <1 | 2 |
| Traffic Volume (veh/h) | 0 | 611 | 379 | 196 | 1004 | 0 | 0 | 0 | 0 | 510 | 0 | 460 |
| Future Volume (veh/h) | 0 | 611 | 379 | 196 | 1004 | 0 | 0 | 0 | 0 | 510 | 0 | 460 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1826 | 1826 | 1826 | 1826 | 0 | | | | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 0 | 664 | 412 | 213 | 1091 | 0 | | | | 554 | 0 | 500 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 5 | 5 | 5 | 5 | 0 | | | | 5 | 5 | 5 |
| Cap, veh/h | 0 | 1940 | 1060 | 486 | 3529 | 0 | | | | 688 | 0 | 612 |
| Arrive On Green | 0.00 | 0.39 | 0.39 | 0.28 | 0.71 | 0.00 | | | | 0.20 | 0.00 | 0.20 |
| Sat Flow, veh/h | 0 | 5149 | 2723 | 1739 | 5149 | 0 | | | | 3478 | 0 | 3095 |
| Grp Volume(v), veh/h | 0 | 664 | 412 | 213 | 1091 | 0 | | | | 554 | 0 | 500 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1662 | 1362 | 1739 | 1662 | 0 | | | | 1739 | 0 | 1547 |
| Q Serve(g_s), s | 0.0 | 13.1 | 15.2 | 14.1 | 11.5 | 0.0 | | | | 21.3 | 0.0 | 21.6 |
| Cycle Q Clear(g_c), s | 0.0 | 13.1 | 15.2 | 14.1 | 11.5 | 0.0 | | | | 21.3 | 0.0 | 21.6 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 1940 | 1060 | 486 | 3529 | 0 | | | | 688 | 0 | 612 |
| V/C Ratio(X) | 0.00 | 0.34 | 0.39 | 0.44 | 0.31 | 0.00 | | | | 0.81 | 0.00 | 0.82 |
| Avail Cap(c_a), veh/h | 0 | 1940 | 1060 | 486 | 3529 | 0 | | | | 1083 | 0 | 964 |
| HCM Platoon Ratio | 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 | 0.89 | 0.89 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 30.1 | 30.8 | 41.4 | 7.6 | 0.0 | | | | 53.6 | 0.0 | 53.7 |
| Incr Delay (d2), s/veh | 0.0 | 0.5 | 1.1 | 0.6 | 0.0 | 0.0 | | | | 2.5 | 0.0 | 3.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 5.2 | 5.1 | 6.0 | 3.6 | 0.0 | | | | 9.3 | 0.0 | 8.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 30.6 | 31.8 | 42.0 | 7.7 | 0.0 | | | | 56.1 | 0.0 | 56.8 |
| LnGrp LOS | A | C | C | D | A | A | | | | E | A | E |
| Approach Vol, veh/h | | 1076 | | | 1304 | | | | | | 1054 | |
| Approach Delay, s/veh | | 31.1 | | | 13.3 | | | | | | 56.4 | |
| Approach LOS | | C | | | B | | | | | | E | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 34.1 | 45.9 | 60.0 | | | | 105.9 | | | | |
| Change Period (Y+Rc), s | | 6.4 | * 6.8 | * 5.5 | | | | 6.8 | | | | |
| Max Green Setting (Gmax), s | | 43.6 | * 24 | * 55 | | | | 83.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 23.6 | 16.1 | 17.2 | | | | 13.5 | | | | |
| Green Ext Time (p_c), s | | 4.0 | 0.3 | 6.8 | | | | 9.1 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 32.1 |
| HCM 6th LOS | C |

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 1: US 95 SB Ramps & Sunset Rd

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|-------|------|------|-----|------|-----|------|------|------|
| Lane Configurations | | ↑↑↑ | ↑↑ | ↑ | ↑↑↑ | | | | | ↑ | ↑ | ↑↑ |
| Traffic Volume (veh/h) | 0 | 1252 | 838 | 195 | 1175 | 0 | 0 | 0 | 0 | 340 | 0 | 560 |
| Future Volume (veh/h) | 0 | 1252 | 838 | 195 | 1175 | 0 | 0 | 0 | 0 | 340 | 0 | 560 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1781 | 1781 | 1781 | 1781 | 0 | | | | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 0 | 1361 | 911 | 212 | 1277 | 0 | | | | 370 | 0 | 609 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 8 | 8 | 8 | 8 | 0 | | | | 8 | 8 | 8 |
| Cap, veh/h | 0 | 2026 | 1107 | 252 | 3113 | 0 | | | | 662 | 0 | 589 |
| Arrive On Green | 0.00 | 0.42 | 0.42 | 0.15 | 0.64 | 0.00 | | | | 0.19 | 0.00 | 0.19 |
| Sat Flow, veh/h | 0 | 5024 | 2657 | 1697 | 5024 | 0 | | | | 3393 | 0 | 3019 |
| Grp Volume(v), veh/h | 0 | 1361 | 911 | 212 | 1277 | 0 | | | | 370 | 0 | 609 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1621 | 1329 | 1697 | 1621 | 0 | | | | 1697 | 0 | 1510 |
| Q Serve(g_s), s | 0.0 | 18.1 | 24.4 | 9.7 | 10.3 | 0.0 | | | | 7.9 | 0.0 | 15.6 |
| Cycle Q Clear(g_c), s | 0.0 | 18.1 | 24.4 | 9.7 | 10.3 | 0.0 | | | | 7.9 | 0.0 | 15.6 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 2026 | 1107 | 252 | 3113 | 0 | | | | 662 | 0 | 589 |
| V/C Ratio(X) | 0.00 | 0.67 | 0.82 | 0.84 | 0.41 | 0.00 | | | | 0.56 | 0.00 | 1.03 |
| Avail Cap(c_a), veh/h | 0 | 2026 | 1107 | 361 | 3113 | 0 | | | | 662 | 0 | 589 |
| HCM Platoon Ratio | 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 | 0.77 | 0.77 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 18.9 | 20.7 | 33.1 | 7.0 | 0.0 | | | | 29.1 | 0.0 | 32.2 |
| Incr Delay (d2), s/veh | 0.0 | 0.9 | 5.1 | 9.2 | 0.3 | 0.0 | | | | 3.4 | 0.0 | 46.2 |
| Initial Q Delay(d3),s/veh | 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 | 6.1 | 7.3 | 4.4 | 2.6 | 0.0 | | | | 3.3 | 0.0 | 9.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 19.8 | 25.9 | 42.3 | 7.3 | 0.0 | | | | 32.5 | 0.0 | 78.4 |
| LnGrp LOS | A | B | C | D | A | A | | | | C | A | F |
| Approach Vol, veh/h | | 2272 | | | 1489 | | | | | | 979 | |
| Approach Delay, s/veh | | 22.2 | | | 12.3 | | | | | | 61.1 | |
| Approach LOS | | C | | | B | | | | | | E | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 22.0 | 17.9 | 40.1 | | | | 58.0 | | | | |
| Change Period (Y+Rc), s | | 6.4 | 6.0 | * 6.8 | | | | 6.8 | | | | |
| Max Green Setting (Gmax), s | | 15.6 | 17.0 | * 30 | | | | 51.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 17.6 | 11.7 | 26.4 | | | | 12.3 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.3 | 2.7 | | | | 10.9 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 27.1 |
| HCM 6th LOS | C |

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary 2: US 95 NB Ramps & Sunset Rd

Henderson Interchange
Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|------|------|------|-------|------|------|------|------|------|-----|-----|-----|
| Lane Configurations | 2 | 3 | 0 | 0 | 3 | 2 | 2 | <1 | 1 | 0 | 0 | 0 |
| Traffic Volume (veh/h) | 240 | 810 | 0 | 0 | 1003 | 677 | 548 | 0 | 452 | 0 | 0 | 0 |
| Future Volume (veh/h) | 240 | 810 | 0 | 0 | 1003 | 677 | 548 | 0 | 452 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 0 | 0 | 1826 | 1826 | 1826 | 1826 | 1826 | | | |
| Adj Flow Rate, veh/h | 261 | 880 | 0 | 0 | 1090 | 0 | 596 | 0 | 0 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 5 | 5 | | | |
| Cap, veh/h | 319 | 3921 | 0 | 0 | 3271 | | 741 | 0 | | | | |
| Arrive On Green | 0.19 | 1.00 | 0.00 | 0.00 | 0.66 | 0.00 | 0.14 | 0.00 | 0.00 | | | |
| Sat Flow, veh/h | 3374 | 5149 | 0 | 0 | 5149 | 2723 | 5217 | 0 | 1547 | | | |
| Grp Volume(v), veh/h | 261 | 880 | 0 | 0 | 1090 | 0 | 596 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1687 | 1662 | 0 | 0 | 1662 | 1362 | 1739 | 0 | 1547 | | | |
| Q Serve(g_s), s | 10.4 | 0.0 | 0.0 | 0.0 | 13.5 | 0.0 | 15.5 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 10.4 | 0.0 | 0.0 | 0.0 | 13.5 | 0.0 | 15.5 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 319 | 3921 | 0 | 0 | 3271 | | 741 | 0 | | | | |
| V/C Ratio(X) | 0.82 | 0.22 | 0.00 | 0.00 | 0.33 | | 0.80 | 0.00 | | | | |
| Avail Cap(c_a), veh/h | 964 | 3921 | 0 | 0 | 3271 | | 1677 | 0 | | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.92 | 0.92 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 55.6 | 0.0 | 0.0 | 0.0 | 10.6 | 0.0 | 58.2 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 4.8 | 0.1 | 0.0 | 0.0 | 0.3 | 0.0 | 2.1 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 4.2 | 0.0 | 0.0 | 0.0 | 4.7 | 0.0 | 7.0 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 60.3 | 0.1 | 0.0 | 0.0 | 10.9 | 0.0 | 60.3 | 0.0 | 0.0 | | | |
| LnGrp LOS | E | A | A | A | B | | E | A | | | | |
| Approach Vol, veh/h | | 1141 | | | 1090 | A | | 596 | A | | | |
| Approach Delay, s/veh | | 13.9 | | | 10.9 | | | 60.3 | | | | |
| Approach LOS | | B | | | B | | | E | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 115.1 | | 24.9 | 18.2 | 96.9 | | | | |
| Change Period (Y+Rc), s | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | | |
| Max Green Setting (Gmax), s | | | | 85.0 | | 45.0 | 40.0 | 40.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 2.0 | | 17.5 | 12.4 | 15.5 | | | | |
| Green Ext Time (p_c), s | | | | 6.8 | | 2.4 | 0.9 | 7.7 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 22.5 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary

2: US 95 NB Ramps & Sunset Rd

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|
| Lane Configurations | ↔↔ | ↑↑↑ | | | ↑↑↑ | ↔↔ | ↔↔ | ↑ | ↔ | | | |
| Traffic Volume (veh/h) | 476 | 1004 | 0 | 0 | 751 | 519 | 789 | 2 | 389 | 0 | 0 | 0 |
| Future Volume (veh/h) | 476 | 1004 | 0 | 0 | 751 | 519 | 789 | 2 | 389 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 0 | 0 | 1781 | 1781 | 1781 | 1781 | 1781 | | | |
| Adj Flow Rate, veh/h | 517 | 1091 | 0 | 0 | 816 | 0 | 859 | 0 | 0 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 8 | 8 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | | | |
| Cap, veh/h | 622 | 3245 | 0 | 0 | 2022 | | 1057 | 0 | | | | |
| Arrive On Green | 0.19 | 0.67 | 0.00 | 0.00 | 0.42 | 0.00 | 0.21 | 0.00 | 0.00 | | | |
| Sat Flow, veh/h | 3291 | 5024 | 0 | 0 | 5024 | 2657 | 5090 | 0 | 1510 | | | |
| Grp Volume(v), veh/h | 517 | 1091 | 0 | 0 | 816 | 0 | 859 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1621 | 0 | 0 | 1621 | 1329 | 1697 | 0 | 1510 | | | |
| Q Serve(g_s), s | 12.1 | 7.7 | 0.0 | 0.0 | 9.4 | 0.0 | 12.9 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 12.1 | 7.7 | 0.0 | 0.0 | 9.4 | 0.0 | 12.9 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 622 | 3245 | 0 | 0 | 2022 | | 1057 | 0 | | | | |
| V/C Ratio(X) | 0.83 | 0.34 | 0.00 | 0.00 | 0.40 | | 0.81 | 0.00 | | | | |
| Avail Cap(c_a), veh/h | 823 | 3245 | 0 | 0 | 2022 | | 1272 | 0 | | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.66 | 0.66 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 31.2 | 5.7 | 0.0 | 0.0 | 16.4 | 0.0 | 30.2 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 3.7 | 0.2 | 0.0 | 0.0 | 0.6 | 0.0 | 3.5 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 4.8 | 1.9 | 0.0 | 0.0 | 3.2 | 0.0 | 5.4 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 35.0 | 5.9 | 0.0 | 0.0 | 17.0 | 0.0 | 33.7 | 0.0 | 0.0 | | | |
| LnGrp LOS | C | A | A | A | B | | C | A | | | | |
| Approach Vol, veh/h | | 1608 | | | 816 | A | | 859 | A | | | |
| Approach Delay, s/veh | | 15.2 | | | 17.0 | | | 33.7 | | | | |
| Approach LOS | | B | | | B | | | C | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 58.4 | | 21.6 | 20.1 | 38.3 | | | | |
| Change Period (Y+Rc), s | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | | |
| Max Green Setting (Gmax), s | | | | 50.0 | | 20.0 | 20.0 | 25.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 9.7 | | 14.9 | 14.1 | 11.4 | | | | |
| Green Ext Time (p_c), s | | | | 8.8 | | 1.8 | 1.0 | 4.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 20.5 |
| HCM 6th LOS | C |

Notes













User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
3: Auto Show Drive & Gibson Rd

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--|------|-------|------|------|------|-------|
| Lane Configurations | 2 | 1 | 2 | 1 | 1 | 2 |
| Traffic Volume (veh/h) | 705 | 315 | 539 | 531 | 298 | 782 |
| Future Volume (veh/h) | 705 | 315 | 539 | 531 | 298 | 782 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 766 | 342 | 586 | 577 | 324 | 850 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 793 | 364 | 1704 | 760 | 448 | 2279 |
| Arrive On Green | 0.23 | 0.23 | 0.49 | 0.49 | 0.11 | 0.66 |
| Sat Flow, veh/h | 3374 | 1547 | 3561 | 1547 | 1739 | 3561 |
| Grp Volume(v), veh/h | 766 | 342 | 586 | 577 | 324 | 850 |
| Grp Sat Flow(s),veh/h/ln | 1687 | 1547 | 1735 | 1547 | 1739 | 1735 |
| Q Serve(g_s), s | 22.5 | 21.7 | 10.3 | 30.3 | 8.7 | 11.1 |
| Cycle Q Clear(g_c), s | 22.5 | 21.7 | 10.3 | 30.3 | 8.7 | 11.1 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 793 | 364 | 1704 | 760 | 448 | 2279 |
| V/C Ratio(X) | 0.97 | 0.94 | 0.34 | 0.76 | 0.72 | 0.37 |
| Avail Cap(c_a), veh/h | 793 | 364 | 1704 | 760 | 524 | 2279 |
| HCM Platoon Ratio | 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 |
| Uniform Delay (d), s/veh | 37.9 | 37.6 | 15.6 | 20.7 | 11.2 | 7.8 |
| Incr Delay (d2), s/veh | 23.9 | 32.2 | 0.6 | 7.0 | 4.1 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 11.6 | 20.0 | 3.9 | 11.4 | 3.3 | 3.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 61.8 | 69.8 | 16.1 | 27.7 | 15.3 | 8.3 |
| LnGrp LOS | E | E | B | C | B | A |
| Approach Vol, veh/h | 1108 | | 1163 | | | 1174 |
| Approach Delay, s/veh | 64.2 | | 21.9 | | | 10.2 |
| Approach LOS | E | | C | | | B |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
| Phs Duration (G+Y+Rc), s | | 71.0 | | 29.0 | 16.6 | 54.4 |
| Change Period (Y+Rc), s | | * 5.3 | | 5.5 | 5.5 | * 5.3 |
| Max Green Setting (Gmax), s | | * 66 | | 23.5 | 15.5 | * 45 |
| Max Q Clear Time (g_c+I1), s | | 13.1 | | 24.5 | 10.7 | 32.3 |
| Green Ext Time (p_c), s | | 6.8 | | 0.0 | 0.4 | 4.9 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 31.5 | | | |
| HCM 6th LOS | | | C | | | |
| Notes | | | | | | |
| User approved pedestrian interval to be less than phase max green. | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | |

HCM 6th Signalized Intersection Summary
3: Auto Show Drive & Gibson Rd

| |  |  |  |  |  |  |
|--|---|---|---|---|---|---|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 660 | 380 | 907 | 633 | 290 | 760 |
| Future Volume (veh/h) | 660 | 380 | 907 | 633 | 290 | 760 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 717 | 413 | 986 | 688 | 315 | 826 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 872 | 400 | 1504 | 671 | 350 | 2122 |
| Arrive On Green | 0.26 | 0.26 | 0.44 | 0.44 | 0.13 | 0.63 |
| Sat Flow, veh/h | 3291 | 1510 | 3474 | 1510 | 1697 | 3474 |
| Grp Volume(v), veh/h | 717 | 413 | 986 | 688 | 315 | 826 |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1510 | 1692 | 1510 | 1697 | 1692 |
| Q Serve(g_s), s | 20.5 | 26.5 | 22.8 | 44.4 | 10.3 | 12.0 |
| Cycle Q Clear(g_c), s | 20.5 | 26.5 | 22.8 | 44.4 | 10.3 | 12.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 872 | 400 | 1504 | 671 | 350 | 2122 |
| V/C Ratio(X) | 0.82 | 1.03 | 0.66 | 1.03 | 0.90 | 0.39 |
| Avail Cap(c_a), veh/h | 872 | 400 | 1504 | 671 | 447 | 2122 |
| HCM Platoon Ratio | 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 |
| Uniform Delay (d), s/veh | 34.5 | 36.8 | 21.8 | 27.8 | 21.1 | 9.2 |
| Incr Delay (d2), s/veh | 6.4 | 53.6 | 2.2 | 41.5 | 18.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.7 | 25.2 | 8.9 | 22.3 | 5.3 | 4.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 40.9 | 90.3 | 24.0 | 69.3 | 39.0 | 9.7 |
| LnGrp LOS | D | F | C | F | D | A |
| Approach Vol, veh/h | 1130 | | 1674 | | | 1141 |
| Approach Delay, s/veh | 59.0 | | 42.6 | | | 17.8 |
| Approach LOS | E | | D | | | B |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
| Phs Duration (G+Y+Rc), s | | 68.0 | | 32.0 | 18.3 | 49.7 |
| Change Period (Y+Rc), s | | * 5.3 | | 5.5 | 5.5 | * 5.3 |
| Max Green Setting (Gmax), s | | * 63 | | 26.5 | 18.5 | * 39 |
| Max Q Clear Time (g_c+I1), s | | 14.0 | | 28.5 | 12.3 | 46.4 |
| Green Ext Time (p_c), s | | 6.5 | | 0.0 | 0.5 | 0.0 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 40.1 | | | |
| HCM 6th LOS | | | D | | | |
| Notes | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | |

HCM 6th Signalized Intersection Summary
4: Auto Show Drive & I-515 SB Ramps

Henderson Interchange
Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|------|------|------|-----|-------|-----|------|------|------|
| Lane Configurations | 0 | 3> | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | <1 | 1 |
| Traffic Volume (veh/h) | 0 | 693 | 127 | 121 | 439 | 0 | 0 | 0 | 0 | 220 | 0 | 610 |
| Future Volume (veh/h) | 0 | 693 | 127 | 121 | 439 | 0 | 0 | 0 | 0 | 220 | 0 | 610 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1826 | 1826 | 1826 | 1826 | 0 | | | | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 0 | 753 | 0 | 132 | 477 | 0 | | | | 239 | 0 | 663 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 5 | 5 | 5 | 5 | 0 | | | | 5 | 5 | 5 |
| Cap, veh/h | 0 | 1336 | | 173 | 1513 | 0 | | | | 748 | 0 | 665 |
| Arrive On Green | 0.00 | 0.27 | 0.00 | 0.10 | 0.44 | 0.00 | | | | 0.43 | 0.00 | 0.43 |
| Sat Flow, veh/h | 0 | 5313 | 0 | 1739 | 3561 | 0 | | | | 1739 | 0 | 1547 |
| Grp Volume(v), veh/h | 0 | 753 | 0 | 132 | 477 | 0 | | | | 239 | 0 | 663 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1662 | 0 | 1739 | 1735 | 0 | | | | 1739 | 0 | 1547 |
| Q Serve(g_s), s | 0.0 | 10.4 | 0.0 | 5.9 | 7.2 | 0.0 | | | | 7.3 | 0.0 | 34.2 |
| Cycle Q Clear(g_c), s | 0.0 | 10.4 | 0.0 | 5.9 | 7.2 | 0.0 | | | | 7.3 | 0.0 | 34.2 |
| Prop In Lane | 0.00 | | 0.00 | 1.00 | | 0.00 | | | | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 1336 | | 173 | 1513 | 0 | | | | 748 | 0 | 665 |
| V/C Ratio(X) | 0.00 | 0.56 | | 0.76 | 0.32 | 0.00 | | | | 0.32 | 0.00 | 1.00 |
| Avail Cap(c_a), veh/h | 0 | 1336 | | 207 | 1522 | 0 | | | | 748 | 0 | 665 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.80 | 0.00 | 0.95 | 0.95 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 25.2 | 0.0 | 35.1 | 14.7 | 0.0 | | | | 15.1 | 0.0 | 22.7 |
| Incr Delay (d2), s/veh | 0.0 | 1.4 | 0.0 | 12.4 | 0.1 | 0.0 | | | | 0.2 | 0.0 | 33.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 4.1 | 0.0 | 3.0 | 2.6 | 0.0 | | | | 2.6 | 0.0 | 17.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 26.6 | 0.0 | 47.5 | 14.9 | 0.0 | | | | 15.3 | 0.0 | 56.7 |
| LnGrp LOS | A | C | | D | B | A | | | | B | A | E |
| Approach Vol, veh/h | | 753 | A | | 609 | | | | | | 902 | |
| Approach Delay, s/veh | | 26.6 | | | 21.9 | | | | | | 45.7 | |
| Approach LOS | | C | | | C | | | | | | D | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 40.0 | 13.5 | 26.5 | | | | 40.0 | | | | |
| Change Period (Y+Rc), s | | * 5.6 | 5.5 | 5.1 | | | | * 5.1 | | | | |
| Max Green Setting (Gmax), s | | * 34 | 9.5 | 19.9 | | | | * 35 | | | | |
| Max Q Clear Time (g_c+I1), s | | 36.2 | 7.9 | 12.4 | | | | 9.2 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 2.9 | | | | 3.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 33.0 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

4: Auto Show Drive & I-515 SB Ramps

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|------|------|------|-----|-------|-----|------|------|------|
| Lane Configurations | | ↑↑↑ | | ↖ | ↑↑ | | | | | | ↖ | ↖ |
| Traffic Volume (veh/h) | 0 | 769 | 241 | 323 | 557 | 0 | 0 | 0 | 0 | 82 | 12 | 497 |
| Future Volume (veh/h) | 0 | 769 | 241 | 323 | 557 | 0 | 0 | 0 | 0 | 82 | 12 | 497 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1781 | 1781 | 1781 | 1781 | 0 | | | | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 0 | 836 | 0 | 351 | 605 | 0 | | | | 89 | 13 | 540 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 8 | 8 | 8 | 8 | 0 | | | | 8 | 8 | 8 |
| Cap, veh/h | 0 | 1008 | | 378 | 1671 | 0 | | | | 547 | 80 | 555 |
| Arrive On Green | 0.00 | 0.21 | 0.00 | 0.22 | 0.49 | 0.00 | | | | 0.37 | 0.37 | 0.37 |
| Sat Flow, veh/h | 0 | 5184 | 0 | 1697 | 3474 | 0 | | | | 1489 | 218 | 1510 |
| Grp Volume(v), veh/h | 0 | 836 | 0 | 351 | 605 | 0 | | | | 102 | 0 | 540 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1621 | 0 | 1697 | 1692 | 0 | | | | 1707 | 0 | 1510 |
| Q Serve(g_s), s | 0.0 | 13.2 | 0.0 | 16.2 | 8.8 | 0.0 | | | | 3.2 | 0.0 | 28.2 |
| Cycle Q Clear(g_c), s | 0.0 | 13.2 | 0.0 | 16.2 | 8.8 | 0.0 | | | | 3.2 | 0.0 | 28.2 |
| Prop In Lane | 0.00 | | 0.00 | 1.00 | | 0.00 | | | | 0.87 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 1008 | | 378 | 1671 | 0 | | | | 627 | 0 | 555 |
| V/C Ratio(X) | 0.00 | 0.83 | | 0.93 | 0.36 | 0.00 | | | | 0.16 | 0.00 | 0.97 |
| Avail Cap(c_a), veh/h | 0 | 1088 | | 378 | 1697 | 0 | | | | 627 | 0 | 555 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.63 | 0.00 | 0.60 | 0.60 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 30.3 | 0.0 | 30.5 | 12.5 | 0.0 | | | | 17.0 | 0.0 | 24.9 |
| Incr Delay (d2), s/veh | 0.0 | 5.1 | 0.0 | 20.4 | 0.1 | 0.0 | | | | 0.1 | 0.0 | 31.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 5.4 | 0.0 | 8.4 | 3.0 | 0.0 | | | | 1.2 | 0.0 | 14.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 35.5 | 0.0 | 50.8 | 12.6 | 0.0 | | | | 17.1 | 0.0 | 56.3 |
| LnGrp LOS | A | D | | D | B | A | | | | B | A | E |
| Approach Vol, veh/h | | 836 | A | | 956 | | | | | | 642 | |
| Approach Delay, s/veh | | 35.5 | | | 26.6 | | | | | | 50.1 | |
| Approach LOS | | D | | | C | | | | | | D | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 35.0 | 23.3 | 21.7 | | | | 45.0 | | | | |
| Change Period (Y+Rc), s | | * 5.6 | 5.5 | 5.1 | | | | * 5.5 | | | | |
| Max Green Setting (Gmax), s | | * 29 | 16.5 | 17.9 | | | | * 40 | | | | |
| Max Q Clear Time (g_c+I1), s | | 30.2 | 18.2 | 15.2 | | | | 10.8 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 1.4 | | | | 4.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 35.8 |
| HCM 6th LOS | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
5: I-515 NB Ramps & Auto Show Drive

Henderson Interchange
Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|-------|------|------|-----|-----|-----|
| Lane Configurations | 1 | 2 | 0 | 0 | 3> | 0 | 0 | <1 | 1 | 0 | 0 | 0 |
| Traffic Volume (veh/h) | 333 | 437 | 0 | 0 | 332 | 98 | 278 | 0 | 113 | 0 | 0 | 0 |
| Future Volume (veh/h) | 333 | 437 | 0 | 0 | 332 | 98 | 278 | 0 | 113 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 0 | 0 | 1826 | 1826 | 1826 | 1826 | 1826 | | | |
| Adj Flow Rate, veh/h | 362 | 475 | 0 | 0 | 361 | 107 | 302 | 0 | 123 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 5 | 5 | | | |
| Cap, veh/h | 798 | 2269 | 0 | 0 | 526 | 149 | 369 | 0 | 328 | | | |
| Arrive On Green | 0.92 | 1.00 | 0.00 | 0.00 | 0.14 | 0.14 | 0.21 | 0.00 | 0.21 | | | |
| Sat Flow, veh/h | 1739 | 3561 | 0 | 0 | 4022 | 1094 | 1739 | 0 | 1547 | | | |
| Grp Volume(v), veh/h | 362 | 475 | 0 | 0 | 309 | 159 | 302 | 0 | 123 | | | |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1735 | 0 | 0 | 1662 | 1629 | 1739 | 0 | 1547 | | | |
| Q Serve(g_s), s | 2.3 | 0.0 | 0.0 | 0.0 | 7.1 | 7.5 | 13.2 | 0.0 | 5.4 | | | |
| Cycle Q Clear(g_c), s | 2.3 | 0.0 | 0.0 | 0.0 | 7.1 | 7.5 | 13.2 | 0.0 | 5.4 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.67 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 798 | 2269 | 0 | 0 | 453 | 222 | 369 | 0 | 328 | | | |
| V/C Ratio(X) | 0.45 | 0.21 | 0.00 | 0.00 | 0.68 | 0.72 | 0.82 | 0.00 | 0.37 | | | |
| Avail Cap(c_a), veh/h | 798 | 2269 | 0 | 0 | 636 | 312 | 639 | 0 | 569 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.79 | 0.79 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 1.9 | 0.0 | 0.0 | 0.0 | 32.9 | 33.1 | 30.0 | 0.0 | 27.0 | | | |
| Incr Delay (d2), s/veh | 0.3 | 0.2 | 0.0 | 0.0 | 1.8 | 4.6 | 4.5 | 0.0 | 0.7 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 0.6 | 0.1 | 0.0 | 0.0 | 2.8 | 3.1 | 5.6 | 0.0 | 4.9 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 2.2 | 0.2 | 0.0 | 0.0 | 34.7 | 37.7 | 34.5 | 0.0 | 27.7 | | | |
| LnGrp LOS | A | A | A | A | C | D | C | A | C | | | |
| Approach Vol, veh/h | | 837 | | | 468 | | | 425 | | | | |
| Approach Delay, s/veh | | 1.0 | | | 35.7 | | | 32.6 | | | | |
| Approach LOS | | A | | | D | | | C | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 57.4 | | 22.6 | 41.8 | 15.6 | | | | |
| Change Period (Y+Rc), s | | | | 5.1 | | 5.6 | * 5.1 | 4.7 | | | | |
| Max Green Setting (Gmax), s | | | | 39.9 | | 29.4 | * 20 | 15.3 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 2.0 | | 15.2 | 4.3 | 9.5 | | | | |
| Green Ext Time (p_c), s | | | | 3.4 | | 1.7 | 1.0 | 1.4 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 18.2 |
| HCM 6th LOS | B |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

5: I-515 NB Ramps & Auto Show Drive

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|-------|------|------|-----|-----|-----|
| Lane Configurations | ↖ | ↑↑ | | | ↑↑↑ | | | ↑ | ↗ | | | |
| Traffic Volume (veh/h) | 494 | 396 | 0 | 0 | 510 | 210 | 468 | 0 | 102 | 0 | 0 | 0 |
| Future Volume (veh/h) | 494 | 396 | 0 | 0 | 510 | 210 | 468 | 0 | 102 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 0 | 0 | 1781 | 1781 | 1781 | 1781 | 1781 | | | |
| Adj Flow Rate, veh/h | 537 | 430 | 0 | 0 | 554 | 228 | 509 | 0 | 111 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 8 | 8 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | | | |
| Cap, veh/h | 489 | 1816 | 0 | 0 | 647 | 259 | 560 | 0 | 498 | | | |
| Arrive On Green | 0.48 | 0.90 | 0.00 | 0.00 | 0.19 | 0.19 | 0.33 | 0.00 | 0.33 | | | |
| Sat Flow, veh/h | 1697 | 3474 | 0 | 0 | 3573 | 1365 | 1697 | 0 | 1510 | | | |
| Grp Volume(v), veh/h | 537 | 430 | 0 | 0 | 525 | 257 | 509 | 0 | 111 | | | |
| Grp Sat Flow(s),veh/h/ln | 1697 | 1692 | 0 | 0 | 1621 | 1536 | 1697 | 0 | 1510 | | | |
| Q Serve(g_s), s | 23.1 | 1.3 | 0.0 | 0.0 | 12.5 | 13.0 | 23.0 | 0.0 | 4.3 | | | |
| Cycle Q Clear(g_c), s | 23.1 | 1.3 | 0.0 | 0.0 | 12.5 | 13.0 | 23.0 | 0.0 | 4.3 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.89 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 489 | 1816 | 0 | 0 | 614 | 291 | 560 | 0 | 498 | | | |
| V/C Ratio(X) | 1.10 | 0.24 | 0.00 | 0.00 | 0.86 | 0.88 | 0.91 | 0.00 | 0.22 | | | |
| Avail Cap(c_a), veh/h | 489 | 1816 | 0 | 0 | 620 | 294 | 624 | 0 | 555 | | | |
| HCM Platoon Ratio | 1.67 | 1.67 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.54 | 0.54 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 20.7 | 2.0 | 0.0 | 0.0 | 31.4 | 31.5 | 25.7 | 0.0 | 19.4 | | | |
| Incr Delay (d2), s/veh | 60.5 | 0.2 | 0.0 | 0.0 | 11.2 | 25.1 | 16.4 | 0.0 | 0.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 14.2 | 0.4 | 0.0 | 0.0 | 5.6 | 6.6 | 10.8 | 0.0 | 4.1 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 81.2 | 2.2 | 0.0 | 0.0 | 42.6 | 56.6 | 42.1 | 0.0 | 19.6 | | | |
| LnGrp LOS | F | A | A | A | D | E | D | A | B | | | |
| Approach Vol, veh/h | | 967 | | | 782 | | | 620 | | | | |
| Approach Delay, s/veh | | 46.1 | | | 47.2 | | | 38.1 | | | | |
| Approach LOS | | D | | | D | | | D | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 48.0 | | 32.0 | 28.2 | 19.9 | | | | |
| Change Period (Y+Rc), s | | | | 5.1 | | 5.6 | * 5.1 | 4.7 | | | | |
| Max Green Setting (Gmax), s | | | | 39.9 | | 29.4 | * 20 | 15.3 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 3.3 | | 25.0 | 25.1 | 15.0 | | | | |
| Green Ext Time (p_c), s | | | | 3.0 | | 1.4 | 0.0 | 0.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 44.3 |
| HCM 6th LOS | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 25.9 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | 1 | 1 | 1 | 1 | 1> | 0 | 1 | 2> | 0 | 1 | 2> | 0 |
| Traffic Vol, veh/h | 384 | 22 | 84 | 0 | 53 | 8 | 38 | 130 | 2 | 3 | 85 | 312 |
| Future Vol, veh/h | 384 | 22 | 84 | 0 | 53 | 8 | 38 | 130 | 2 | 3 | 85 | 312 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 417 | 24 | 91 | 0 | 58 | 9 | 41 | 141 | 2 | 3 | 92 | 339 |
| Number of Lanes | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|----------------------------|------|------|------|------|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 3 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 3 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 2 | 3 |
| HCM Control Delay | 35.5 | 12.2 | 12.5 | 21.9 |
| HCM LOS | E | B | B | C |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | SBLn1 | SBLn2 | SBLn3 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 96% | 0% | 100% | 0% | 100% | 87% | 0% | 100% | 8% |
| Vol Right, % | 0% | 0% | 4% | 0% | 0% | 100% | 0% | 13% | 0% | 0% | 92% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 38 | 87 | 45 | 384 | 22 | 84 | 0 | 61 | 3 | 57 | 340 |
| LT Vol | 38 | 0 | 0 | 384 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Through Vol | 0 | 87 | 43 | 0 | 22 | 0 | 0 | 53 | 0 | 57 | 28 |
| RT Vol | 0 | 0 | 2 | 0 | 0 | 84 | 0 | 8 | 0 | 0 | 312 |
| Lane Flow Rate | 41 | 94 | 49 | 417 | 24 | 91 | 0 | 66 | 3 | 62 | 370 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.098 | 0.211 | 0.11 | 0.869 | 0.046 | 0.159 | 0 | 0.148 | 0.007 | 0.127 | 0.697 |
| Departure Headway (Hd) | 8.571 | 8.058 | 8.026 | 7.491 | 6.989 | 6.287 | 8.11 | 8.018 | 7.952 | 7.442 | 6.787 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 418 | 446 | 446 | 484 | 512 | 571 | 0 | 447 | 450 | 482 | 533 |
| Service Time | 6.327 | 5.813 | 5.781 | 5.233 | 4.731 | 4.028 | 5.865 | 5.773 | 5.696 | 5.186 | 4.53 |
| HCM Lane V/C Ratio | 0.098 | 0.211 | 0.11 | 0.862 | 0.047 | 0.159 | 0 | 0.148 | 0.007 | 0.129 | 0.694 |
| HCM Control Delay | 12.3 | 13 | 11.8 | 42.5 | 10.1 | 10.2 | 10.9 | 12.2 | 10.8 | 11.3 | 23.8 |
| HCM Lane LOS | B | B | B | E | B | B | N | B | B | B | C |
| HCM 95th-tile Q | 0.3 | 0.8 | 0.4 | 9.2 | 0.1 | 0.6 | 0 | 0.5 | 0 | 0.4 | 5.4 |

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 71.3 |
| Intersection LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↘ | ↑ | ↗ | ↘ | ↗ | | ↘ | ↕ | | ↘ | ↕ | |
| Traffic Vol, veh/h | 294 | 30 | 156 | 0 | 70 | 0 | 95 | 92 | 4 | 6 | 218 | 516 |
| Future Vol, veh/h | 294 | 30 | 156 | 0 | 70 | 0 | 95 | 92 | 4 | 6 | 218 | 516 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Mvmt Flow | 320 | 33 | 170 | 0 | 76 | 0 | 103 | 100 | 4 | 7 | 237 | 561 |
| Number of Lanes | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|----------------------------|------|------|------|-------|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 3 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 3 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 2 | 3 |
| HCM Control Delay | 25.6 | 14.3 | 14.5 | 120.9 |
| HCM LOS | D | B | B | F |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | SBLn1 | SBLn2 | SBLn3 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 88% | 0% | 100% | 0% | 100% | 100% | 0% | 100% | 12% |
| Vol Right, % | 0% | 0% | 12% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 88% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 95 | 61 | 35 | 294 | 30 | 156 | 0 | 70 | 6 | 145 | 589 |
| LT Vol | 95 | 0 | 0 | 294 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| Through Vol | 0 | 61 | 31 | 0 | 30 | 0 | 0 | 70 | 0 | 145 | 73 |
| RT Vol | 0 | 0 | 4 | 0 | 0 | 156 | 0 | 0 | 0 | 0 | 516 |
| Lane Flow Rate | 103 | 67 | 38 | 320 | 33 | 170 | 0 | 76 | 7 | 158 | 640 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.262 | 0.16 | 0.089 | 0.743 | 0.071 | 0.338 | 0 | 0.189 | 0.015 | 0.335 | 1.244 |
| Departure Headway (Hd) | 9.705 | 9.187 | 9.103 | 8.828 | 8.323 | 7.616 | 9.391 | 9.391 | 8.138 | 7.627 | 7 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 373 | 393 | 396 | 412 | 433 | 475 | 0 | 384 | 437 | 469 | 518 |
| Service Time | 7.405 | 6.887 | 6.803 | 6.528 | 6.023 | 5.316 | 7.091 | 7.091 | 5.936 | 5.425 | 4.798 |
| HCM Lane V/C Ratio | 0.276 | 0.17 | 0.096 | 0.777 | 0.076 | 0.358 | 0 | 0.198 | 0.016 | 0.337 | 1.236 |
| HCM Control Delay | 15.8 | 13.6 | 12.7 | 33 | 11.7 | 14.2 | 12.1 | 14.3 | 11.1 | 14.3 | 148.3 |
| HCM Lane LOS | C | B | B | D | B | B | N | B | B | B | F |
| HCM 95th-tile Q | 1 | 0.6 | 0.3 | 6 | 0.2 | 1.5 | 0 | 0.7 | 0 | 1.5 | 25 |

HCM 6th Signalized Intersection Summary
9: Stephanie St & I-215 WB Ramps

Henderson Interchange
Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|-----|------|------|-------|-------|------|------|------|------|------|
| Lane Configurations | 0 | 0 | 0 | 1 | <1 | 1 | 2 | 3 | 0 | 0 | 3 | 1 |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 577 | 17 | 446 | 811 | 1339 | 0 | 0 | 296 | 614 |
| Future Volume (veh/h) | 0 | 0 | 0 | 577 | 17 | 446 | 811 | 1339 | 0 | 0 | 296 | 614 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1826 | 1826 | 1826 | 1826 | 1826 | 0 | 0 | 1826 | 1826 |
| Adj Flow Rate, veh/h | | | | 640 | 0 | 0 | 882 | 1455 | 0 | 0 | 322 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 5 | 5 |
| Cap, veh/h | | | | 747 | 0 | | 670 | 3012 | 0 | 0 | 1588 | |
| Arrive On Green | | | | 0.21 | 0.00 | 0.00 | 0.20 | 0.60 | 0.00 | 0.00 | 0.32 | 0.00 |
| Sat Flow, veh/h | | | | 3478 | 0 | 1547 | 3374 | 5149 | 0 | 0 | 5149 | 1547 |
| Grp Volume(v), veh/h | | | | 640 | 0 | 0 | 882 | 1455 | 0 | 0 | 322 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1739 | 0 | 1547 | 1687 | 1662 | 0 | 0 | 1662 | 1547 |
| Q Serve(g_s), s | | | | 12.4 | 0.0 | 0.0 | 13.9 | 11.4 | 0.0 | 0.0 | 3.3 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 12.4 | 0.0 | 0.0 | 13.9 | 11.4 | 0.0 | 0.0 | 3.3 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 747 | 0 | | 670 | 3012 | 0 | 0 | 1588 | |
| V/C Ratio(X) | | | | 0.86 | 0.00 | | 1.32 | 0.48 | 0.00 | 0.00 | 0.20 | |
| Avail Cap(c_a), veh/h | | | | 830 | 0 | | 670 | 3012 | 0 | 0 | 1588 | |
| HCM Platoon Ratio | | | | 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 | 0.00 | 0.25 | 0.25 | 0.00 | 0.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | | | | 26.5 | 0.0 | 0.0 | 28.0 | 7.7 | 0.0 | 0.0 | 17.4 | 0.0 |
| Incr Delay (d2), s/veh | | | | 8.2 | 0.0 | 0.0 | 145.2 | 0.1 | 0.0 | 0.0 | 0.3 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 5.4 | 0.0 | 0.0 | 18.5 | 2.9 | 0.0 | 0.0 | 1.2 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 34.7 | 0.0 | 0.0 | 173.3 | 7.9 | 0.0 | 0.0 | 17.7 | 0.0 |
| LnGrp LOS | | | | C | A | | F | A | A | A | B | |
| Approach Vol, veh/h | | | | | 640 | A | | 2337 | | | 322 | A |
| Approach Delay, s/veh | | | | | 34.7 | | | 70.3 | | | 17.7 | |
| Approach LOS | | | | | C | | | E | | | B | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 20.0 | 27.7 | | | | 47.7 | | 21.3 | | | | |
| Change Period (Y+Rc), s | 6.1 | * 5.4 | | | | * 5.4 | | 6.3 | | | | |
| Max Green Setting (Gmax), s | 13.9 | * 22 | | | | * 42 | | 16.7 | | | | |
| Max Q Clear Time (g_c+I1), s | 15.9 | 5.3 | | | | 13.4 | | 14.4 | | | | |
| Green Ext Time (p_c), s | 0.0 | 1.7 | | | | 11.7 | | 0.6 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 58.2 |
| HCM 6th LOS | E |

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

9: Stephanie St & I-215 WB Ramps

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|-----|------|------|-------|-------|------|------|------|------|------|
| Lane Configurations | | | | ↙ | ↖ | ↗ | ↘↙ | ↕↖↗ | | | ↕↘↙ | ↗ |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 501 | 5 | 324 | 463 | 1437 | 0 | 0 | 931 | 1549 |
| Future Volume (veh/h) | 0 | 0 | 0 | 501 | 5 | 324 | 463 | 1437 | 0 | 0 | 931 | 1549 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | | | | 1781 | 1781 | 1781 | 1781 | 1781 | 0 | 0 | 1781 | 1781 |
| Adj Flow Rate, veh/h | | | | 549 | 0 | 0 | 503 | 1562 | 0 | 0 | 1012 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 8 | 8 | 8 | 8 | 8 | 0 | 0 | 8 | 8 |
| Cap, veh/h | | | | 617 | 0 | | 506 | 3179 | 0 | 0 | 2289 | |
| Arrive On Green | | | | 0.18 | 0.00 | 0.00 | 0.05 | 0.22 | 0.00 | 0.00 | 0.47 | 0.00 |
| Sat Flow, veh/h | | | | 3393 | 0 | 1510 | 3291 | 5024 | 0 | 0 | 5024 | 1510 |
| Grp Volume(v), veh/h | | | | 549 | 0 | 0 | 503 | 1562 | 0 | 0 | 1012 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1697 | 0 | 1510 | 1646 | 1621 | 0 | 0 | 1621 | 1510 |
| Q Serve(g_s), s | | | | 25.3 | 0.0 | 0.0 | 24.4 | 45.1 | 0.0 | 0.0 | 22.3 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 25.3 | 0.0 | 0.0 | 24.4 | 45.1 | 0.0 | 0.0 | 22.3 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 617 | 0 | | 506 | 3179 | 0 | 0 | 2289 | |
| V/C Ratio(X) | | | | 0.89 | 0.00 | | 0.99 | 0.49 | 0.00 | 0.00 | 0.44 | |
| Avail Cap(c_a), veh/h | | | | 927 | 0 | | 506 | 3179 | 0 | 0 | 2289 | |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 0.00 | 0.58 | 0.58 | 0.00 | 0.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | | | | 63.9 | 0.0 | 0.0 | 75.9 | 39.4 | 0.0 | 0.0 | 28.3 | 0.0 |
| Incr Delay (d2), s/veh | | | | 7.4 | 0.0 | 0.0 | 28.9 | 0.3 | 0.0 | 0.0 | 0.6 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 11.4 | 0.0 | 0.0 | 12.9 | 19.7 | 0.0 | 0.0 | 8.6 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 71.4 | 0.0 | 0.0 | 104.8 | 39.7 | 0.0 | 0.0 | 28.9 | 0.0 |
| LnGrp LOS | | | | E | A | | F | D | A | A | C | |
| Approach Vol, veh/h | | | | | 549 | A | | 2065 | | | 1012 | A |
| Approach Delay, s/veh | | | | | 71.4 | | | 55.6 | | | 28.9 | |
| Approach LOS | | | | | E | | | E | | | C | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 30.7 | 80.0 | | | | 110.7 | | 35.4 | | | | |
| Change Period (Y+Rc), s | * 6.1 | 4.7 | | | | * 6.1 | | 6.3 | | | | |
| Max Green Setting (Gmax), s | * 24 | 75.3 | | | | * 1E2 | | 43.7 | | | | |
| Max Q Clear Time (g_c+I1), s | 26.4 | 24.3 | | | | 47.1 | | 27.3 | | | | |
| Green Ext Time (p_c), s | 0.0 | 8.1 | | | | 16.1 | | 1.8 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 50.5 |
| HCM 6th LOS | D |

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 10: Stephanie St & I-215 EB Ramps

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|------|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | 1 | <1 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 3 | 0 |
| Traffic Volume (veh/h) | 1060 | 1 | 409 | 0 | 0 | 0 | 0 | 1209 | 711 | 190 | 820 | 0 |
| Future Volume (veh/h) | 1060 | 1 | 409 | 0 | 0 | 0 | 0 | 1209 | 711 | 190 | 820 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 1826 | | | | 0 | 1826 | 1826 | 1826 | 1826 | 0 |
| Adj Flow Rate, veh/h | 1153 | 0 | 0 | | | | 0 | 1314 | 0 | 207 | 891 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | | | | 0 | 5 | 5 | 5 | 5 | 0 |
| Cap, veh/h | 825 | 0 | | | | | 0 | 2065 | | 299 | 2962 | 0 |
| Arrive On Green | 0.24 | 0.00 | 0.00 | | | | 0.00 | 0.41 | 0.00 | 0.09 | 0.59 | 0.00 |
| Sat Flow, veh/h | 3478 | 0 | 1547 | | | | 0 | 5149 | 1547 | 3374 | 5149 | 0 |
| Grp Volume(v), veh/h | 1153 | 0 | 0 | | | | 0 | 1314 | 0 | 207 | 891 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1547 | | | | 0 | 1662 | 1547 | 1687 | 1662 | 0 |
| Q Serve(g_s), s | 16.6 | 0.0 | 0.0 | | | | 0.0 | 14.7 | 0.0 | 4.2 | 6.2 | 0.0 |
| Cycle Q Clear(g_c), s | 16.6 | 0.0 | 0.0 | | | | 0.0 | 14.7 | 0.0 | 4.2 | 6.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 825 | 0 | | | | | 0 | 2065 | | 299 | 2962 | 0 |
| V/C Ratio(X) | 1.40 | 0.00 | | | | | 0.00 | 0.64 | | 0.69 | 0.30 | 0.00 |
| Avail Cap(c_a), veh/h | 825 | 0 | | | | | 0 | 2065 | | 414 | 2998 | 0 |
| HCM Platoon Ratio | 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 | 0.00 | | | | 0.00 | 1.00 | 0.00 | 0.85 | 0.85 | 0.00 |
| Uniform Delay (d), s/veh | 26.7 | 0.0 | 0.0 | | | | 0.0 | 16.3 | 0.0 | 31.0 | 7.0 | 0.0 |
| Incr Delay (d2), s/veh | 186.5 | 0.0 | 0.0 | | | | 0.0 | 0.7 | 0.0 | 2.4 | 0.2 | 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 |
| %ile BackOfQ(50%),veh/ln | 27.5 | 0.0 | 0.0 | | | | 0.0 | 4.8 | 0.0 | 1.7 | 1.6 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 213.2 | 0.0 | 0.0 | | | | 0.0 | 17.0 | 0.0 | 33.4 | 7.2 | 0.0 |
| LnGrp LOS | F | A | | | | | A | B | | C | A | A |
| Approach Vol, veh/h | | 1153 | A | | | | | 1314 | A | | 1098 | |
| Approach Delay, s/veh | | 213.2 | | | | | | 17.0 | | | 12.2 | |
| Approach LOS | | F | | | | | | B | | | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 47.0 | | 23.0 | 12.6 | 34.4 | | | | | | |
| Change Period (Y+Rc), s | | * 5.4 | | 6.4 | 6.4 | * 5.4 | | | | | | |
| Max Green Setting (Gmax), s | | * 42 | | 16.6 | 8.6 | * 27 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 8.2 | | 18.6 | 6.2 | 16.7 | | | | | | |
| Green Ext Time (p_c), s | | 6.5 | | 0.0 | 0.2 | 5.7 | | | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 78.9 |
| HCM 6th LOS | E |

Notes




























User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 10: Stephanie St & I-215 EB Ramps

Henderson Interchange
 Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|--|---|---|--|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  | | | | |    |  |   |    |    |
| Traffic Volume (veh/h) | 943 | 5 | 482 | 0 | 0 | 0 | 0 | 1149 | 1091 | 387 | 1233 | 0 |
| Future Volume (veh/h) | 943 | 5 | 482 | 0 | 0 | 0 | 0 | 1149 | 1091 | 387 | 1233 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 1781 | | | | 0 | 1781 | 1781 | 1781 | 1781 | 0 |
| Adj Flow Rate, veh/h | 1029 | 0 | 0 | | | | 0 | 1249 | 0 | 421 | 1340 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | | | | 0 | 8 | 8 | 8 | 8 | 0 |
| Cap, veh/h | 1113 | 0 | | | | | 0 | 1473 | | 403 | 2264 | 0 |
| Arrive On Green | 0.33 | 0.00 | 0.00 | | | | 0.00 | 0.30 | 0.00 | 0.12 | 0.47 | 0.00 |
| Sat Flow, veh/h | 3393 | 0 | 1510 | | | | 0 | 5024 | 1510 | 3291 | 5024 | 0 |
| Grp Volume(v), veh/h | 1029 | 0 | 0 | | | | 0 | 1249 | 0 | 421 | 1340 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1510 | | | | 0 | 1621 | 1510 | 1646 | 1621 | 0 |
| Q Serve(g_s), s | 46.8 | 0.0 | 0.0 | | | | 0.0 | 38.5 | 0.0 | 19.6 | 32.5 | 0.0 |
| Cycle Q Clear(g_c), s | 46.8 | 0.0 | 0.0 | | | | 0.0 | 38.5 | 0.0 | 19.6 | 32.5 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 1113 | 0 | | | | | 0 | 1473 | | 403 | 2264 | 0 |
| V/C Ratio(X) | 0.92 | 0.00 | | | | | 0.00 | 0.85 | | 1.04 | 0.59 | 0.00 |
| Avail Cap(c_a), veh/h | 1349 | 0 | | | | | 0 | 1781 | | 403 | 2587 | 0 |
| HCM Platoon Ratio | 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 | 0.00 | | | | 0.00 | 1.00 | 0.00 | 0.87 | 0.87 | 0.00 |
| Uniform Delay (d), s/veh | 51.9 | 0.0 | 0.0 | | | | 0.0 | 52.3 | 0.0 | 70.2 | 31.6 | 0.0 |
| Incr Delay (d2), s/veh | 9.7 | 0.0 | 0.0 | | | | 0.0 | 6.2 | 0.0 | 53.8 | 0.2 | 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 |
| %ile BackOfQ(50%),veh/ln | 20.9 | 0.0 | 0.0 | | | | 0.0 | 16.2 | 0.0 | 11.1 | 12.5 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.6 | 0.0 | 0.0 | | | | 0.0 | 58.5 | 0.0 | 124.0 | 31.8 | 0.0 |
| LnGrp LOS | E | A | | | | | A | E | | F | C | A |
| Approach Vol, veh/h | | 1029 | A | | | | | 1249 | A | | 1761 | |
| Approach Delay, s/veh | | 61.6 | | | | | | 58.5 | | | 53.8 | |
| Approach LOS | | E | | | | | | E | | | D | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 79.9 | | 58.9 | 26.0 | 53.9 | | | | | | |
| Change Period (Y+Rc), s | | * 5.4 | | 6.4 | 6.4 | * 5.4 | | | | | | |
| Max Green Setting (Gmax), s | | * 85 | | 63.6 | 19.6 | * 59 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 34.5 | | 48.8 | 21.6 | 40.5 | | | | | | |
| Green Ext Time (p_c), s | | 12.2 | | 3.7 | 0.0 | 7.9 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 57.3 | | | | | | | | | |
| HCM 6th LOS | | | E | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |
| Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary
 11: Gibson Rd & Wigwam Pkwy

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | 1 | 2> | 0 | 1 | 2> | 0 | 1 | 2 | 1 | 1 | 3 | 1 |
| Traffic Volume (veh/h) | 174 | 49 | 228 | 79 | 41 | 41 | 262 | 1387 | 301 | 67 | 815 | 218 |
| Future Volume (veh/h) | 174 | 49 | 228 | 79 | 41 | 41 | 262 | 1387 | 301 | 67 | 815 | 218 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 189 | 53 | 248 | 86 | 45 | 45 | 285 | 1508 | 327 | 73 | 886 | 237 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 364 | 311 | 277 | 137 | 89 | 78 | 432 | 1986 | 886 | 194 | 2580 | 801 |
| Arrive On Green | 0.17 | 0.18 | 0.18 | 0.04 | 0.05 | 0.05 | 0.09 | 0.57 | 0.57 | 0.04 | 0.52 | 0.52 |
| Sat Flow, veh/h | 1739 | 1735 | 1547 | 1739 | 1750 | 1534 | 1739 | 3469 | 1547 | 1739 | 4985 | 1547 |
| Grp Volume(v), veh/h | 189 | 53 | 248 | 86 | 45 | 45 | 285 | 1508 | 327 | 73 | 886 | 237 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1735 | 1547 | 1739 | 1735 | 1550 | 1739 | 1735 | 1547 | 1739 | 1662 | 1547 |
| Q Serve(g_s), s | 5.7 | 2.7 | 16.5 | 0.9 | 2.6 | 3.0 | 7.6 | 34.5 | 4.9 | 2.0 | 10.9 | 6.8 |
| Cycle Q Clear(g_c), s | 5.7 | 2.7 | 16.5 | 0.9 | 2.6 | 3.0 | 7.6 | 34.5 | 4.9 | 2.0 | 10.9 | 6.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 364 | 311 | 277 | 137 | 88 | 79 | 432 | 1986 | 886 | 194 | 2580 | 801 |
| V/C Ratio(X) | 0.52 | 0.17 | 0.89 | 0.63 | 0.51 | 0.58 | 0.66 | 0.76 | 0.37 | 0.38 | 0.34 | 0.30 |
| Avail Cap(c_a), veh/h | 364 | 339 | 302 | 325 | 339 | 303 | 445 | 1986 | 886 | 303 | 2580 | 801 |
| 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 | 0.69 | 0.69 | 0.69 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.7 | 36.5 | 42.1 | 48.5 | 48.6 | 48.7 | 10.5 | 17.0 | 2.0 | 16.4 | 14.9 | 7.9 |
| Incr Delay (d2), s/veh | 1.3 | 0.3 | 25.8 | 4.7 | 4.4 | 6.5 | 2.4 | 1.9 | 0.8 | 1.2 | 0.4 | 0.9 |
| 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 | 4.4 | 1.2 | 8.1 | 2.3 | 1.2 | 1.3 | 2.8 | 12.7 | 3.4 | 0.8 | 3.9 | 3.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 39.0 | 36.8 | 67.9 | 53.2 | 53.0 | 55.3 | 12.9 | 18.9 | 2.8 | 17.6 | 15.2 | 8.9 |
| LnGrp LOS | D | D | E | D | D | E | B | B | A | B | B | A |
| Approach Vol, veh/h | | 490 | | | 176 | | | 2120 | | | 1196 | |
| Approach Delay, s/veh | | 53.4 | | | 53.7 | | | 15.6 | | | 14.1 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 14.2 | 58.8 | 8.6 | 23.3 | 8.5 | 64.6 | 22.1 | 9.8 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 10.5 | 40.5 | 15.5 | 20.5 | 10.5 | 40.5 | 15.5 | 20.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 9.6 | 12.9 | 2.9 | 18.5 | 4.0 | 36.5 | 7.7 | 5.0 | | | | |
| Green Ext Time (p_c), s | 0.1 | 7.5 | 0.1 | 0.4 | 0.1 | 3.3 | 0.3 | 0.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 21.5 |
| HCM 6th LOS | C |

Notes

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

HCM 6th Signalized Intersection Summary
 11: Gibson Rd & Wigwam Pkwy

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | ↗ | ↖ | ↗ | ↗ |
| Traffic Volume (veh/h) | 214 | 34 | 342 | 162 | 43 | 85 | 181 | 994 | 175 | 59 | 1137 | 174 |
| Future Volume (veh/h) | 214 | 34 | 342 | 162 | 43 | 85 | 181 | 994 | 175 | 59 | 1137 | 174 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 233 | 37 | 372 | 176 | 47 | 92 | 197 | 1080 | 190 | 64 | 1236 | 189 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 453 | 430 | 384 | 218 | 430 | 384 | 226 | 1444 | 644 | 139 | 1966 | 610 |
| Arrive On Green | 0.09 | 0.25 | 0.25 | 0.09 | 0.25 | 0.25 | 0.04 | 0.29 | 0.29 | 0.04 | 0.40 | 0.40 |
| Sat Flow, veh/h | 1697 | 1692 | 1510 | 1697 | 1692 | 1510 | 1697 | 3385 | 1510 | 1697 | 4863 | 1510 |
| Grp Volume(v), veh/h | 233 | 37 | 372 | 176 | 47 | 92 | 197 | 1080 | 190 | 64 | 1236 | 189 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 1692 | 1510 | 1697 | 1692 | 1510 | 1697 | 1692 | 1510 | 1697 | 1621 | 1510 |
| Q Serve(g_s), s | 10.5 | 2.0 | 29.3 | 9.1 | 2.6 | 5.8 | 4.8 | 34.8 | 11.8 | 2.9 | 24.4 | 6.7 |
| Cycle Q Clear(g_c), s | 10.5 | 2.0 | 29.3 | 9.1 | 2.6 | 5.8 | 4.8 | 34.8 | 11.8 | 2.9 | 24.4 | 6.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 453 | 430 | 384 | 218 | 430 | 384 | 226 | 1444 | 644 | 139 | 1966 | 610 |
| V/C Ratio(X) | 0.51 | 0.09 | 0.97 | 0.81 | 0.11 | 0.24 | 0.87 | 0.75 | 0.30 | 0.46 | 0.63 | 0.31 |
| Avail Cap(c_a), veh/h | 453 | 430 | 384 | 218 | 430 | 384 | 303 | 1444 | 644 | 296 | 1966 | 610 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.88 | 0.88 | 0.88 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.2 | 34.1 | 44.3 | 32.9 | 34.3 | 35.5 | 51.3 | 37.0 | 28.8 | 30.3 | 28.6 | 10.3 |
| Incr Delay (d2), s/veh | 1.0 | 0.1 | 37.8 | 19.7 | 0.1 | 0.3 | 16.6 | 3.2 | 1.0 | 2.4 | 1.5 | 1.3 |
| 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 | 0.7 | 0.8 | 14.8 | 4.9 | 1.1 | 2.2 | 6.9 | 15.5 | 4.7 | 1.2 | 9.4 | 3.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 32.2 | 34.2 | 82.1 | 52.5 | 34.4 | 35.9 | 67.9 | 40.2 | 29.8 | 32.7 | 30.1 | 11.7 |
| LnGrp LOS | C | C | F | D | C | D | E | D | C | C | C | B |
| Approach Vol, veh/h | | 642 | | | 315 | | | 1467 | | | 1489 | |
| Approach Delay, s/veh | | 61.2 | | | 45.0 | | | 42.5 | | | 27.9 | |
| Approach LOS | | E | | | D | | | D | | | C | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.6 | 53.0 | 15.0 | 35.0 | 8.9 | 55.7 | 15.0 | 35.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 12.5 | 48.5 | 10.5 | 30.5 | 15.5 | 45.5 | 10.5 | 30.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 6.8 | 26.4 | 11.1 | 31.3 | 4.9 | 36.8 | 12.5 | 7.8 | | | | |
| Green Ext Time (p_c), s | 0.2 | 9.7 | 0.0 | 0.0 | 0.1 | 4.9 | 0.0 | 0.7 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 40.2 |
| HCM 6th LOS | D |

Notes

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

HCM 6th Signalized Intersection Summary
 12: Gibson Rd & I-215 WB Ramp

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-----|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | 0 | 0 | 0 | 1 | <1 | 1 | 2 | 3 | 0 | 0 | 3> | 0 |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 264 | 26 | 520 | 430 | 1380 | 0 | 0 | 636 | 614 |
| Future Volume (veh/h) | 0 | 0 | 0 | 264 | 26 | 520 | 430 | 1380 | 0 | 0 | 636 | 614 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1826 | 1826 | 1826 | 1826 | 1826 | 0 | 0 | 1826 | 1826 |
| Adj Flow Rate, veh/h | | | | 307 | 0 | 565 | 467 | 1500 | 0 | 0 | 691 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 5 | 5 |
| Cap, veh/h | | | | 1166 | 0 | 519 | 553 | 2744 | 0 | 0 | 1656 | |
| Arrive On Green | | | | 0.34 | 0.00 | 0.34 | 0.16 | 0.55 | 0.00 | 0.00 | 0.11 | 0.00 |
| Sat Flow, veh/h | | | | 3478 | 0 | 1547 | 3374 | 5149 | 0 | 0 | 5313 | 0 |
| Grp Volume(v), veh/h | | | | 307 | 0 | 565 | 467 | 1500 | 0 | 0 | 691 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1739 | 0 | 1547 | 1687 | 1662 | 0 | 0 | 1662 | 0 |
| Q Serve(g_s), s | | | | 6.8 | 0.0 | 35.2 | 14.1 | 20.3 | 0.0 | 0.0 | 13.6 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 6.8 | 0.0 | 35.2 | 14.1 | 20.3 | 0.0 | 0.0 | 13.6 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | | | | 1166 | 0 | 519 | 553 | 2744 | 0 | 0 | 1656 | |
| V/C Ratio(X) | | | | 0.26 | 0.00 | 1.09 | 0.84 | 0.55 | 0.00 | 0.00 | 0.42 | |
| Avail Cap(c_a), veh/h | | | | 1166 | 0 | 519 | 781 | 2744 | 0 | 0 | 1656 | |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.35 | 0.35 | 0.00 | 0.00 | 0.95 | 0.00 |
| Uniform Delay (d), s/veh | | | | 25.4 | 0.0 | 34.9 | 42.6 | 15.2 | 0.0 | 0.0 | 37.3 | 0.0 |
| Incr Delay (d2), s/veh | | | | 0.6 | 0.0 | 65.9 | 2.2 | 0.1 | 0.0 | 0.0 | 0.7 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 2.7 | 0.0 | 21.8 | 5.9 | 7.0 | 0.0 | 0.0 | 6.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 26.0 | 0.0 | 100.8 | 44.8 | 15.3 | 0.0 | 0.0 | 38.0 | 0.0 |
| LnGrp LOS | | | | C | A | F | D | B | A | A | D | |
| Approach Vol, veh/h | | | | | 872 | | | 1967 | | | 691 | A |
| Approach Delay, s/veh | | | | | 74.5 | | | 22.3 | | | 38.0 | |
| Approach LOS | | | | | E | | | C | | | D | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.9 | 40.1 | | | | 63.0 | | 42.0 | | | | |
| Change Period (Y+Rc), s | * 5.7 | * 5.2 | | | | * 5.2 | | 6.8 | | | | |
| Max Green Setting (Gmax), s | * 24 | * 28 | | | | * 58 | | 35.2 | | | | |
| Max Q Clear Time (g_c+I1), s | 16.1 | 15.6 | | | | 22.3 | | 37.2 | | | | |
| Green Ext Time (p_c), s | 1.1 | 3.6 | | | | 13.8 | | 0.0 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 38.2 |
| HCM 6th LOS | D |

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
 Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 12: Gibson Rd & I-215 WB Ramp

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-----|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | | | | ↙ | ↖ | ↗ | ↘↙ | ↘↖ | | | ↗↘ | ↗↙ |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 536 | 6 | 319 | 274 | 1106 | 0 | 0 | 913 | 747 |
| Future Volume (veh/h) | 0 | 0 | 0 | 536 | 6 | 319 | 274 | 1106 | 0 | 0 | 913 | 747 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | No | | | No | | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1781 | 1781 | 1781 | 1781 | 1781 | 0 | 0 | 1781 | 1781 |
| Adj Flow Rate, veh/h | | | | 588 | 0 | 347 | 298 | 1202 | 0 | 0 | 992 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 8 | 8 | 8 | 8 | 8 | 0 | 0 | 8 | 8 |
| Cap, veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| Arrive On Green | | | | 0.28 | 0.00 | 0.28 | 0.17 | 0.62 | 0.00 | 0.00 | 0.41 | 0.00 |
| Sat Flow, veh/h | | | | 3393 | 0 | 1510 | 3291 | 5024 | 0 | 0 | 5184 | 0 |
| Grp Volume(v), veh/h | | | | 588 | 0 | 347 | 298 | 1202 | 0 | 0 | 992 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1697 | 0 | 1510 | 1646 | 1621 | 0 | 0 | 1621 | 0 |
| Q Serve(g_s), s | | | | 18.2 | 0.0 | 25.9 | 9.9 | 14.8 | 0.0 | 0.0 | 18.1 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 18.2 | 0.0 | 25.9 | 9.9 | 14.8 | 0.0 | 0.0 | 18.1 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| V/C Ratio(X) | | | | 0.63 | 0.00 | 0.83 | 0.52 | 0.40 | 0.00 | 0.00 | 0.50 | |
| Avail Cap(c_a), veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| HCM Platoon Ratio | | | | 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 | 0.51 | 0.51 | 0.00 | 0.00 | 0.85 | 0.00 |
| Uniform Delay (d), s/veh | | | | 38.0 | 0.0 | 40.8 | 45.1 | 11.3 | 0.0 | 0.0 | 26.1 | 0.0 |
| Incr Delay (d2), s/veh | | | | 3.2 | 0.0 | 17.2 | 0.4 | 0.2 | 0.0 | 0.0 | 0.7 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 7.7 | 0.0 | 11.3 | 4.0 | 4.9 | 0.0 | 0.0 | 6.9 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 41.1 | 0.0 | 58.0 | 45.5 | 11.5 | 0.0 | 0.0 | 26.8 | 0.0 |
| LnGrp LOS | | | | D | A | E | D | B | A | A | C | |
| Approach Vol, veh/h | | | | | 935 | | | 1500 | | | 992 | A |
| Approach Delay, s/veh | | | | | 47.4 | | | 18.3 | | | 26.8 | |
| Approach LOS | | | | | D | | | B | | | C | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 26.5 | 54.0 | | | | 80.5 | | 40.0 | | | | |
| Change Period (Y+Rc), s | * 5.7 | * 4.6 | | | | * 5.7 | | 6.8 | | | | |
| Max Green Setting (Gmax), s | * 20 | * 49 | | | | * 75 | | 33.2 | | | | |
| Max Q Clear Time (g_c+I1), s | 11.9 | 20.1 | | | | 16.8 | | 27.9 | | | | |
| Green Ext Time (p_c), s | 0.7 | 7.6 | | | | 11.0 | | 1.8 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 28.7 |
| HCM 6th LOS | C |

Notes

- User approved volume balancing among the lanes for turning movement.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
- Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 13: Gibson Rd & I-215 EB Ramp

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | 1 | <1 | 1 | 0 | 0 | 0 | 0 | 3> | 0 | 2 | 3 | 0 |
| Traffic Volume (veh/h) | 846 | 1 | 143 | 0 | 0 | 0 | 0 | 1046 | 494 | 242 | 478 | 0 |
| Future Volume (veh/h) | 846 | 1 | 143 | 0 | 0 | 0 | 0 | 1046 | 494 | 242 | 478 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 1826 | | | | 0 | 1826 | 1826 | 1826 | 1826 | 0 |
| Adj Flow Rate, veh/h | 921 | 0 | 0 | | | | 0 | 1137 | 0 | 263 | 520 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | | | | 0 | 5 | 5 | 5 | 5 | 0 |
| Cap, veh/h | 1014 | 0 | | | | | 0 | 2148 | | 325 | 2937 | 0 |
| Arrive On Green | 0.29 | 0.00 | 0.00 | | | | 0.00 | 0.43 | 0.00 | 0.19 | 1.00 | 0.00 |
| Sat Flow, veh/h | 3478 | 0 | 1547 | | | | 0 | 5313 | 0 | 3374 | 5149 | 0 |
| Grp Volume(v), veh/h | 921 | 0 | 0 | | | | 0 | 1137 | 0 | 263 | 520 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1547 | | | | 0 | 1662 | 0 | 1687 | 1662 | 0 |
| Q Serve(g_s), s | 26.8 | 0.0 | 0.0 | | | | 0.0 | 17.7 | 0.0 | 7.8 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 26.8 | 0.0 | 0.0 | | | | 0.0 | 17.7 | 0.0 | 7.8 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 1014 | 0 | | | | | 0 | 2148 | | 325 | 2937 | 0 |
| V/C Ratio(X) | 0.91 | 0.00 | | | | | 0.00 | 0.53 | | 0.81 | 0.18 | 0.00 |
| Avail Cap(c_a), veh/h | 1129 | 0 | | | | | 0 | 2148 | | 434 | 2937 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | | | | 0.00 | 0.65 | 0.00 | 0.51 | 0.51 | 0.00 |
| Uniform Delay (d), s/veh | 35.8 | 0.0 | 0.0 | | | | 0.0 | 22.0 | 0.0 | 41.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 10.0 | 0.0 | 0.0 | | | | 0.0 | 0.2 | 0.0 | 4.3 | 0.1 | 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 |
| %ile BackOfQ(50%),veh/ln | 12.1 | 0.0 | 0.0 | | | | 0.0 | 6.4 | 0.0 | 3.1 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.8 | 0.0 | 0.0 | | | | 0.0 | 22.2 | 0.0 | 45.8 | 0.1 | 0.0 |
| LnGrp LOS | D | A | | | | | A | C | | D | A | A |
| Approach Vol, veh/h | | 921 | A | | | | | 1137 | A | | 783 | |
| Approach Delay, s/veh | | 45.8 | | | | | | 22.2 | | | 15.4 | |
| Approach LOS | | D | | | | | | C | | | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 67.5 | | 37.5 | 16.6 | 50.8 | | | | | | |
| Change Period (Y+Rc), s | | * 5.6 | | 6.9 | 6.5 | * 5.6 | | | | | | |
| Max Green Setting (Gmax), s | | * 59 | | 34.1 | 13.5 | * 38 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | 28.8 | 9.8 | 19.7 | | | | | | |
| Green Ext Time (p_c), s | | 3.7 | | 1.8 | 0.3 | 7.3 | | | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 28.0 |
| HCM 6th LOS | C |

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 13: Gibson Rd & I-215 EB Ramp

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | ↗ | ↖ | ↗ | | | | | ↑↑↑ | | ↗↖ | ↑↑↑ | |
| Traffic Volume (veh/h) | 520 | 11 | 649 | 0 | 0 | 0 | 0 | 730 | 280 | 323 | 1157 | 0 |
| Future Volume (veh/h) | 520 | 11 | 649 | 0 | 0 | 0 | 0 | 730 | 280 | 323 | 1157 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 1781 | | | | 0 | 1781 | 1781 | 1781 | 1781 | 0 |
| Adj Flow Rate, veh/h | 574 | 0 | 0 | | | | 0 | 793 | 0 | 351 | 1258 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | | | | 0 | 8 | 8 | 8 | 8 | 0 |
| Cap, veh/h | 670 | 0 | | | | | 0 | 2521 | | 414 | 3396 | 0 |
| Arrive On Green | 0.20 | 0.00 | 0.00 | | | | 0.00 | 0.52 | 0.00 | 0.13 | 0.70 | 0.00 |
| Sat Flow, veh/h | 3393 | 0 | 1510 | | | | 0 | 5184 | 0 | 3291 | 5024 | 0 |
| Grp Volume(v), veh/h | 574 | 0 | 0 | | | | 0 | 793 | 0 | 351 | 1258 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1510 | | | | 0 | 1621 | 0 | 1646 | 1621 | 0 |
| Q Serve(g_s), s | 19.6 | 0.0 | 0.0 | | | | 0.0 | 11.3 | 0.0 | 12.5 | 12.6 | 0.0 |
| Cycle Q Clear(g_c), s | 19.6 | 0.0 | 0.0 | | | | 0.0 | 11.3 | 0.0 | 12.5 | 12.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 670 | 0 | | | | | 0 | 2521 | | 414 | 3396 | 0 |
| V/C Ratio(X) | 0.86 | 0.00 | | | | | 0.00 | 0.31 | | 0.85 | 0.37 | 0.00 |
| Avail Cap(c_a), veh/h | 1501 | 0 | | | | | 0 | 2521 | | 535 | 3396 | 0 |
| HCM Platoon Ratio | 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 | 0.00 | | | | 0.00 | 0.83 | 0.00 | 0.35 | 0.35 | 0.00 |
| Uniform Delay (d), s/veh | 46.5 | 0.0 | 0.0 | | | | 0.0 | 16.6 | 0.0 | 51.3 | 7.4 | 0.0 |
| Incr Delay (d2), s/veh | 3.3 | 0.0 | 0.0 | | | | 0.0 | 0.1 | 0.0 | 3.7 | 0.1 | 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 |
| %ile BackOfQ(50%),veh/ln | 8.3 | 0.0 | 0.0 | | | | 0.0 | 4.0 | 0.0 | 5.3 | 3.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 49.8 | 0.0 | 0.0 | | | | 0.0 | 16.7 | 0.0 | 55.0 | 7.5 | 0.0 |
| LnGrp LOS | D | A | | | | | A | B | | E | A | A |
| Approach Vol, veh/h | | 574 | A | | | | | 793 | A | | 1609 | |
| Approach Delay, s/veh | | 49.8 | | | | | | 16.7 | | | 17.9 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 89.4 | | 30.6 | 21.6 | 67.8 | | | | | | |
| Change Period (Y+Rc), s | | * 5.6 | | 6.9 | 6.5 | * 5.6 | | | | | | |
| Max Green Setting (Gmax), s | | * 55 | | 53.1 | 19.5 | * 28 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 14.6 | | 21.6 | 14.5 | 13.3 | | | | | | |
| Green Ext Time (p_c), s | | 11.2 | | 2.1 | 0.6 | 4.4 | | | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 23.7 |
| HCM 6th LOS | C |

Notes

- User approved volume balancing among the lanes for turning movement.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
- Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 14: Gibson Rd & Las Palmas Entrada Ave

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|-------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2> | 0 | 1 | 2 | 1 |
| Traffic Volume (veh/h) | 197 | 9 | 24 | 39 | 57 | 464 | 52 | 826 | 42 | 110 | 478 | 42 |
| Future Volume (veh/h) | 197 | 9 | 24 | 39 | 57 | 464 | 52 | 826 | 42 | 110 | 478 | 42 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 214 | 10 | 26 | 42 | 62 | 504 | 57 | 898 | 46 | 120 | 520 | 46 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 245 | 122 | 103 | 684 | 558 | 473 | 73 | 947 | 49 | 208 | 1274 | 568 |
| Arrive On Green | 0.08 | 0.07 | 0.07 | 0.32 | 0.31 | 0.31 | 0.04 | 0.28 | 0.28 | 0.04 | 0.12 | 0.12 |
| Sat Flow, veh/h | 1739 | 1826 | 1547 | 1739 | 1826 | 1547 | 1739 | 3358 | 172 | 1739 | 3469 | 1547 |
| Grp Volume(v), veh/h | 214 | 10 | 26 | 42 | 62 | 504 | 57 | 464 | 480 | 120 | 520 | 46 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1826 | 1547 | 1739 | 1826 | 1547 | 1739 | 1735 | 1795 | 1739 | 1735 | 1547 |
| Q Serve(g_s), s | 6.4 | 0.5 | 1.7 | 0.0 | 2.6 | 25.1 | 3.4 | 27.5 | 27.5 | 7.1 | 14.6 | 0.9 |
| Cycle Q Clear(g_c), s | 6.4 | 0.5 | 1.7 | 0.0 | 2.6 | 25.1 | 3.4 | 27.5 | 27.5 | 7.1 | 14.6 | 0.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.10 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 245 | 122 | 103 | 684 | 558 | 473 | 73 | 489 | 506 | 208 | 1274 | 568 |
| V/C Ratio(X) | 0.87 | 0.08 | 0.25 | 0.06 | 0.11 | 1.07 | 0.78 | 0.95 | 0.95 | 0.58 | 0.41 | 0.08 |
| Avail Cap(c_a), veh/h | 277 | 560 | 475 | 684 | 558 | 473 | 240 | 491 | 508 | 208 | 1274 | 568 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 0.99 | 0.99 |
| Uniform Delay (d), s/veh | 45.4 | 46.0 | 46.5 | 21.9 | 26.2 | 22.3 | 49.8 | 36.9 | 36.9 | 47.8 | 35.6 | 3.6 |
| Incr Delay (d2), s/veh | 23.3 | 0.3 | 1.3 | 0.0 | 0.4 | 59.9 | 16.0 | 27.9 | 27.3 | 3.9 | 1.0 | 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 | 7.0 | 0.3 | 0.7 | 0.7 | 1.2 | 16.5 | 1.8 | 14.8 | 15.2 | 3.4 | 6.9 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 68.7 | 46.3 | 47.8 | 22.0 | 26.6 | 82.2 | 65.8 | 64.9 | 64.3 | 51.7 | 36.6 | 3.8 |
| LnGrp LOS | E | D | D | C | C | F | E | E | E | D | D | A |
| Approach Vol, veh/h | | 250 | | | 608 | | | 1001 | | | 686 | |
| Approach Delay, s/veh | | 65.6 | | | 72.4 | | | 64.6 | | | 37.0 | |
| Approach LOS | | E | | | E | | | E | | | D | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.9 | 44.0 | 38.2 | 12.8 | 18.0 | 35.9 | 13.0 | 38.0 | | | | |
| Change Period (Y+Rc), s | 5.5 | * 5.5 | * 4.5 | 5.8 | 5.5 | 6.3 | * 4.5 | 5.9 | | | | |
| Max Green Setting (Gmax), s | 14.5 | * 27 | * 11 | 32.2 | 10.5 | 29.7 | * 11 | 32.1 | | | | |
| Max Q Clear Time (g_c+I1), s | 5.4 | 16.6 | 2.0 | 3.7 | 9.1 | 29.5 | 8.4 | 27.1 | | | | |
| Green Ext Time (p_c), s | 0.1 | 2.3 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 1.1 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 59.1 |
| HCM 6th LOS | E |

Notes

User approved pedestrian interval to be less than phase max green.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
14: Gibson Rd & Las Palmas Entrada Ave

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|-------|------|------|------|-------|-------|-------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 76 | 36 | 47 | 53 | 33 | 234 | 28 | 636 | 36 | 439 | 1257 | 134 |
| Future Volume (veh/h) | 76 | 36 | 47 | 53 | 33 | 234 | 28 | 636 | 36 | 439 | 1257 | 134 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 83 | 39 | 51 | 58 | 36 | 254 | 30 | 691 | 39 | 477 | 1366 | 146 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 169 | 104 | 88 | 333 | 293 | 248 | 45 | 670 | 38 | 688 | 2003 | 893 |
| Arrive On Green | 0.04 | 0.06 | 0.06 | 0.15 | 0.16 | 0.16 | 0.03 | 0.21 | 0.21 | 0.81 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1697 | 1781 | 1510 | 1697 | 1781 | 1510 | 1697 | 3257 | 184 | 1697 | 3385 | 1510 |
| Grp Volume(v), veh/h | 83 | 39 | 51 | 58 | 36 | 254 | 30 | 359 | 371 | 477 | 1366 | 146 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 1781 | 1510 | 1697 | 1781 | 1510 | 1697 | 1692 | 1748 | 1697 | 1692 | 1510 |
| Q Serve(g_s), s | 0.0 | 2.5 | 4.0 | 0.0 | 2.1 | 16.9 | 2.1 | 24.7 | 24.7 | 14.6 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 2.5 | 4.0 | 0.0 | 2.1 | 16.9 | 2.1 | 24.7 | 24.7 | 14.6 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.11 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 169 | 104 | 88 | 333 | 293 | 248 | 45 | 348 | 360 | 688 | 2003 | 893 |
| V/C Ratio(X) | 0.49 | 0.38 | 0.58 | 0.17 | 0.12 | 1.02 | 0.67 | 1.03 | 1.03 | 0.69 | 0.68 | 0.16 |
| Avail Cap(c_a), veh/h | 251 | 493 | 418 | 333 | 491 | 416 | 276 | 348 | 360 | 688 | 2003 | 893 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.62 | 0.62 | 0.62 |
| Uniform Delay (d), s/veh | 54.1 | 54.4 | 55.1 | 43.2 | 42.7 | 36.6 | 57.9 | 47.6 | 47.7 | 8.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 2.2 | 2.2 | 5.9 | 0.2 | 0.2 | 41.4 | 16.0 | 56.2 | 55.7 | 1.9 | 1.2 | 0.2 |
| 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 | 2.5 | 1.2 | 1.6 | 1.5 | 0.9 | 9.0 | 1.1 | 15.5 | 15.9 | 3.1 | 0.3 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 56.3 | 56.6 | 61.0 | 43.4 | 42.9 | 78.0 | 73.9 | 103.8 | 103.4 | 10.0 | 1.2 | 0.2 |
| LnGrp LOS | E | E | E | D | D | F | E | F | F | A | A | A |
| Approach Vol, veh/h | | 173 | | | 348 | | | 760 | | | 1989 | |
| Approach Delay, s/veh | | 57.8 | | | 68.6 | | | 102.4 | | | 3.2 | |
| Approach LOS | | E | | | E | | | F | | | A | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 8.7 | 76.5 | 22.0 | 12.8 | 54.2 | 31.0 | 9.2 | 25.6 | | | | |
| Change Period (Y+Rc), s | 5.5 | * 5.5 | * 4.5 | 5.8 | 5.5 | 6.3 | * 4.5 | 5.9 | | | | |
| Max Green Setting (Gmax), s | 19.5 | * 36 | * 11 | 33.2 | 29.5 | 24.7 | * 11 | 33.1 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.1 | 2.0 | 2.0 | 6.0 | 16.6 | 26.7 | 2.0 | 18.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 12.8 | 0.1 | 0.3 | 1.3 | 0.0 | 0.1 | 0.9 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 36.1 |
| HCM 6th LOS | D |

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

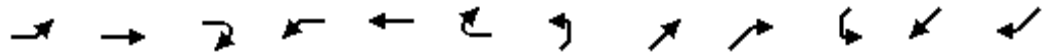
HCM Signalized Intersection Capacity Analysis
 16: Horizon Dr

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR |
|-----------------------------------|------|------|-------|------|-------|------|------|---------------------------|------|------|------|------|
| Lane Configurations | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 986 | 0 | 0 | 794 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 986 | 0 | 0 | 794 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.0 | | | 7.0 | | | | |
| Lane Util. Factor | | | | | 0.95 | | | 0.95 | | | | |
| Fr _t | | | | | 1.00 | | | 1.00 | | | | |
| Fl _t Protected | | | | | 1.00 | | | 1.00 | | | | |
| Satd. Flow (prot) | | | | | 3438 | | | 3438 | | | | |
| Fl _t Permitted | | | | | 1.00 | | | 1.00 | | | | |
| Satd. Flow (perm) | | | | | 3438 | | | 3438 | | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 1072 | 0 | 0 | 863 | 0 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 1072 | 0 | 0 | 863 | 0 | 0 | 0 | 0 |
| Turn Type | | | | | NA | | | NA | | | | |
| Protected Phases | | | | | 2 | | | 4 | | | | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | 48.0 | | | 28.0 | | | | |
| Effective Green, g (s) | | | | | 48.0 | | | 28.0 | | | | |
| Actuated g/C Ratio | | | | | 0.53 | | | 0.31 | | | | |
| Clearance Time (s) | | | | | 7.0 | | | 7.0 | | | | |
| Vehicle Extension (s) | | | | | 3.0 | | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | 1833 | | | 1069 | | | | |
| v/s Ratio Prot | | | | | c0.31 | | | c0.25 | | | | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | 0.58 | | | 0.81 | | | | |
| Uniform Delay, d ₁ | | | | | 14.2 | | | 28.5 | | | | |
| Progression Factor | | | | | 1.11 | | | 1.00 | | | | |
| Incremental Delay, d ₂ | | | | | 1.1 | | | 4.6 | | | | |
| Delay (s) | | | | | 17.0 | | | 33.1 | | | | |
| Level of Service | | | | | B | | | C | | | | |
| Approach Delay (s) | | 0.0 | | | 17.0 | | | 33.1 | | | 0.0 | |
| Approach LOS | | A | | | B | | | C | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 24.2 | | | | | HCM 2000 Level of Service | | | C | |
| HCM 2000 Volume to Capacity ratio | | | 0.67 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | | | Sum of lost time (s) | | 14.0 | | |
| Intersection Capacity Utilization | | | 63.4% | | | | | ICU Level of Service | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
16: Horizon Dr

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | |
|-----------------------------------|------|------|--------|------|---------------------------|------|------|-------|------|------|------|------|--|
| Lane Configurations | | | | | ↑↑ | | | ↑↑ | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 1556 | 0 | 0 | 745 | 0 | 0 | 0 | 0 | |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 1556 | 0 | 0 | 745 | 0 | 0 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.0 | | | 7.0 | | | | | |
| Lane Util. Factor | | | | | 0.95 | | | 0.95 | | | | | |
| Frt | | | | | 1.00 | | | 1.00 | | | | | |
| Flt Protected | | | | | 1.00 | | | 1.00 | | | | | |
| Satd. Flow (prot) | | | | | 3343 | | | 3343 | | | | | |
| Flt Permitted | | | | | 1.00 | | | 1.00 | | | | | |
| Satd. Flow (perm) | | | | | 3343 | | | 3343 | | | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 1691 | 0 | 0 | 810 | 0 | 0 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 1691 | 0 | 0 | 810 | 0 | 0 | 0 | 0 | |
| Turn Type | | | | | NA | | | NA | | | | | |
| Protected Phases | | | | | 2 | | | 4 | | | | | |
| Permitted Phases | | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | 38.0 | | | 38.0 | | | | | |
| Effective Green, g (s) | | | | | 38.0 | | | 38.0 | | | | | |
| Actuated g/C Ratio | | | | | 0.42 | | | 0.42 | | | | | |
| Clearance Time (s) | | | | | 7.0 | | | 7.0 | | | | | |
| Vehicle Extension (s) | | | | | 3.0 | | | 3.0 | | | | | |
| Lane Grp Cap (vph) | | | | | 1411 | | | 1411 | | | | | |
| v/s Ratio Prot | | | | | c0.51 | | | c0.24 | | | | | |
| v/s Ratio Perm | | | | | | | | | | | | | |
| v/c Ratio | | | | | 1.20 | | | 0.57 | | | | | |
| Uniform Delay, d1 | | | | | 26.0 | | | 19.8 | | | | | |
| Progression Factor | | | | | 1.20 | | | 1.00 | | | | | |
| Incremental Delay, d2 | | | | | 94.9 | | | 0.6 | | | | | |
| Delay (s) | | | | | 126.1 | | | 20.4 | | | | | |
| Level of Service | | | | | F | | | C | | | | | |
| Approach Delay (s) | | 0.0 | | | 126.1 | | | 20.4 | | | 0.0 | | |
| Approach LOS | | A | | | F | | | C | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 91.9 | | HCM 2000 Level of Service | | | | F | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.89 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | | | | 14.0 | | | | |
| Intersection Capacity Utilization | | | 100.7% | | ICU Level of Service | | | | G | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 17: Horizon Dr & US 95 SB Ramps

| Movement | WBL | WBR | SBL | SBR | NEL | NER |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | 0 | 0 | 2 | 0 | 0 | 2 |
| Traffic Volume (vph) | 0 | 0 | 999 | 0 | 0 | 794 |
| Future Volume (vph) | 0 | 0 | 999 | 0 | 0 | 794 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 0.97 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 0.95 | | | 1.00 |
| Satd. Flow (prot) | | | 3335 | | | 2707 |
| Flt Permitted | | | 0.95 | | | 1.00 |
| Satd. Flow (perm) | | | 3335 | | | 2707 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1086 | 0 | 0 | 863 |
| RTOR Reduction (vph) | 0 | 0 | 323 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 763 | 0 | 0 | 863 |
| Turn Type | | | Prot | | | custom |
| Protected Phases | | | 2! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 48.0 | | | 90.0 |
| Effective Green, g (s) | | | 48.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.53 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 1778 | | | 2707 |
| v/s Ratio Prot | | | c0.23 | | | 0.32 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.43 | | | 0.32 |
| Uniform Delay, d1 | | | 12.7 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.8 | | | 0.2 |
| Delay (s) | | | 13.5 | | | 0.2 |
| Level of Service | | | B | | | A |
| Approach Delay (s) | 0.0 | | 13.5 | | 0.2 | |
| Approach LOS | A | | B | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 7.6 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.42 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 37.2% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
 17: Horizon Dr & US 95 SB Ramps



| Movement | WBL | WBR | SBL | SBR | NEL | NER |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | | | TT | | | TT |
| Traffic Volume (vph) | 0 | 0 | 1363 | 0 | 0 | 745 |
| Future Volume (vph) | 0 | 0 | 1363 | 0 | 0 | 745 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 0.97 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 0.95 | | | 1.00 |
| Satd. Flow (prot) | | | 3242 | | | 2632 |
| Flt Permitted | | | 0.95 | | | 1.00 |
| Satd. Flow (perm) | | | 3242 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1482 | 0 | 0 | 810 |
| RTOR Reduction (vph) | 0 | 0 | 429 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 1053 | 0 | 0 | 810 |
| Turn Type | | | Prot | | | custom |
| Protected Phases | | | 2! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 38.0 | | | 90.0 |
| Effective Green, g (s) | | | 38.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.42 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 1368 | | | 2632 |
| v/s Ratio Prot | | | c0.32 | | | 0.31 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.77 | | | 0.31 |
| Uniform Delay, d1 | | | 22.3 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 4.2 | | | 0.3 |
| Delay (s) | | | 26.5 | | | 0.3 |
| Level of Service | | | C | | | A |
| Approach Delay (s) | 0.0 | | 26.5 | | 0.3 | |
| Approach LOS | A | | C | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 17.2 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.57 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 47.6% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
18: Horizon Dr

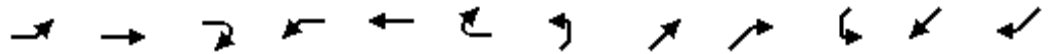
Henderson Interchange
Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | |
|-----------------------------------|------|-------|-------|------|------|------|------|------|------|------|-------|---------------------------|------|
| Lane Configurations | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | |
| Traffic Volume (vph) | 0 | 820 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1477 | 0 | |
| Future Volume (vph) | 0 | 820 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1477 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | 7.0 | | | | | | | | | 7.0 | | |
| Lane Util. Factor | | 0.95 | | | | | | | | | 0.95 | | |
| Frt | | 1.00 | | | | | | | | | 1.00 | | |
| Flt Protected | | 1.00 | | | | | | | | | 1.00 | | |
| Satd. Flow (prot) | | 3438 | | | | | | | | | 3438 | | |
| Flt Permitted | | 1.00 | | | | | | | | | 1.00 | | |
| Satd. Flow (perm) | | 3438 | | | | | | | | | 3438 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 891 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1605 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 891 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1605 | 0 | |
| Turn Type | | NA | | | | | | | | | NA | | |
| Protected Phases | | 4 | | | | | | | | | 2 | | |
| Permitted Phases | | | | | | | | | | | | | |
| Actuated Green, G (s) | | 28.0 | | | | | | | | | 48.0 | | |
| Effective Green, g (s) | | 28.0 | | | | | | | | | 48.0 | | |
| Actuated g/C Ratio | | 0.31 | | | | | | | | | 0.53 | | |
| Clearance Time (s) | | 7.0 | | | | | | | | | 7.0 | | |
| Vehicle Extension (s) | | 3.0 | | | | | | | | | 3.0 | | |
| Lane Grp Cap (vph) | | 1069 | | | | | | | | | 1833 | | |
| v/s Ratio Prot | | c0.26 | | | | | | | | | c0.47 | | |
| v/s Ratio Perm | | | | | | | | | | | | | |
| v/c Ratio | | 0.83 | | | | | | | | | 0.88 | | |
| Uniform Delay, d1 | | 28.8 | | | | | | | | | 18.4 | | |
| Progression Factor | | 1.12 | | | | | | | | | 1.00 | | |
| Incremental Delay, d2 | | 5.3 | | | | | | | | | 6.2 | | |
| Delay (s) | | 37.5 | | | | | | | | | 24.6 | | |
| Level of Service | | D | | | | | | | | | C | | |
| Approach Delay (s) | | 37.5 | | | 0.0 | | | 0.0 | | | 24.6 | | |
| Approach LOS | | D | | | A | | | A | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 29.2 | | | | | | | | | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | | | 0.86 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | | | | | | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 79.9% | | | | | | | | | ICU Level of Service | D |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
18: Horizon Dr

Henderson Interchange
Feasibility Study



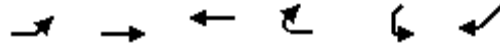
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | |
|-----------------------------------|------|-------|-------|------|------|------|------|------|------|------|-------|---------------------------|------|
| Lane Configurations | | ↑↑ | | | | | | | | | ↑↑ | | |
| Traffic Volume (vph) | 0 | 1489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1619 | 0 | |
| Future Volume (vph) | 0 | 1489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1619 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | 7.0 | | | | | | | | | 7.0 | | |
| Lane Util. Factor | | 0.95 | | | | | | | | | 0.95 | | |
| Frt | | 1.00 | | | | | | | | | 1.00 | | |
| Flt Protected | | 1.00 | | | | | | | | | 1.00 | | |
| Satd. Flow (prot) | | 3343 | | | | | | | | | 3343 | | |
| Flt Permitted | | 1.00 | | | | | | | | | 1.00 | | |
| Satd. Flow (perm) | | 3343 | | | | | | | | | 3343 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 1618 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1760 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 1618 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1760 | 0 | |
| Turn Type | | NA | | | | | | | | | NA | | |
| Protected Phases | | 4 | | | | | | | | | 2 | | |
| Permitted Phases | | | | | | | | | | | | | |
| Actuated Green, G (s) | | 38.0 | | | | | | | | | 38.0 | | |
| Effective Green, g (s) | | 38.0 | | | | | | | | | 38.0 | | |
| Actuated g/C Ratio | | 0.42 | | | | | | | | | 0.42 | | |
| Clearance Time (s) | | 7.0 | | | | | | | | | 7.0 | | |
| Vehicle Extension (s) | | 3.0 | | | | | | | | | 3.0 | | |
| Lane Grp Cap (vph) | | 1411 | | | | | | | | | 1411 | | |
| v/s Ratio Prot | | c0.48 | | | | | | | | | c0.53 | | |
| v/s Ratio Perm | | | | | | | | | | | | | |
| v/c Ratio | | 1.15 | | | | | | | | | 1.25 | | |
| Uniform Delay, d1 | | 26.0 | | | | | | | | | 26.0 | | |
| Progression Factor | | 0.92 | | | | | | | | | 1.00 | | |
| Incremental Delay, d2 | | 73.1 | | | | | | | | | 117.4 | | |
| Delay (s) | | 97.0 | | | | | | | | | 143.4 | | |
| Level of Service | | F | | | | | | | | | F | | |
| Approach Delay (s) | | 97.0 | | | 0.0 | | | 0.0 | | | 143.4 | | |
| Approach LOS | | F | | | A | | | A | | | F | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 121.2 | | | | | | | | | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | | | 1.20 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | | | | | | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 96.5% | | | | | | | | | ICU Level of Service | F |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 19: Horizon Dr/US 95 NB Ramps

| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | 0 | 0 | 1 | 0 | 0 | 2 |
| Traffic Volume (vph) | 0 | 0 | 277 | 0 | 0 | 1477 |
| Future Volume (vph) | 0 | 0 | 277 | 0 | 0 | 1477 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 1.00 | | | 0.88 |
| Fr _t | | | 1.00 | | | 0.85 |
| Fl _t Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 1810 | | | 2707 |
| Fl _t Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 1810 | | | 2707 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 301 | 0 | 0 | 1605 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 301 | 0 | 0 | 1605 |
| Turn Type | | | NA | | | custom |
| Protected Phases | | | 4! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 28.0 | | | 90.0 |
| Effective Green, g (s) | | | 28.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.31 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 563 | | | 2707 |
| v/s Ratio Prot | | | 0.17 | | | 0.59 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.53 | | | 0.59 |
| Uniform Delay, d ₁ | | | 25.6 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d ₂ | | | 1.0 | | | 0.4 |
| Delay (s) | | | 26.6 | | | 0.4 |
| Level of Service | | | C | | | A |
| Approach Delay (s) | | 0.0 | 26.6 | | 0.4 | |
| Approach LOS | | A | C | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 4.6 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.70 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 27.2% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
 19: Horizon Dr/US 95 NB Ramps



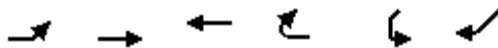
| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | | | ↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 0 | 329 | 0 | 0 | 1619 |
| Future Volume (vph) | 0 | 0 | 329 | 0 | 0 | 1619 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 1.00 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 1759 | | | 2632 |
| Flt Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 1759 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 358 | 0 | 0 | 1760 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 358 | 0 | 0 | 1760 |
| Turn Type | | | NA | | | custom |
| Protected Phases | | | 4! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 38.0 | | | 90.0 |
| Effective Green, g (s) | | | 38.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.42 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 742 | | | 2632 |
| v/s Ratio Prot | | | 0.20 | | | 0.67 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.48 | | | 0.67 |
| Uniform Delay, d1 | | | 18.9 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.5 | | | 0.1 |
| Delay (s) | | | 19.4 | | | 0.1 |
| Level of Service | | | B | | | A |
| Approach Delay (s) | | 0.0 | 19.4 | | 0.1 | |
| Approach LOS | | A | B | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.4 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.79 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 31.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
 20: Horizon Dr & US 95 SB Ramps

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|-------|------|---------------------------|-------|
| Lane Configurations | 0 | 0 | 2 | 0 | 0 | 2 |
| Traffic Volume (vph) | 0 | 0 | 986 | 0 | 0 | 771 |
| Future Volume (vph) | 0 | 0 | 986 | 0 | 0 | 771 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 4.0 | | | 7.0 |
| Lane Util. Factor | | | 0.95 | | | 0.88 |
| Fr _t | | | 1.00 | | | 0.85 |
| Fl _t Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 3438 | | | 2707 |
| Fl _t Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 3438 | | | 2707 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1072 | 0 | 0 | 838 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 1072 | 0 | 0 | 838 |
| Turn Type | | | NA | | | Prot |
| Protected Phases | | | Free! | | | 4! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 90.0 | | | 28.0 |
| Effective Green, g (s) | | | 90.0 | | | 28.0 |
| Actuated g/C Ratio | | | 1.00 | | | 0.31 |
| Clearance Time (s) | | | | | | 7.0 |
| Vehicle Extension (s) | | | | | | 3.0 |
| Lane Grp Cap (vph) | | | 3438 | | | 842 |
| v/s Ratio Prot | | | 0.31 | | | c0.31 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.31 | | | 1.00 |
| Uniform Delay, d ₁ | | | 0.0 | | | 30.9 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d ₂ | | | 0.2 | | | 29.6 |
| Delay (s) | | | 0.2 | | | 60.6 |
| Level of Service | | | A | | | E |
| Approach Delay (s) | | 0.0 | 0.2 | | 60.6 | |
| Approach LOS | | A | A | | E | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 26.7 | | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | | | 0.59 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 63.4% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
 20: Horizon Dr & US 95 SB Ramps



| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|--------|------|---------------------------|-------|
| Lane Configurations | | | ↑↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 0 | 1556 | 0 | 0 | 1387 |
| Future Volume (vph) | 0 | 0 | 1556 | 0 | 0 | 1387 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 4.0 | | | 7.0 |
| Lane Util. Factor | | | 0.95 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 3343 | | | 2632 |
| Flt Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 3343 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1691 | 0 | 0 | 1508 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 1691 | 0 | 0 | 1508 |
| Turn Type | | | NA | | | Prot |
| Protected Phases | | | Free! | | | 4! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 90.0 | | | 38.0 |
| Effective Green, g (s) | | | 90.0 | | | 38.0 |
| Actuated g/C Ratio | | | 1.00 | | | 0.42 |
| Clearance Time (s) | | | | | | 7.0 |
| Vehicle Extension (s) | | | | | | 3.0 |
| Lane Grp Cap (vph) | | | 3343 | | | 1111 |
| v/s Ratio Prot | | | 0.51 | | | c0.57 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.51 | | | 1.36 |
| Uniform Delay, d1 | | | 0.0 | | | 26.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.0 | | | 166.7 |
| Delay (s) | | | 0.0 | | | 192.7 |
| Level of Service | | | A | | | F |
| Approach Delay (s) | | 0.0 | 0.0 | | 192.7 | |
| Approach LOS | | A | A | | F | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 90.9 | | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | | | 0.98 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 100.7% | | ICU Level of Service | G |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM 6th Signalized Intersection Summary
 15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-------|------|--------|-------|-------|-------|-------|------|------|------|
| Lane Configurations | 1 | 3 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 1 |
| Traffic Volume (veh/h) | 181 | 3237 | 102 | 82 | 4167 | 170 | 408 | 24 | 119 | 95 | 20 | 25 |
| Future Volume (veh/h) | 181 | 3237 | 102 | 82 | 4167 | 170 | 408 | 24 | 119 | 95 | 20 | 25 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 197 | 3518 | 111 | 89 | 4529 | 185 | 443 | 26 | 129 | 103 | 22 | 27 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 219 | 1462 | 454 | 220 | 1459 | 453 | 317 | 61 | 52 | 309 | 61 | 52 |
| Arrive On Green | 0.13 | 0.29 | 0.29 | 0.13 | 0.29 | 0.29 | 0.09 | 0.03 | 0.03 | 0.09 | 0.03 | 0.03 |
| Sat Flow, veh/h | 1739 | 4985 | 1547 | 1739 | 4985 | 1547 | 3374 | 1826 | 1547 | 3374 | 1826 | 1547 |
| Grp Volume(v), veh/h | 197 | 3518 | 111 | 89 | 4529 | 185 | 443 | 26 | 129 | 103 | 22 | 27 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1662 | 1547 | 1739 | 1662 | 1547 | 1687 | 1826 | 1547 | 1687 | 1826 | 1547 |
| Q Serve(g_s), s | 16.8 | 44.0 | 8.2 | 7.1 | 43.9 | 4.9 | 14.1 | 2.1 | 2.5 | 4.3 | 1.8 | 2.6 |
| Cycle Q Clear(g_c), s | 16.8 | 44.0 | 8.2 | 7.1 | 43.9 | 4.9 | 14.1 | 2.1 | 2.5 | 4.3 | 1.8 | 2.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 219 | 1462 | 454 | 220 | 1459 | 453 | 317 | 61 | 52 | 309 | 61 | 52 |
| V/C Ratio(X) | 0.90 | 2.41 | 0.24 | 0.41 | 3.10 | 0.41 | 1.40 | 0.42 | 2.48 | 0.33 | 0.36 | 0.52 |
| Avail Cap(c_a), veh/h | 241 | 1462 | 454 | 234 | 1459 | 453 | 317 | 555 | 470 | 335 | 559 | 473 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 64.7 | 53.0 | 40.3 | 60.3 | 53.0 | 4.9 | 67.9 | 71.1 | 17.6 | 63.8 | 70.9 | 71.3 |
| Incr Delay (d2), s/veh | 31.4 | 634.8 | 0.3 | 1.2 | 948.8 | 2.7 | 196.8 | 4.6 | 678.5 | 0.6 | 3.6 | 8.0 |
| 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 | 9.2 | 103.8 | 3.1 | 3.2 | 146.0 | 5.3 | 14.7 | 1.1 | 11.7 | 1.9 | 0.9 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 96.1 | 687.8 | 40.6 | 61.5 | 1001.9 | 7.7 | 264.7 | 75.6 | 696.1 | 64.4 | 74.5 | 79.3 |
| LnGrp LOS | F | F | D | E | F | A | F | E | F | E | E | E |
| Approach Vol, veh/h | | 3826 | | | 4803 | | | 598 | | | 152 | |
| Approach Delay, s/veh | | 638.6 | | | 946.2 | | | 349.5 | | | 68.5 | |
| Approach LOS | | F | | | F | | | F | | | E | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 21.0 | 11.1 | 25.8 | 50.0 | 20.7 | 11.4 | 25.1 | 50.7 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6 | * 6.9 | * 6.4 | * 6.2 | * 6.8 | | | | |
| Max Green Setting (Gmax), s | * 14 | 45.9 | * 20 | * 44 | * 15 | * 46 | * 21 | * 44 | | | | |
| Max Q Clear Time (g_c+I1), s | 16.1 | 4.6 | 9.1 | 46.0 | 6.3 | 4.5 | 18.8 | 45.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.2 | 0.1 | 0.0 | 0.2 | 0.6 | 0.1 | 0.0 | | | | |

Intersection Summary

| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 768.4 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 54 | 3221 | 385 | 212 | 3868 | 160 | 491 | 40 | 230 | 197 | 69 | 104 |
| Future Volume (veh/h) | 54 | 3221 | 385 | 212 | 3868 | 160 | 491 | 40 | 230 | 197 | 69 | 104 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 59 | 3501 | 418 | 230 | 4204 | 174 | 534 | 43 | 250 | 214 | 75 | 113 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 223 | 1641 | 510 | 214 | 1638 | 509 | 665 | 323 | 273 | 256 | 105 | 89 |
| Arrive On Green | 0.13 | 0.34 | 0.34 | 0.13 | 0.34 | 0.34 | 0.20 | 0.18 | 0.18 | 0.08 | 0.06 | 0.06 |
| Sat Flow, veh/h | 1697 | 4863 | 1510 | 1697 | 4863 | 1510 | 3291 | 1781 | 1510 | 3291 | 1781 | 1510 |
| Grp Volume(v), veh/h | 59 | 3501 | 418 | 230 | 4204 | 174 | 534 | 43 | 250 | 214 | 75 | 113 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 1621 | 1510 | 1697 | 1621 | 1510 | 1646 | 1781 | 1510 | 1646 | 1781 | 1510 |
| Q Serve(g_s), s | 5.0 | 54.0 | 23.9 | 20.2 | 53.9 | 13.8 | 24.7 | 3.2 | 26.0 | 10.3 | 6.6 | 6.2 |
| Cycle Q Clear(g_c), s | 5.0 | 54.0 | 23.9 | 20.2 | 53.9 | 13.8 | 24.7 | 3.2 | 26.0 | 10.3 | 6.6 | 6.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 223 | 1641 | 510 | 214 | 1638 | 509 | 665 | 323 | 273 | 256 | 105 | 89 |
| V/C Ratio(X) | 0.26 | 2.13 | 0.82 | 1.07 | 2.57 | 0.34 | 0.80 | 0.13 | 0.91 | 0.84 | 0.72 | 1.27 |
| Avail Cap(c_a), veh/h | 223 | 1641 | 510 | 214 | 1638 | 509 | 665 | 508 | 430 | 307 | 511 | 433 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 62.6 | 53.0 | 16.8 | 69.9 | 53.0 | 39.8 | 60.8 | 55.0 | 64.3 | 72.8 | 74.0 | 32.8 |
| Incr Delay (d2), s/veh | 0.6 | 511.9 | 10.3 | 82.4 | 706.5 | 1.8 | 10.0 | 0.2 | 16.8 | 15.6 | 8.8 | 141.3 |
| 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 | 2.2 | 99.1 | 9.4 | 13.6 | 128.5 | 5.4 | 11.2 | 1.5 | 11.1 | 4.9 | 3.3 | 7.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 63.2 | 564.9 | 27.1 | 152.3 | 759.6 | 41.6 | 70.8 | 55.2 | 81.1 | 88.4 | 82.8 | 174.1 |
| LnGrp LOS | E | F | C | F | F | D | E | E | F | F | F | F |
| Approach Vol, veh/h | | 3978 | | | 4608 | | | 827 | | | 402 | |
| Approach Delay, s/veh | | 500.9 | | | 702.1 | | | 73.1 | | | 111.5 | |
| Approach LOS | | F | | | F | | | E | | | F | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 39.2 | 15.5 | 27.0 | 60.2 | 19.3 | 35.4 | 27.2 | 60.0 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6.2 | * 6.9 | * 6.4 | * 6.2 | * 6.1 | | | | |
| Max Green Setting (Gmax), s | * 14 | 45.9 | * 20 | * 54 | * 15 | * 46 | * 21 | * 54 | | | | |
| Max Q Clear Time (g_c+I1), s | 26.7 | 8.6 | 22.2 | 56.0 | 12.3 | 28.0 | 7.0 | 55.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.8 | 0.0 | 0.0 | 0.2 | 1.0 | 0.1 | 0.0 | | | | |

Intersection Summary

| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 543.4 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-------|------|-------|-------|-------|-------|------|------|------|------|
| Lane Configurations | 1 | 3 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 1 |
| Traffic Volume (veh/h) | 181 | 3237 | 102 | 82 | 4167 | 170 | 408 | 24 | 119 | 95 | 20 | 25 |
| Future Volume (veh/h) | 181 | 3237 | 102 | 82 | 4167 | 170 | 408 | 24 | 119 | 95 | 20 | 25 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 197 | 3518 | 111 | 89 | 4529 | 185 | 443 | 26 | 129 | 103 | 22 | 27 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 217 | 2679 | 968 | 218 | 2676 | 831 | 297 | 57 | 242 | 291 | 57 | 241 |
| Arrive On Green | 0.12 | 0.54 | 0.54 | 0.13 | 0.54 | 0.54 | 0.09 | 0.03 | 0.03 | 0.09 | 0.03 | 0.03 |
| Sat Flow, veh/h | 1739 | 4985 | 1547 | 1739 | 4985 | 1547 | 3374 | 1826 | 1547 | 3374 | 1826 | 1547 |
| Grp Volume(v), veh/h | 197 | 3518 | 111 | 89 | 4529 | 185 | 443 | 26 | 129 | 103 | 22 | 27 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1662 | 1547 | 1739 | 1662 | 1547 | 1687 | 1826 | 1547 | 1687 | 1826 | 1547 |
| Q Serve(g_s), s | 17.9 | 86.0 | 0.0 | 7.5 | 85.9 | 5.1 | 14.1 | 2.2 | 0.0 | 4.6 | 1.9 | 1.6 |
| Cycle Q Clear(g_c), s | 17.9 | 86.0 | 0.0 | 7.5 | 85.9 | 5.1 | 14.1 | 2.2 | 0.0 | 4.6 | 1.9 | 1.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 217 | 2679 | 968 | 218 | 2676 | 831 | 297 | 57 | 242 | 291 | 57 | 241 |
| V/C Ratio(X) | 0.91 | 1.31 | 0.11 | 0.41 | 1.69 | 0.22 | 1.49 | 0.46 | 0.53 | 0.35 | 0.39 | 0.11 |
| Avail Cap(c_a), veh/h | 226 | 2679 | 968 | 220 | 2676 | 831 | 297 | 178 | 345 | 291 | 159 | 327 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 69.1 | 37.0 | 12.1 | 64.5 | 37.1 | 5.0 | 73.0 | 76.2 | 62.1 | 68.9 | 76.0 | 28.7 |
| Incr Delay (d2), s/veh | 35.5 | 143.6 | 0.1 | 1.2 | 313.2 | 0.6 | 237.6 | 5.6 | 1.8 | 0.7 | 4.2 | 0.2 |
| 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 | 10.0 | 68.5 | 1.6 | 3.4 | 110.4 | 3.5 | 15.9 | 1.1 | 4.9 | 2.0 | 1.0 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 104.6 | 180.6 | 12.1 | 65.7 | 350.2 | 5.6 | 310.6 | 81.7 | 63.9 | 69.6 | 80.2 | 28.9 |
| LnGrp LOS | F | F | B | E | F | A | F | F | E | E | F | C |
| Approach Vol, veh/h | | 3826 | | | 4803 | | | 598 | | | 152 | |
| Approach Delay, s/veh | | 171.8 | | | 331.7 | | | 247.4 | | | 63.9 | |
| Approach LOS | | F | | | F | | | F | | | E | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 21.0 | 11.1 | 26.8 | 92.0 | 20.7 | 11.4 | 26.1 | 92.7 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6 | * 6.9 | * 6.4 | * 6.2 | * 6.8 | | | | |
| Max Green Setting (Gmax), s | * 14 | 13.9 | * 20 | * 86 | * 13 | * 16 | * 21 | * 86 | | | | |
| Max Q Clear Time (g_c+I1), s | 16.1 | 3.9 | 9.5 | 88.0 | 6.6 | 4.2 | 19.9 | 87.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.4 | 0.0 | 0.0 | | | | |

Intersection Summary































| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 256.8 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|--|---|---|--|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |  |    |  |   |  |  |   |  |  |
| Traffic Volume (veh/h) | 54 | 3221 | 385 | 212 | 3868 | 160 | 491 | 40 | 230 | 197 | 69 | 104 |
| Future Volume (veh/h) | 54 | 3221 | 385 | 212 | 3868 | 160 | 491 | 40 | 230 | 197 | 69 | 104 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 59 | 3501 | 418 | 230 | 4204 | 174 | 534 | 43 | 250 | 214 | 75 | 113 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 204 | 2691 | 996 | 195 | 2688 | 834 | 351 | 150 | 300 | 255 | 101 | 267 |
| Arrive On Green | 0.12 | 0.55 | 0.55 | 0.11 | 0.55 | 0.55 | 0.11 | 0.08 | 0.08 | 0.08 | 0.06 | 0.06 |
| Sat Flow, veh/h | 1697 | 4863 | 1510 | 1697 | 4863 | 1510 | 3291 | 1781 | 1510 | 3291 | 1781 | 1510 |
| Grp Volume(v), veh/h | 59 | 3501 | 418 | 230 | 4204 | 174 | 534 | 43 | 250 | 214 | 75 | 113 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 1621 | 1510 | 1697 | 1621 | 1510 | 1646 | 1781 | 1510 | 1646 | 1781 | 1510 |
| Q Serve(g_s), s | 4.8 | 83.0 | 9.2 | 17.2 | 82.9 | 8.7 | 16.0 | 3.4 | 12.6 | 9.6 | 6.2 | 0.0 |
| Cycle Q Clear(g_c), s | 4.8 | 83.0 | 9.2 | 17.2 | 82.9 | 8.7 | 16.0 | 3.4 | 12.6 | 9.6 | 6.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 204 | 2691 | 996 | 195 | 2688 | 834 | 351 | 150 | 300 | 255 | 101 | 267 |
| V/C Ratio(X) | 0.29 | 1.30 | 0.42 | 1.18 | 1.56 | 0.21 | 1.52 | 0.29 | 0.83 | 0.84 | 0.74 | 0.42 |
| Avail Cap(c_a), veh/h | 204 | 2691 | 996 | 195 | 2688 | 834 | 351 | 150 | 300 | 261 | 165 | 321 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.2 | 33.5 | 3.6 | 66.4 | 33.5 | 17.0 | 67.0 | 64.5 | 37.0 | 68.2 | 69.6 | 54.9 |
| Incr Delay (d2), s/veh | 0.8 | 138.3 | 0.3 | 122.3 | 255.7 | 0.6 | 248.3 | 1.0 | 17.9 | 20.4 | 10.0 | 1.1 |
| 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 | 2.1 | 64.7 | 3.3 | 13.9 | 93.8 | 3.1 | 18.8 | 1.6 | 9.4 | 4.8 | 3.1 | 3.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.0 | 171.8 | 3.9 | 188.7 | 289.2 | 17.5 | 315.3 | 65.5 | 54.9 | 88.6 | 79.7 | 56.0 |
| LnGrp LOS | E | F | A | F | F | B | F | E | D | F | E | E |
| Approach Vol, veh/h | | 3978 | | | 4608 | | | 827 | | | 402 | |
| Approach Delay, s/veh | | 152.5 | | | 274.0 | | | 223.6 | | | 77.8 | |
| Approach LOS | | F | | | F | | | F | | | E | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.9 | 14.6 | 24.0 | 89.2 | 18.5 | 19.0 | 24.2 | 89.0 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6.2 | * 6.9 | * 6.4 | * 6.2 | * 6.1 | | | | |
| Max Green Setting (Gmax), s | * 10 | 13.9 | * 17 | * 83 | * 12 | * 13 | * 18 | * 83 | | | | |
| Max Q Clear Time (g_c+I1), s | 18.0 | 8.2 | 19.2 | 85.0 | 11.6 | 14.6 | 6.8 | 84.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 212.5 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary
 1: US 95 SB Ramps & Sunset Rd

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|-------|-------|------|------|-----|-------|-----|------|------|------|
| Lane Configurations | | ↑↑↑ | ↑↑ | ↑ | ↑↑↑ | | | | | ↑ | ↑ | ↑↑ |
| Traffic Volume (veh/h) | 0 | 611 | 379 | 196 | 1004 | 0 | 0 | 0 | 0 | 510 | 0 | 460 |
| Future Volume (veh/h) | 0 | 611 | 379 | 196 | 1004 | 0 | 0 | 0 | 0 | 510 | 0 | 460 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1826 | 1826 | 1826 | 1826 | 0 | | | | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 0 | 664 | 412 | 213 | 1091 | 0 | | | | 554 | 0 | 500 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 5 | 5 | 5 | 5 | 0 | | | | 5 | 5 | 5 |
| Cap, veh/h | 0 | 1940 | 1060 | 486 | 3529 | 0 | | | | 688 | 0 | 612 |
| Arrive On Green | 0.00 | 0.39 | 0.39 | 0.28 | 0.71 | 0.00 | | | | 0.20 | 0.00 | 0.20 |
| Sat Flow, veh/h | 0 | 5149 | 2723 | 1739 | 5149 | 0 | | | | 3478 | 0 | 3095 |
| Grp Volume(v), veh/h | 0 | 664 | 412 | 213 | 1091 | 0 | | | | 554 | 0 | 500 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1662 | 1362 | 1739 | 1662 | 0 | | | | 1739 | 0 | 1547 |
| Q Serve(g_s), s | 0.0 | 13.1 | 15.2 | 14.1 | 11.5 | 0.0 | | | | 21.3 | 0.0 | 21.6 |
| Cycle Q Clear(g_c), s | 0.0 | 13.1 | 15.2 | 14.1 | 11.5 | 0.0 | | | | 21.3 | 0.0 | 21.6 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 1940 | 1060 | 486 | 3529 | 0 | | | | 688 | 0 | 612 |
| V/C Ratio(X) | 0.00 | 0.34 | 0.39 | 0.44 | 0.31 | 0.00 | | | | 0.81 | 0.00 | 0.82 |
| Avail Cap(c_a), veh/h | 0 | 1940 | 1060 | 486 | 3529 | 0 | | | | 1083 | 0 | 964 |
| HCM Platoon Ratio | 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 | 0.89 | 0.89 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 30.1 | 30.8 | 41.4 | 7.6 | 0.0 | | | | 53.6 | 0.0 | 53.7 |
| Incr Delay (d2), s/veh | 0.0 | 0.5 | 1.1 | 0.6 | 0.0 | 0.0 | | | | 2.5 | 0.0 | 3.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 5.2 | 5.1 | 6.0 | 3.6 | 0.0 | | | | 9.3 | 0.0 | 8.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 30.6 | 31.8 | 42.0 | 7.7 | 0.0 | | | | 56.1 | 0.0 | 56.8 |
| LnGrp LOS | A | C | C | D | A | A | | | | E | A | E |
| Approach Vol, veh/h | | 1076 | | | 1304 | | | | | | 1054 | |
| Approach Delay, s/veh | | 31.1 | | | 13.3 | | | | | | 56.4 | |
| Approach LOS | | C | | | B | | | | | | E | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 34.1 | 45.9 | 60.0 | | | | 105.9 | | | | |
| Change Period (Y+Rc), s | | 6.4 | * 6.8 | * 5.5 | | | | 6.8 | | | | |
| Max Green Setting (Gmax), s | | 43.6 | * 24 | * 55 | | | | 83.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 23.6 | 16.1 | 17.2 | | | | 13.5 | | | | |
| Green Ext Time (p_c), s | | 4.0 | 0.3 | 6.8 | | | | 9.1 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 32.1 |
| HCM 6th LOS | C |

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 1: US 95 SB Ramps & Sunset Rd

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|-------|------|------|-----|------|-----|------|------|------|
| Lane Configurations | | ↑↑↑ | ↗↗ | ↖ | ↑↑↑ | | | | | ↘ | ↖ | ↗↗ |
| Traffic Volume (veh/h) | 0 | 1252 | 838 | 195 | 1175 | 0 | 0 | 0 | 0 | 340 | 0 | 560 |
| Future Volume (veh/h) | 0 | 1252 | 838 | 195 | 1175 | 0 | 0 | 0 | 0 | 340 | 0 | 560 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1781 | 1781 | 1781 | 1781 | 0 | | | | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 0 | 1361 | 911 | 212 | 1277 | 0 | | | | 370 | 0 | 609 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 8 | 8 | 8 | 8 | 0 | | | | 8 | 8 | 8 |
| Cap, veh/h | 0 | 2026 | 1107 | 252 | 3113 | 0 | | | | 662 | 0 | 589 |
| Arrive On Green | 0.00 | 0.42 | 0.42 | 0.15 | 0.64 | 0.00 | | | | 0.19 | 0.00 | 0.19 |
| Sat Flow, veh/h | 0 | 5024 | 2657 | 1697 | 5024 | 0 | | | | 3393 | 0 | 3019 |
| Grp Volume(v), veh/h | 0 | 1361 | 911 | 212 | 1277 | 0 | | | | 370 | 0 | 609 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1621 | 1329 | 1697 | 1621 | 0 | | | | 1697 | 0 | 1510 |
| Q Serve(g_s), s | 0.0 | 18.1 | 24.4 | 9.7 | 10.3 | 0.0 | | | | 7.9 | 0.0 | 15.6 |
| Cycle Q Clear(g_c), s | 0.0 | 18.1 | 24.4 | 9.7 | 10.3 | 0.0 | | | | 7.9 | 0.0 | 15.6 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 2026 | 1107 | 252 | 3113 | 0 | | | | 662 | 0 | 589 |
| V/C Ratio(X) | 0.00 | 0.67 | 0.82 | 0.84 | 0.41 | 0.00 | | | | 0.56 | 0.00 | 1.03 |
| Avail Cap(c_a), veh/h | 0 | 2026 | 1107 | 361 | 3113 | 0 | | | | 662 | 0 | 589 |
| HCM Platoon Ratio | 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 | 0.77 | 0.77 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 18.9 | 20.7 | 33.1 | 7.0 | 0.0 | | | | 29.1 | 0.0 | 32.2 |
| Incr Delay (d2), s/veh | 0.0 | 0.9 | 5.1 | 9.2 | 0.3 | 0.0 | | | | 3.4 | 0.0 | 46.2 |
| Initial Q Delay(d3),s/veh | 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 | 6.1 | 7.3 | 4.4 | 2.6 | 0.0 | | | | 3.3 | 0.0 | 9.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 19.8 | 25.9 | 42.3 | 7.3 | 0.0 | | | | 32.5 | 0.0 | 78.4 |
| LnGrp LOS | A | B | C | D | A | A | | | | C | A | F |
| Approach Vol, veh/h | | 2272 | | | 1489 | | | | | | 979 | |
| Approach Delay, s/veh | | 22.2 | | | 12.3 | | | | | | 61.1 | |
| Approach LOS | | C | | | B | | | | | | E | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 22.0 | 17.9 | 40.1 | | | | 58.0 | | | | |
| Change Period (Y+Rc), s | | 6.4 | 6.0 | * 6.8 | | | | 6.8 | | | | |
| Max Green Setting (Gmax), s | | 15.6 | 17.0 | * 30 | | | | 51.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 17.6 | 11.7 | 26.4 | | | | 12.3 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.3 | 2.7 | | | | 10.9 | | | | |

Intersection Summary





























| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 27.1 |
| HCM 6th LOS | C |

Notes

- User approved volume balancing among the lanes for turning movement.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.




























HCM 6th Signalized Intersection Summary
2: US 95 NB Ramps & Sunset Rd

Henderson Interchange
Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    | | |    |   |   |   |   | | | |
| Traffic Volume (veh/h) | 240 | 810 | 0 | 0 | 1003 | 677 | 548 | 0 | 452 | 0 | 0 | 0 |
| Future Volume (veh/h) | 240 | 810 | 0 | 0 | 1003 | 677 | 548 | 0 | 452 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 0 | 0 | 1826 | 1826 | 1826 | 1826 | 1826 | | | |
| Adj Flow Rate, veh/h | 261 | 880 | 0 | 0 | 1090 | 0 | 596 | 0 | 0 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 5 | 5 | | | |
| Cap, veh/h | 319 | 3921 | 0 | 0 | 3271 | | 741 | 0 | | | | |
| Arrive On Green | 0.19 | 1.00 | 0.00 | 0.00 | 0.66 | 0.00 | 0.14 | 0.00 | 0.00 | | | |
| Sat Flow, veh/h | 3374 | 5149 | 0 | 0 | 5149 | 2723 | 5217 | 0 | 1547 | | | |
| Grp Volume(v), veh/h | 261 | 880 | 0 | 0 | 1090 | 0 | 596 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1687 | 1662 | 0 | 0 | 1662 | 1362 | 1739 | 0 | 1547 | | | |
| Q Serve(g_s), s | 10.4 | 0.0 | 0.0 | 0.0 | 13.5 | 0.0 | 15.5 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 10.4 | 0.0 | 0.0 | 0.0 | 13.5 | 0.0 | 15.5 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 319 | 3921 | 0 | 0 | 3271 | | 741 | 0 | | | | |
| V/C Ratio(X) | 0.82 | 0.22 | 0.00 | 0.00 | 0.33 | | 0.80 | 0.00 | | | | |
| Avail Cap(c_a), veh/h | 964 | 3921 | 0 | 0 | 3271 | | 1677 | 0 | | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.92 | 0.92 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 55.6 | 0.0 | 0.0 | 0.0 | 10.6 | 0.0 | 58.2 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 4.8 | 0.1 | 0.0 | 0.0 | 0.3 | 0.0 | 2.1 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 4.2 | 0.0 | 0.0 | 0.0 | 4.7 | 0.0 | 7.0 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 60.3 | 0.1 | 0.0 | 0.0 | 10.9 | 0.0 | 60.3 | 0.0 | 0.0 | | | |
| LnGrp LOS | E | A | A | A | B | | E | A | | | | |
| Approach Vol, veh/h | | 1141 | | | 1090 | A | | 596 | A | | | |
| Approach Delay, s/veh | | 13.9 | | | 10.9 | | | 60.3 | | | | |
| Approach LOS | | B | | | B | | | E | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 115.1 | | 24.9 | 18.2 | 96.9 | | | | |
| Change Period (Y+Rc), s | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | | |
| Max Green Setting (Gmax), s | | | | 85.0 | | 45.0 | 40.0 | 40.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 2.0 | | 17.5 | 12.4 | 15.5 | | | | |
| Green Ext Time (p_c), s | | | | 6.8 | | 2.4 | 0.9 | 7.7 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 22.5 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary
2: US 95 NB Ramps & Sunset Rd

Henderson Interchange
Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    | | |    |   |   |   |  | | | |
| Traffic Volume (veh/h) | 476 | 1004 | 0 | 0 | 751 | 519 | 789 | 2 | 389 | 0 | 0 | 0 |
| Future Volume (veh/h) | 476 | 1004 | 0 | 0 | 751 | 519 | 789 | 2 | 389 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 0 | 0 | 1781 | 1781 | 1781 | 1781 | 1781 | | | |
| Adj Flow Rate, veh/h | 517 | 1091 | 0 | 0 | 816 | 0 | 859 | 0 | 0 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 8 | 8 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | | | |
| Cap, veh/h | 622 | 3245 | 0 | 0 | 2022 | | 1057 | 0 | | | | |
| Arrive On Green | 0.19 | 0.67 | 0.00 | 0.00 | 0.42 | 0.00 | 0.21 | 0.00 | 0.00 | | | |
| Sat Flow, veh/h | 3291 | 5024 | 0 | 0 | 5024 | 2657 | 5090 | 0 | 1510 | | | |
| Grp Volume(v), veh/h | 517 | 1091 | 0 | 0 | 816 | 0 | 859 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1621 | 0 | 0 | 1621 | 1329 | 1697 | 0 | 1510 | | | |
| Q Serve(g_s), s | 12.1 | 7.7 | 0.0 | 0.0 | 9.4 | 0.0 | 12.9 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 12.1 | 7.7 | 0.0 | 0.0 | 9.4 | 0.0 | 12.9 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 622 | 3245 | 0 | 0 | 2022 | | 1057 | 0 | | | | |
| V/C Ratio(X) | 0.83 | 0.34 | 0.00 | 0.00 | 0.40 | | 0.81 | 0.00 | | | | |
| Avail Cap(c_a), veh/h | 823 | 3245 | 0 | 0 | 2022 | | 1272 | 0 | | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.66 | 0.66 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 31.2 | 5.7 | 0.0 | 0.0 | 16.4 | 0.0 | 30.2 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 3.7 | 0.2 | 0.0 | 0.0 | 0.6 | 0.0 | 3.5 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 4.8 | 1.9 | 0.0 | 0.0 | 3.2 | 0.0 | 5.4 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 35.0 | 5.9 | 0.0 | 0.0 | 17.0 | 0.0 | 33.7 | 0.0 | 0.0 | | | |
| LnGrp LOS | C | A | A | A | B | | C | A | | | | |
| Approach Vol, veh/h | | 1608 | | | 816 | A | | 859 | A | | | |
| Approach Delay, s/veh | | 15.2 | | | 17.0 | | | 33.7 | | | | |
| Approach LOS | | B | | | B | | | C | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 58.4 | | 21.6 | 20.1 | 38.3 | | | | |
| Change Period (Y+Rc), s | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | | |
| Max Green Setting (Gmax), s | | | | 50.0 | | 20.0 | 20.0 | 25.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 9.7 | | 14.9 | 14.1 | 11.4 | | | | |
| Green Ext Time (p_c), s | | | | 8.8 | | 1.8 | 1.0 | 4.3 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 20.5 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary
3: Auto Show Drive & Gibson Rd



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 705 | 315 | 539 | 531 | 298 | 782 |
| Future Volume (veh/h) | 705 | 315 | 539 | 531 | 298 | 782 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 766 | 342 | 586 | 577 | 324 | 850 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 793 | 364 | 1704 | 760 | 448 | 2279 |
| Arrive On Green | 0.23 | 0.23 | 0.49 | 0.49 | 0.11 | 0.66 |
| Sat Flow, veh/h | 3374 | 1547 | 3561 | 1547 | 1739 | 3561 |
| Grp Volume(v), veh/h | 766 | 342 | 586 | 577 | 324 | 850 |
| Grp Sat Flow(s),veh/h/ln | 1687 | 1547 | 1735 | 1547 | 1739 | 1735 |
| Q Serve(g_s), s | 22.5 | 21.7 | 10.3 | 30.3 | 8.7 | 11.1 |
| Cycle Q Clear(g_c), s | 22.5 | 21.7 | 10.3 | 30.3 | 8.7 | 11.1 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 793 | 364 | 1704 | 760 | 448 | 2279 |
| V/C Ratio(X) | 0.97 | 0.94 | 0.34 | 0.76 | 0.72 | 0.37 |
| Avail Cap(c_a), veh/h | 793 | 364 | 1704 | 760 | 524 | 2279 |
| HCM Platoon Ratio | 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 |
| Uniform Delay (d), s/veh | 37.9 | 37.6 | 15.6 | 20.7 | 11.2 | 7.8 |
| Incr Delay (d2), s/veh | 23.9 | 32.2 | 0.6 | 7.0 | 4.1 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 11.6 | 20.0 | 3.9 | 11.4 | 3.3 | 3.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 61.8 | 69.8 | 16.1 | 27.7 | 15.3 | 8.3 |
| LnGrp LOS | E | E | B | C | B | A |
| Approach Vol, veh/h | 1108 | | 1163 | | | 1174 |
| Approach Delay, s/veh | 64.2 | | 21.9 | | | 10.2 |
| Approach LOS | E | | C | | | B |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
| Phs Duration (G+Y+Rc), s | | 71.0 | | 29.0 | 16.6 | 54.4 |
| Change Period (Y+Rc), s | | * 5.3 | | 5.5 | 5.5 | * 5.3 |
| Max Green Setting (Gmax), s | | * 66 | | 23.5 | 15.5 | * 45 |
| Max Q Clear Time (g_c+I1), s | | 13.1 | | 24.5 | 10.7 | 32.3 |
| Green Ext Time (p_c), s | | 6.8 | | 0.0 | 0.4 | 4.9 |

Intersection Summary













| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 31.5 |
| HCM 6th LOS | C |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
3: Auto Show Drive & Gibson Rd

| |  |  |  |  |  |  |
|--|---|---|---|---|---|---|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 660 | 380 | 907 | 633 | 290 | 760 |
| Future Volume (veh/h) | 660 | 380 | 907 | 633 | 290 | 760 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 717 | 413 | 986 | 688 | 315 | 826 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 872 | 400 | 1504 | 671 | 350 | 2122 |
| Arrive On Green | 0.26 | 0.26 | 0.44 | 0.44 | 0.13 | 0.63 |
| Sat Flow, veh/h | 3291 | 1510 | 3474 | 1510 | 1697 | 3474 |
| Grp Volume(v), veh/h | 717 | 413 | 986 | 688 | 315 | 826 |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1510 | 1692 | 1510 | 1697 | 1692 |
| Q Serve(g_s), s | 20.5 | 26.5 | 22.8 | 44.4 | 10.3 | 12.0 |
| Cycle Q Clear(g_c), s | 20.5 | 26.5 | 22.8 | 44.4 | 10.3 | 12.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 872 | 400 | 1504 | 671 | 350 | 2122 |
| V/C Ratio(X) | 0.82 | 1.03 | 0.66 | 1.03 | 0.90 | 0.39 |
| Avail Cap(c_a), veh/h | 872 | 400 | 1504 | 671 | 447 | 2122 |
| HCM Platoon Ratio | 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 |
| Uniform Delay (d), s/veh | 34.5 | 36.8 | 21.8 | 27.8 | 21.1 | 9.2 |
| Incr Delay (d2), s/veh | 6.4 | 53.6 | 2.2 | 41.5 | 18.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.7 | 25.2 | 8.9 | 22.3 | 5.3 | 4.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 40.9 | 90.3 | 24.0 | 69.3 | 39.0 | 9.7 |
| LnGrp LOS | D | F | C | F | D | A |
| Approach Vol, veh/h | 1130 | | 1674 | | | 1141 |
| Approach Delay, s/veh | 59.0 | | 42.6 | | | 17.8 |
| Approach LOS | E | | D | | | B |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
| Phs Duration (G+Y+Rc), s | | 68.0 | | 32.0 | 18.3 | 49.7 |
| Change Period (Y+Rc), s | | * 5.3 | | 5.5 | 5.5 | * 5.3 |
| Max Green Setting (Gmax), s | | * 63 | | 26.5 | 18.5 | * 39 |
| Max Q Clear Time (g_c+I1), s | | 14.0 | | 28.5 | 12.3 | 46.4 |
| Green Ext Time (p_c), s | | 6.5 | | 0.0 | 0.5 | 0.0 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 40.1 | | | |
| HCM 6th LOS | | | D | | | |
| Notes | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | |

HCM 6th Signalized Intersection Summary
4: Auto Show Drive & I-515 SB Ramps

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|------|------|------|-----|-------|-----|------|------|------|
| Lane Configurations | | ↑↑↑ | | ↖ | ↑↑ | | | | | | ↖ | ↖ |
| Traffic Volume (veh/h) | 0 | 693 | 127 | 121 | 439 | 0 | 0 | 0 | 0 | 220 | 0 | 610 |
| Future Volume (veh/h) | 0 | 693 | 127 | 121 | 439 | 0 | 0 | 0 | 0 | 220 | 0 | 610 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1826 | 1826 | 1826 | 1826 | 0 | | | | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 0 | 753 | 0 | 132 | 477 | 0 | | | | 239 | 0 | 663 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 5 | 5 | 5 | 5 | 0 | | | | 5 | 5 | 5 |
| Cap, veh/h | 0 | 1336 | | 173 | 1513 | 0 | | | | 748 | 0 | 665 |
| Arrive On Green | 0.00 | 0.27 | 0.00 | 0.10 | 0.44 | 0.00 | | | | 0.43 | 0.00 | 0.43 |
| Sat Flow, veh/h | 0 | 5313 | 0 | 1739 | 3561 | 0 | | | | 1739 | 0 | 1547 |
| Grp Volume(v), veh/h | 0 | 753 | 0 | 132 | 477 | 0 | | | | 239 | 0 | 663 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1662 | 0 | 1739 | 1735 | 0 | | | | 1739 | 0 | 1547 |
| Q Serve(g_s), s | 0.0 | 10.4 | 0.0 | 5.9 | 7.2 | 0.0 | | | | 7.3 | 0.0 | 34.2 |
| Cycle Q Clear(g_c), s | 0.0 | 10.4 | 0.0 | 5.9 | 7.2 | 0.0 | | | | 7.3 | 0.0 | 34.2 |
| Prop In Lane | 0.00 | | 0.00 | 1.00 | | 0.00 | | | | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 1336 | | 173 | 1513 | 0 | | | | 748 | 0 | 665 |
| V/C Ratio(X) | 0.00 | 0.56 | | 0.76 | 0.32 | 0.00 | | | | 0.32 | 0.00 | 1.00 |
| Avail Cap(c_a), veh/h | 0 | 1336 | | 207 | 1522 | 0 | | | | 748 | 0 | 665 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.80 | 0.00 | 0.95 | 0.95 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 25.2 | 0.0 | 35.1 | 14.7 | 0.0 | | | | 15.1 | 0.0 | 22.7 |
| Incr Delay (d2), s/veh | 0.0 | 1.4 | 0.0 | 12.4 | 0.1 | 0.0 | | | | 0.2 | 0.0 | 33.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 4.1 | 0.0 | 3.0 | 2.6 | 0.0 | | | | 2.6 | 0.0 | 17.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 26.6 | 0.0 | 47.5 | 14.9 | 0.0 | | | | 15.3 | 0.0 | 56.7 |
| LnGrp LOS | A | C | | D | B | A | | | | B | A | E |
| Approach Vol, veh/h | | 753 | A | | 609 | | | | | | 902 | |
| Approach Delay, s/veh | | 26.6 | | | 21.9 | | | | | | 45.7 | |
| Approach LOS | | C | | | C | | | | | | D | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 40.0 | 13.5 | 26.5 | | | | 40.0 | | | | |
| Change Period (Y+Rc), s | | * 5.6 | 5.5 | 5.1 | | | | * 5.1 | | | | |
| Max Green Setting (Gmax), s | | * 34 | 9.5 | 19.9 | | | | * 35 | | | | |
| Max Q Clear Time (g_c+I1), s | | 36.2 | 7.9 | 12.4 | | | | 9.2 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 2.9 | | | | 3.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 33.0 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
4: Auto Show Drive & I-515 SB Ramps

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|------|------|------|-----|-------|-----|------|------|------|
| Lane Configurations | | ↑↑↑ | | ↖ | ↑↑ | | | | | | ↖ | ↖ |
| Traffic Volume (veh/h) | 0 | 769 | 241 | 337 | 583 | 0 | 0 | 0 | 0 | 76 | 11 | 463 |
| Future Volume (veh/h) | 0 | 769 | 241 | 337 | 583 | 0 | 0 | 0 | 0 | 76 | 11 | 463 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1781 | 1781 | 1781 | 1781 | 0 | | | | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 0 | 836 | 0 | 366 | 634 | 0 | | | | 83 | 12 | 503 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 8 | 8 | 8 | 8 | 0 | | | | 8 | 8 | 8 |
| Cap, veh/h | 0 | 1008 | | 401 | 1719 | 0 | | | | 527 | 76 | 534 |
| Arrive On Green | 0.00 | 0.21 | 0.00 | 0.24 | 0.51 | 0.00 | | | | 0.35 | 0.35 | 0.35 |
| Sat Flow, veh/h | 0 | 5184 | 0 | 1697 | 3474 | 0 | | | | 1491 | 216 | 1510 |
| Grp Volume(v), veh/h | 0 | 836 | 0 | 366 | 634 | 0 | | | | 95 | 0 | 503 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1621 | 0 | 1697 | 1692 | 0 | | | | 1707 | 0 | 1510 |
| Q Serve(g_s), s | 0.0 | 13.2 | 0.0 | 16.8 | 9.1 | 0.0 | | | | 3.0 | 0.0 | 25.8 |
| Cycle Q Clear(g_c), s | 0.0 | 13.2 | 0.0 | 16.8 | 9.1 | 0.0 | | | | 3.0 | 0.0 | 25.8 |
| Prop In Lane | 0.00 | | 0.00 | 1.00 | | 0.00 | | | | 0.87 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 1008 | | 401 | 1719 | 0 | | | | 603 | 0 | 534 |
| V/C Ratio(X) | 0.00 | 0.83 | | 0.91 | 0.37 | 0.00 | | | | 0.16 | 0.00 | 0.94 |
| Avail Cap(c_a), veh/h | 0 | 1088 | | 401 | 1719 | 0 | | | | 627 | 0 | 555 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.63 | 0.00 | 0.49 | 0.49 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 30.3 | 0.0 | 29.7 | 11.9 | 0.0 | | | | 17.7 | 0.0 | 25.1 |
| Incr Delay (d2), s/veh | 0.0 | 5.1 | 0.0 | 14.4 | 0.1 | 0.0 | | | | 0.1 | 0.0 | 24.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 5.4 | 0.0 | 8.1 | 3.1 | 0.0 | | | | 1.1 | 0.0 | 12.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 35.5 | 0.0 | 44.1 | 12.0 | 0.0 | | | | 17.8 | 0.0 | 49.4 |
| LnGrp LOS | A | D | | D | B | A | | | | B | A | D |
| Approach Vol, veh/h | | 836 | A | | 1000 | | | | | | 598 | |
| Approach Delay, s/veh | | 35.5 | | | 23.7 | | | | | | 44.4 | |
| Approach LOS | | D | | | C | | | | | | D | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 33.9 | 24.4 | 21.7 | | | | 46.1 | | | | |
| Change Period (Y+Rc), s | | * 5.6 | 5.5 | 5.1 | | | | * 5.5 | | | | |
| Max Green Setting (Gmax), s | | * 29 | 16.5 | 17.9 | | | | * 40 | | | | |
| Max Q Clear Time (g_c+I1), s | | 27.8 | 18.8 | 15.2 | | | | 11.1 | | | | |
| Green Ext Time (p_c), s | | 0.4 | 0.0 | 1.4 | | | | 4.6 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 32.8 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 5: I-515 NB Ramps & Auto Show Drive

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--|------|------|------|------|------|------|-------|------|------|-----|-----|-----|
| Lane Configurations | ↘ | ↑↑ | | | ↑↑↑ | | | ↑ | ↗ | | | |
| Traffic Volume (veh/h) | 333 | 437 | 0 | 0 | 332 | 98 | 278 | 0 | 113 | 0 | 0 | 0 |
| Future Volume (veh/h) | 333 | 437 | 0 | 0 | 332 | 98 | 278 | 0 | 113 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 0 | 0 | 1826 | 1826 | 1826 | 1826 | 1826 | | | |
| Adj Flow Rate, veh/h | 362 | 475 | 0 | 0 | 361 | 107 | 302 | 0 | 123 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 5 | 5 | | | |
| Cap, veh/h | 798 | 2269 | 0 | 0 | 526 | 149 | 369 | 0 | 328 | | | |
| Arrive On Green | 0.31 | 0.44 | 0.00 | 0.00 | 0.14 | 0.14 | 0.21 | 0.00 | 0.21 | | | |
| Sat Flow, veh/h | 1739 | 3561 | 0 | 0 | 4022 | 1094 | 1739 | 0 | 1547 | | | |
| Grp Volume(v), veh/h | 362 | 475 | 0 | 0 | 309 | 159 | 302 | 0 | 123 | | | |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1735 | 0 | 0 | 1662 | 1629 | 1739 | 0 | 1547 | | | |
| Q Serve(g_s), s | 13.4 | 6.8 | 0.0 | 0.0 | 7.1 | 7.5 | 13.2 | 0.0 | 5.4 | | | |
| Cycle Q Clear(g_c), s | 13.4 | 6.8 | 0.0 | 0.0 | 7.1 | 7.5 | 13.2 | 0.0 | 5.4 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.67 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 798 | 2269 | 0 | 0 | 453 | 222 | 369 | 0 | 328 | | | |
| V/C Ratio(X) | 0.45 | 0.21 | 0.00 | 0.00 | 0.68 | 0.72 | 0.82 | 0.00 | 0.37 | | | |
| Avail Cap(c_a), veh/h | 798 | 2269 | 0 | 0 | 636 | 312 | 639 | 0 | 569 | | | |
| HCM Platoon Ratio | 0.67 | 0.67 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.79 | 0.79 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 19.6 | 9.7 | 0.0 | 0.0 | 32.9 | 33.1 | 30.0 | 0.0 | 27.0 | | | |
| Incr Delay (d2), s/veh | 0.3 | 0.2 | 0.0 | 0.0 | 1.8 | 4.6 | 4.5 | 0.0 | 0.7 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 5.7 | 2.3 | 0.0 | 0.0 | 2.8 | 3.1 | 5.6 | 0.0 | 4.9 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 19.9 | 9.8 | 0.0 | 0.0 | 34.7 | 37.7 | 34.5 | 0.0 | 27.7 | | | |
| LnGrp LOS | B | A | A | A | C | D | C | A | C | | | |
| Approach Vol, veh/h | | 837 | | | 468 | | | 425 | | | | |
| Approach Delay, s/veh | | 14.2 | | | 35.7 | | | 32.6 | | | | |
| Approach LOS | | B | | | D | | | C | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 57.4 | | 22.6 | 41.8 | 15.6 | | | | |
| Change Period (Y+Rc), s | | | | 5.1 | | 5.6 | * 5.1 | 4.7 | | | | |
| Max Green Setting (Gmax), s | | | | 39.9 | | 29.4 | * 20 | 15.3 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 8.8 | | 15.2 | 15.4 | 9.5 | | | | |
| Green Ext Time (p_c), s | | | | 3.3 | | 1.7 | 0.5 | 1.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 24.5 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary

5: I-515 NB Ramps & Auto Show Drive

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|------|------|------|------|-------|------|-----|-----|-----|
| Lane Configurations | ↘ | ↑↑ | | | ↑↑↑ | | | ↑ | ↘ | | | |
| Traffic Volume (veh/h) | 489 | 391 | 0 | 0 | 510 | 210 | 500 | 0 | 110 | 0 | 0 | 0 |
| Future Volume (veh/h) | 489 | 391 | 0 | 0 | 510 | 210 | 500 | 0 | 110 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 0 | 0 | 1781 | 1781 | 1781 | 1781 | 1781 | | | |
| Adj Flow Rate, veh/h | 532 | 425 | 0 | 0 | 554 | 228 | 543 | 0 | 120 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 8 | 8 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | | | |
| Cap, veh/h | 422 | 1762 | 0 | 0 | 710 | 284 | 587 | 0 | 522 | | | |
| Arrive On Green | 0.42 | 0.87 | 0.00 | 0.00 | 0.21 | 0.21 | 0.35 | 0.00 | 0.35 | | | |
| Sat Flow, veh/h | 1697 | 3474 | 0 | 0 | 3573 | 1365 | 1697 | 0 | 1510 | | | |
| Grp Volume(v), veh/h | 532 | 425 | 0 | 0 | 525 | 257 | 543 | 0 | 120 | | | |
| Grp Sat Flow(s),veh/h/ln | 1697 | 1692 | 0 | 0 | 1621 | 1536 | 1697 | 0 | 1510 | | | |
| Q Serve(g_s), s | 19.9 | 1.7 | 0.0 | 0.0 | 12.3 | 12.7 | 24.6 | 0.0 | 4.5 | | | |
| Cycle Q Clear(g_c), s | 19.9 | 1.7 | 0.0 | 0.0 | 12.3 | 12.7 | 24.6 | 0.0 | 4.5 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.89 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 422 | 1762 | 0 | 0 | 674 | 319 | 587 | 0 | 522 | | | |
| V/C Ratio(X) | 1.26 | 0.24 | 0.00 | 0.00 | 0.78 | 0.80 | 0.93 | 0.00 | 0.23 | | | |
| Avail Cap(c_a), veh/h | 422 | 1762 | 0 | 0 | 674 | 319 | 624 | 0 | 555 | | | |
| HCM Platoon Ratio | 1.67 | 1.67 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.59 | 0.59 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 23.4 | 2.6 | 0.0 | 0.0 | 29.9 | 30.1 | 25.2 | 0.0 | 18.6 | | | |
| Incr Delay (d2), s/veh | 128.4 | 0.2 | 0.0 | 0.0 | 5.8 | 13.8 | 19.3 | 0.0 | 0.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 20.7 | 0.5 | 0.0 | 0.0 | 5.1 | 5.7 | 11.9 | 0.0 | 4.4 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 151.8 | 2.8 | 0.0 | 0.0 | 35.8 | 43.9 | 44.5 | 0.0 | 18.8 | | | |
| LnGrp LOS | F | A | A | A | D | D | D | A | B | | | |
| Approach Vol, veh/h | | 957 | | | 782 | | | 663 | | | | |
| Approach Delay, s/veh | | 85.6 | | | 38.4 | | | 39.8 | | | | |
| Approach LOS | | F | | | D | | | D | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 46.7 | | 33.3 | 25.0 | 21.7 | | | | |
| Change Period (Y+Rc), s | | | | 5.1 | | 5.6 | 5.1 | * 5.1 | | | | |
| Max Green Setting (Gmax), s | | | | 39.9 | | 29.4 | 19.9 | * 15 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 3.7 | | 26.6 | 21.9 | 14.7 | | | | |
| Green Ext Time (p_c), s | | | | 3.0 | | 1.0 | 0.0 | 0.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 57.6 |
| HCM 6th LOS | E |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 25.9 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↑ | ↗ | ↖ | ↗ | | ↖ | ↕ | | ↖ | ↕ | |
| Traffic Vol, veh/h | 384 | 22 | 84 | 0 | 53 | 8 | 38 | 130 | 2 | 3 | 85 | 312 |
| Future Vol, veh/h | 384 | 22 | 84 | 0 | 53 | 8 | 38 | 130 | 2 | 3 | 85 | 312 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 417 | 24 | 91 | 0 | 58 | 9 | 41 | 141 | 2 | 3 | 92 | 339 |
| Number of Lanes | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|----------------------------|------|------|------|------|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 3 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 3 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 2 | 3 |
| HCM Control Delay | 35.5 | 12.2 | 12.5 | 21.9 |
| HCM LOS | E | B | B | C |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | SBLn1 | SBLn2 | SBLn3 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 96% | 0% | 100% | 0% | 100% | 87% | 0% | 100% | 8% |
| Vol Right, % | 0% | 0% | 4% | 0% | 0% | 100% | 0% | 13% | 0% | 0% | 92% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 38 | 87 | 45 | 384 | 22 | 84 | 0 | 61 | 3 | 57 | 340 |
| LT Vol | 38 | 0 | 0 | 384 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Through Vol | 0 | 87 | 43 | 0 | 22 | 0 | 0 | 53 | 0 | 57 | 28 |
| RT Vol | 0 | 0 | 2 | 0 | 0 | 84 | 0 | 8 | 0 | 0 | 312 |
| Lane Flow Rate | 41 | 94 | 49 | 417 | 24 | 91 | 0 | 66 | 3 | 62 | 370 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.098 | 0.211 | 0.11 | 0.869 | 0.046 | 0.159 | 0 | 0.148 | 0.007 | 0.127 | 0.697 |
| Departure Headway (Hd) | 8.571 | 8.058 | 8.026 | 7.491 | 6.989 | 6.287 | 8.11 | 8.018 | 7.952 | 7.442 | 6.787 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 418 | 446 | 446 | 484 | 512 | 571 | 0 | 447 | 450 | 482 | 533 |
| Service Time | 6.327 | 5.813 | 5.781 | 5.233 | 4.731 | 4.028 | 5.865 | 5.773 | 5.696 | 5.186 | 4.53 |
| HCM Lane V/C Ratio | 0.098 | 0.211 | 0.11 | 0.862 | 0.047 | 0.159 | 0 | 0.148 | 0.007 | 0.129 | 0.694 |
| HCM Control Delay | 12.3 | 13 | 11.8 | 42.5 | 10.1 | 10.2 | 10.9 | 12.2 | 10.8 | 11.3 | 23.8 |
| HCM Lane LOS | B | B | B | E | B | B | N | B | B | B | C |
| HCM 95th-tile Q | 0.3 | 0.8 | 0.4 | 9.2 | 0.1 | 0.6 | 0 | 0.5 | 0 | 0.4 | 5.4 |

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 71.3 |
| Intersection LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↘ | ↑ | ↗ | ↘ | ↗ | | ↘ | ↕ | | ↘ | ↕ | |
| Traffic Vol, veh/h | 294 | 30 | 156 | 0 | 70 | 0 | 95 | 92 | 4 | 6 | 218 | 516 |
| Future Vol, veh/h | 294 | 30 | 156 | 0 | 70 | 0 | 95 | 92 | 4 | 6 | 218 | 516 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Mvmt Flow | 320 | 33 | 170 | 0 | 76 | 0 | 103 | 100 | 4 | 7 | 237 | 561 |
| Number of Lanes | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|----------------------------|------|------|------|-------|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 3 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 3 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 2 | 3 |
| HCM Control Delay | 25.6 | 14.3 | 14.5 | 120.9 |
| HCM LOS | D | B | B | F |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | SBLn1 | SBLn2 | SBLn3 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 88% | 0% | 100% | 0% | 100% | 100% | 0% | 100% | 12% |
| Vol Right, % | 0% | 0% | 12% | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 88% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 95 | 61 | 35 | 294 | 30 | 156 | 0 | 70 | 6 | 145 | 589 |
| LT Vol | 95 | 0 | 0 | 294 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| Through Vol | 0 | 61 | 31 | 0 | 30 | 0 | 0 | 70 | 0 | 145 | 73 |
| RT Vol | 0 | 0 | 4 | 0 | 0 | 156 | 0 | 0 | 0 | 0 | 516 |
| Lane Flow Rate | 103 | 67 | 38 | 320 | 33 | 170 | 0 | 76 | 7 | 158 | 640 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.262 | 0.16 | 0.089 | 0.743 | 0.071 | 0.338 | 0 | 0.189 | 0.015 | 0.335 | 1.244 |
| Departure Headway (Hd) | 9.705 | 9.187 | 9.103 | 8.828 | 8.323 | 7.616 | 9.391 | 9.391 | 8.138 | 7.627 | 7 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 373 | 393 | 396 | 412 | 433 | 475 | 0 | 384 | 437 | 469 | 518 |
| Service Time | 7.405 | 6.887 | 6.803 | 6.528 | 6.023 | 5.316 | 7.091 | 7.091 | 5.936 | 5.425 | 4.798 |
| HCM Lane V/C Ratio | 0.276 | 0.17 | 0.096 | 0.777 | 0.076 | 0.358 | 0 | 0.198 | 0.016 | 0.337 | 1.236 |
| HCM Control Delay | 15.8 | 13.6 | 12.7 | 33 | 11.7 | 14.2 | 12.1 | 14.3 | 11.1 | 14.3 | 148.3 |
| HCM Lane LOS | C | B | B | D | B | B | N | B | B | B | F |
| HCM 95th-tile Q | 1 | 0.6 | 0.3 | 6 | 0.2 | 1.5 | 0 | 0.7 | 0 | 1.5 | 25 |

HCM 6th Signalized Intersection Summary
 9: Stephanie St & I-215 WB Ramps

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|------|-------|-----|------|------|-------|-------|------|------|------|------|------|
| Lane Configurations | | | | ↙ | ↖ | ↗ | ↘↙ | ↘↖ | | | ↗↘ | ↗ |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 577 | 17 | 446 | 811 | 1339 | 0 | 0 | 296 | 614 |
| Future Volume (veh/h) | 0 | 0 | 0 | 577 | 17 | 446 | 811 | 1339 | 0 | 0 | 296 | 614 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | | | | 1826 | 1826 | 1826 | 1826 | 1826 | 0 | 0 | 1826 | 1826 |
| Adj Flow Rate, veh/h | | | | 640 | 0 | 0 | 882 | 1455 | 0 | 0 | 322 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 5 | 5 |
| Cap, veh/h | | | | 747 | 0 | | 670 | 3012 | 0 | 0 | 1588 | |
| Arrive On Green | | | | 0.21 | 0.00 | 0.00 | 0.20 | 0.60 | 0.00 | 0.00 | 0.32 | 0.00 |
| Sat Flow, veh/h | | | | 3478 | 0 | 1547 | 3374 | 5149 | 0 | 0 | 5149 | 1547 |
| Grp Volume(v), veh/h | | | | 640 | 0 | 0 | 882 | 1455 | 0 | 0 | 322 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1739 | 0 | 1547 | 1687 | 1662 | 0 | 0 | 1662 | 1547 |
| Q Serve(g_s), s | | | | 12.4 | 0.0 | 0.0 | 13.9 | 11.4 | 0.0 | 0.0 | 3.3 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 12.4 | 0.0 | 0.0 | 13.9 | 11.4 | 0.0 | 0.0 | 3.3 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 747 | 0 | | 670 | 3012 | 0 | 0 | 1588 | |
| V/C Ratio(X) | | | | 0.86 | 0.00 | | 1.32 | 0.48 | 0.00 | 0.00 | 0.20 | |
| Avail Cap(c_a), veh/h | | | | 830 | 0 | | 670 | 3012 | 0 | 0 | 1588 | |
| HCM Platoon Ratio | | | | 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 | 0.00 | 0.25 | 0.25 | 0.00 | 0.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | | | | 26.5 | 0.0 | 0.0 | 28.0 | 7.7 | 0.0 | 0.0 | 17.4 | 0.0 |
| Incr Delay (d2), s/veh | | | | 8.2 | 0.0 | 0.0 | 145.2 | 0.1 | 0.0 | 0.0 | 0.3 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 5.4 | 0.0 | 0.0 | 18.5 | 2.9 | 0.0 | 0.0 | 1.2 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 34.7 | 0.0 | 0.0 | 173.3 | 7.9 | 0.0 | 0.0 | 17.7 | 0.0 |
| LnGrp LOS | | | | C | A | | F | A | A | A | B | |
| Approach Vol, veh/h | | | | | 640 | A | | 2337 | | | 322 | A |
| Approach Delay, s/veh | | | | | 34.7 | | | 70.3 | | | 17.7 | |
| Approach LOS | | | | | C | | | E | | | B | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 20.0 | 27.7 | | | | 47.7 | | 21.3 | | | | |
| Change Period (Y+Rc), s | 6.1 | * 5.4 | | | | * 5.4 | | 6.3 | | | | |
| Max Green Setting (Gmax), s | 13.9 | * 22 | | | | * 42 | | 16.7 | | | | |
| Max Q Clear Time (g_c+I1), s | 15.9 | 5.3 | | | | 13.4 | | 14.4 | | | | |
| Green Ext Time (p_c), s | 0.0 | 1.7 | | | | 11.7 | | 0.6 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 58.2 | | | | | | | | |
| HCM 6th LOS | | | | E | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |
| Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary

9: Stephanie St & I-215 WB Ramps

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|-----|------|------|-------|-------|------|------|------|------|------|
| Lane Configurations | | | | ↙ | ↖ | ↗ | ↘↙ | ↘↖ | | | ↗↘ | ↗ |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 501 | 5 | 324 | 463 | 1437 | 0 | 0 | 931 | 1549 |
| Future Volume (veh/h) | 0 | 0 | 0 | 501 | 5 | 324 | 463 | 1437 | 0 | 0 | 931 | 1549 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | | | | 1781 | 1781 | 1781 | 1781 | 1781 | 0 | 0 | 1781 | 1781 |
| Adj Flow Rate, veh/h | | | | 549 | 0 | 0 | 503 | 1562 | 0 | 0 | 1012 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 8 | 8 | 8 | 8 | 8 | 0 | 0 | 8 | 8 |
| Cap, veh/h | | | | 617 | 0 | | 506 | 3179 | 0 | 0 | 2289 | |
| Arrive On Green | | | | 0.18 | 0.00 | 0.00 | 0.05 | 0.22 | 0.00 | 0.00 | 0.47 | 0.00 |
| Sat Flow, veh/h | | | | 3393 | 0 | 1510 | 3291 | 5024 | 0 | 0 | 5024 | 1510 |
| Grp Volume(v), veh/h | | | | 549 | 0 | 0 | 503 | 1562 | 0 | 0 | 1012 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1697 | 0 | 1510 | 1646 | 1621 | 0 | 0 | 1621 | 1510 |
| Q Serve(g_s), s | | | | 25.3 | 0.0 | 0.0 | 24.4 | 45.1 | 0.0 | 0.0 | 22.3 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 25.3 | 0.0 | 0.0 | 24.4 | 45.1 | 0.0 | 0.0 | 22.3 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 617 | 0 | | 506 | 3179 | 0 | 0 | 2289 | |
| V/C Ratio(X) | | | | 0.89 | 0.00 | | 0.99 | 0.49 | 0.00 | 0.00 | 0.44 | |
| Avail Cap(c_a), veh/h | | | | 927 | 0 | | 506 | 3179 | 0 | 0 | 2289 | |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 0.00 | 0.58 | 0.58 | 0.00 | 0.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | | | | 63.9 | 0.0 | 0.0 | 75.9 | 39.4 | 0.0 | 0.0 | 28.3 | 0.0 |
| Incr Delay (d2), s/veh | | | | 7.4 | 0.0 | 0.0 | 28.9 | 0.3 | 0.0 | 0.0 | 0.6 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 11.4 | 0.0 | 0.0 | 12.9 | 19.7 | 0.0 | 0.0 | 8.6 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 71.4 | 0.0 | 0.0 | 104.8 | 39.7 | 0.0 | 0.0 | 28.9 | 0.0 |
| LnGrp LOS | | | | E | A | | F | D | A | A | C | |
| Approach Vol, veh/h | | | | | 549 | A | | 2065 | | | 1012 | A |
| Approach Delay, s/veh | | | | | 71.4 | | | 55.6 | | | 28.9 | |
| Approach LOS | | | | | E | | | E | | | C | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 30.7 | 80.0 | | | | 110.7 | | 35.4 | | | | |
| Change Period (Y+Rc), s | * 6.1 | 4.7 | | | | * 6.1 | | 6.3 | | | | |
| Max Green Setting (Gmax), s | * 24 | 75.3 | | | | * 1E2 | | 43.7 | | | | |
| Max Q Clear Time (g_c+I1), s | 26.4 | 24.3 | | | | 47.1 | | 27.3 | | | | |
| Green Ext Time (p_c), s | 0.0 | 8.1 | | | | 16.1 | | 1.8 | | | | |

Intersection Summary

HCM 6th Ctrl Delay 50.5
 HCM 6th LOS D

Notes

























User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.




























HCM 6th Signalized Intersection Summary
 10: Stephanie St & I-215 EB Ramps

Henderson Interchange
 Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|--|---|---|--|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  | | | | |    |  |   |    | |
| Traffic Volume (veh/h) | 1060 | 1 | 409 | 0 | 0 | 0 | 0 | 1209 | 711 | 190 | 820 | 0 |
| Future Volume (veh/h) | 1060 | 1 | 409 | 0 | 0 | 0 | 0 | 1209 | 711 | 190 | 820 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 1826 | | | | 0 | 1826 | 1826 | 1826 | 1826 | 0 |
| Adj Flow Rate, veh/h | 1153 | 0 | 0 | | | | 0 | 1314 | 0 | 207 | 891 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | | | | 0 | 5 | 5 | 5 | 5 | 0 |
| Cap, veh/h | 825 | 0 | | | | | 0 | 2065 | | 299 | 2962 | 0 |
| Arrive On Green | 0.24 | 0.00 | 0.00 | | | | 0.00 | 0.41 | 0.00 | 0.09 | 0.59 | 0.00 |
| Sat Flow, veh/h | 3478 | 0 | 1547 | | | | 0 | 5149 | 1547 | 3374 | 5149 | 0 |
| Grp Volume(v), veh/h | 1153 | 0 | 0 | | | | 0 | 1314 | 0 | 207 | 891 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1547 | | | | 0 | 1662 | 1547 | 1687 | 1662 | 0 |
| Q Serve(g_s), s | 16.6 | 0.0 | 0.0 | | | | 0.0 | 14.7 | 0.0 | 4.2 | 6.2 | 0.0 |
| Cycle Q Clear(g_c), s | 16.6 | 0.0 | 0.0 | | | | 0.0 | 14.7 | 0.0 | 4.2 | 6.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 825 | 0 | | | | | 0 | 2065 | | 299 | 2962 | 0 |
| V/C Ratio(X) | 1.40 | 0.00 | | | | | 0.00 | 0.64 | | 0.69 | 0.30 | 0.00 |
| Avail Cap(c_a), veh/h | 825 | 0 | | | | | 0 | 2065 | | 414 | 2998 | 0 |
| HCM Platoon Ratio | 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 | 0.00 | | | | 0.00 | 1.00 | 0.00 | 0.85 | 0.85 | 0.00 |
| Uniform Delay (d), s/veh | 26.7 | 0.0 | 0.0 | | | | 0.0 | 16.3 | 0.0 | 31.0 | 7.0 | 0.0 |
| Incr Delay (d2), s/veh | 186.5 | 0.0 | 0.0 | | | | 0.0 | 0.7 | 0.0 | 2.4 | 0.2 | 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 |
| %ile BackOfQ(50%),veh/ln | 27.5 | 0.0 | 0.0 | | | | 0.0 | 4.8 | 0.0 | 1.7 | 1.6 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 213.2 | 0.0 | 0.0 | | | | 0.0 | 17.0 | 0.0 | 33.4 | 7.2 | 0.0 |
| LnGrp LOS | F | A | | | | | A | B | | C | A | A |
| Approach Vol, veh/h | | 1153 | A | | | | | 1314 | A | | 1098 | |
| Approach Delay, s/veh | | 213.2 | | | | | | 17.0 | | | 12.2 | |
| Approach LOS | | F | | | | | | B | | | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 47.0 | | 23.0 | 12.6 | 34.4 | | | | | | |
| Change Period (Y+Rc), s | | * 5.4 | | 6.4 | 6.4 | * 5.4 | | | | | | |
| Max Green Setting (Gmax), s | | * 42 | | 16.6 | 8.6 | * 27 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 8.2 | | 18.6 | 6.2 | 16.7 | | | | | | |
| Green Ext Time (p_c), s | | 6.5 | | 0.0 | 0.2 | 5.7 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 78.9 | | | | | | | | | |
| HCM 6th LOS | | | E | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |
| Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |























HCM 6th Signalized Intersection Summary
 10: Stephanie St & I-215 EB Ramps

Henderson Interchange
 Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|--|---|---|--|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  | | | | |    |  |   |    |    |
| Traffic Volume (veh/h) | 943 | 5 | 482 | 0 | 0 | 0 | 0 | 1149 | 1091 | 387 | 1233 | 0 |
| Future Volume (veh/h) | 943 | 5 | 482 | 0 | 0 | 0 | 0 | 1149 | 1091 | 387 | 1233 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 1781 | | | | 0 | 1781 | 1781 | 1781 | 1781 | 0 |
| Adj Flow Rate, veh/h | 1029 | 0 | 0 | | | | 0 | 1249 | 0 | 421 | 1340 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | | | | 0 | 8 | 8 | 8 | 8 | 0 |
| Cap, veh/h | 1113 | 0 | | | | | 0 | 1473 | | 403 | 2264 | 0 |
| Arrive On Green | 0.33 | 0.00 | 0.00 | | | | 0.00 | 0.30 | 0.00 | 0.12 | 0.47 | 0.00 |
| Sat Flow, veh/h | 3393 | 0 | 1510 | | | | 0 | 5024 | 1510 | 3291 | 5024 | 0 |
| Grp Volume(v), veh/h | 1029 | 0 | 0 | | | | 0 | 1249 | 0 | 421 | 1340 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1510 | | | | 0 | 1621 | 1510 | 1646 | 1621 | 0 |
| Q Serve(g_s), s | 46.8 | 0.0 | 0.0 | | | | 0.0 | 38.5 | 0.0 | 19.6 | 32.5 | 0.0 |
| Cycle Q Clear(g_c), s | 46.8 | 0.0 | 0.0 | | | | 0.0 | 38.5 | 0.0 | 19.6 | 32.5 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 1113 | 0 | | | | | 0 | 1473 | | 403 | 2264 | 0 |
| V/C Ratio(X) | 0.92 | 0.00 | | | | | 0.00 | 0.85 | | 1.04 | 0.59 | 0.00 |
| Avail Cap(c_a), veh/h | 1349 | 0 | | | | | 0 | 1781 | | 403 | 2587 | 0 |
| HCM Platoon Ratio | 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 | 0.00 | | | | 0.00 | 1.00 | 0.00 | 0.87 | 0.87 | 0.00 |
| Uniform Delay (d), s/veh | 51.9 | 0.0 | 0.0 | | | | 0.0 | 52.3 | 0.0 | 70.2 | 31.6 | 0.0 |
| Incr Delay (d2), s/veh | 9.7 | 0.0 | 0.0 | | | | 0.0 | 6.2 | 0.0 | 53.8 | 0.2 | 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 |
| %ile BackOfQ(50%),veh/ln | 20.9 | 0.0 | 0.0 | | | | 0.0 | 16.2 | 0.0 | 11.1 | 12.5 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.6 | 0.0 | 0.0 | | | | 0.0 | 58.5 | 0.0 | 124.0 | 31.8 | 0.0 |
| LnGrp LOS | E | A | | | | | A | E | | F | C | A |
| Approach Vol, veh/h | | 1029 | A | | | | | 1249 | A | | 1761 | |
| Approach Delay, s/veh | | 61.6 | | | | | | 58.5 | | | 53.8 | |
| Approach LOS | | E | | | | | | E | | | D | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 79.9 | | 58.9 | 26.0 | 53.9 | | | | | | |
| Change Period (Y+Rc), s | | * 5.4 | | 6.4 | 6.4 | * 5.4 | | | | | | |
| Max Green Setting (Gmax), s | | * 85 | | 63.6 | 19.6 | * 59 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 34.5 | | 48.8 | 21.6 | 40.5 | | | | | | |
| Green Ext Time (p_c), s | | 12.2 | | 3.7 | 0.0 | 7.9 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 57.3 | | | | | | | | | |
| HCM 6th LOS | | | E | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |
| Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary
 11: Gibson Rd & Wigwam Pkwy

Henderson Interchange
 Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 174 | 49 | 228 | 79 | 41 | 41 | 262 | 1387 | 301 | 67 | 815 | 218 |
| Future Volume (veh/h) | 174 | 49 | 228 | 79 | 41 | 41 | 262 | 1387 | 301 | 67 | 815 | 218 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 189 | 53 | 248 | 86 | 45 | 45 | 285 | 1508 | 327 | 73 | 886 | 237 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 364 | 311 | 277 | 137 | 89 | 78 | 432 | 1986 | 886 | 194 | 2580 | 801 |
| Arrive On Green | 0.17 | 0.18 | 0.18 | 0.04 | 0.05 | 0.05 | 0.09 | 0.57 | 0.57 | 0.04 | 0.52 | 0.52 |
| Sat Flow, veh/h | 1739 | 1735 | 1547 | 1739 | 1750 | 1534 | 1739 | 3469 | 1547 | 1739 | 4985 | 1547 |
| Grp Volume(v), veh/h | 189 | 53 | 248 | 86 | 45 | 45 | 285 | 1508 | 327 | 73 | 886 | 237 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1735 | 1547 | 1739 | 1735 | 1550 | 1739 | 1735 | 1547 | 1739 | 1662 | 1547 |
| Q Serve(g_s), s | 5.7 | 2.7 | 16.5 | 0.9 | 2.6 | 3.0 | 7.6 | 34.5 | 4.9 | 2.0 | 10.9 | 6.8 |
| Cycle Q Clear(g_c), s | 5.7 | 2.7 | 16.5 | 0.9 | 2.6 | 3.0 | 7.6 | 34.5 | 4.9 | 2.0 | 10.9 | 6.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 364 | 311 | 277 | 137 | 88 | 79 | 432 | 1986 | 886 | 194 | 2580 | 801 |
| V/C Ratio(X) | 0.52 | 0.17 | 0.89 | 0.63 | 0.51 | 0.58 | 0.66 | 0.76 | 0.37 | 0.38 | 0.34 | 0.30 |
| Avail Cap(c_a), veh/h | 364 | 339 | 302 | 325 | 339 | 303 | 445 | 1986 | 886 | 303 | 2580 | 801 |
| 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 | 0.68 | 0.68 | 0.68 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.7 | 36.5 | 42.1 | 48.5 | 48.6 | 48.7 | 10.5 | 17.0 | 2.0 | 16.4 | 14.9 | 7.9 |
| Incr Delay (d2), s/veh | 1.3 | 0.3 | 25.8 | 4.7 | 4.4 | 6.5 | 2.4 | 1.9 | 0.8 | 1.2 | 0.4 | 0.9 |
| 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 | 4.4 | 1.2 | 8.1 | 2.3 | 1.2 | 1.3 | 2.8 | 12.7 | 3.4 | 0.8 | 3.9 | 3.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 39.0 | 36.8 | 67.9 | 53.2 | 53.0 | 55.3 | 12.9 | 18.9 | 2.8 | 17.6 | 15.2 | 8.9 |
| LnGrp LOS | D | D | E | D | D | E | B | B | A | B | B | A |
| Approach Vol, veh/h | | 490 | | | 176 | | | 2120 | | | 1196 | |
| Approach Delay, s/veh | | 53.4 | | | 53.7 | | | 15.6 | | | 14.1 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 14.2 | 58.8 | 8.6 | 23.3 | 8.5 | 64.6 | 22.1 | 9.8 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 10.5 | 40.5 | 15.5 | 20.5 | 10.5 | 40.5 | 15.5 | 20.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 9.6 | 12.9 | 2.9 | 18.5 | 4.0 | 36.5 | 7.7 | 5.0 | | | | |
| Green Ext Time (p_c), s | 0.1 | 7.5 | 0.1 | 0.4 | 0.1 | 3.3 | 0.3 | 0.3 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 21.5 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved pedestrian interval to be less than phase max green. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary
 11: Gibson Rd & Wigwam Pkwy

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | ↗ | ↕ | | ↖ | ↕ | | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ |
| Traffic Volume (veh/h) | 214 | 34 | 342 | 162 | 43 | 85 | 181 | 994 | 175 | 59 | 1137 | 174 |
| Future Volume (veh/h) | 214 | 34 | 342 | 162 | 43 | 85 | 181 | 994 | 175 | 59 | 1137 | 174 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 233 | 37 | 372 | 176 | 47 | 92 | 197 | 1080 | 190 | 64 | 1236 | 189 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 453 | 430 | 384 | 218 | 430 | 384 | 226 | 1444 | 644 | 139 | 1966 | 610 |
| Arrive On Green | 0.09 | 0.25 | 0.25 | 0.09 | 0.25 | 0.25 | 0.04 | 0.29 | 0.29 | 0.04 | 0.40 | 0.40 |
| Sat Flow, veh/h | 1697 | 1692 | 1510 | 1697 | 1692 | 1510 | 1697 | 3385 | 1510 | 1697 | 4863 | 1510 |
| Grp Volume(v), veh/h | 233 | 37 | 372 | 176 | 47 | 92 | 197 | 1080 | 190 | 64 | 1236 | 189 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 1692 | 1510 | 1697 | 1692 | 1510 | 1697 | 1692 | 1510 | 1697 | 1621 | 1510 |
| Q Serve(g_s), s | 10.5 | 2.0 | 29.3 | 9.1 | 2.6 | 5.8 | 4.8 | 34.8 | 11.8 | 2.9 | 24.4 | 6.7 |
| Cycle Q Clear(g_c), s | 10.5 | 2.0 | 29.3 | 9.1 | 2.6 | 5.8 | 4.8 | 34.8 | 11.8 | 2.9 | 24.4 | 6.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 453 | 430 | 384 | 218 | 430 | 384 | 226 | 1444 | 644 | 139 | 1966 | 610 |
| V/C Ratio(X) | 0.51 | 0.09 | 0.97 | 0.81 | 0.11 | 0.24 | 0.87 | 0.75 | 0.30 | 0.46 | 0.63 | 0.31 |
| Avail Cap(c_a), veh/h | 453 | 430 | 384 | 218 | 430 | 384 | 303 | 1444 | 644 | 296 | 1966 | 610 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.88 | 0.88 | 0.88 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.2 | 34.1 | 44.3 | 32.9 | 34.3 | 35.5 | 51.3 | 37.0 | 28.8 | 30.3 | 28.6 | 10.3 |
| Incr Delay (d2), s/veh | 1.0 | 0.1 | 37.8 | 19.7 | 0.1 | 0.3 | 16.6 | 3.2 | 1.0 | 2.4 | 1.5 | 1.3 |
| 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 | 0.7 | 0.8 | 14.8 | 4.9 | 1.1 | 2.2 | 6.9 | 15.5 | 4.7 | 1.2 | 9.4 | 3.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 32.2 | 34.2 | 82.1 | 52.5 | 34.4 | 35.9 | 67.9 | 40.2 | 29.8 | 32.7 | 30.1 | 11.7 |
| LnGrp LOS | C | C | F | D | C | D | E | D | C | C | C | B |
| Approach Vol, veh/h | | 642 | | | 315 | | | 1467 | | | 1489 | |
| Approach Delay, s/veh | | 61.2 | | | 45.0 | | | 42.5 | | | 27.9 | |
| Approach LOS | | E | | | D | | | D | | | C | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.6 | 53.0 | 15.0 | 35.0 | 8.9 | 55.7 | 15.0 | 35.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 12.5 | 48.5 | 10.5 | 30.5 | 15.5 | 45.5 | 10.5 | 30.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 6.8 | 26.4 | 11.1 | 31.3 | 4.9 | 36.8 | 12.5 | 7.8 | | | | |
| Green Ext Time (p_c), s | 0.2 | 9.7 | 0.0 | 0.0 | 0.1 | 4.9 | 0.0 | 0.7 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 40.2 |
| HCM 6th LOS | D |

Notes

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

HCM 6th Signalized Intersection Summary
 12: Gibson Rd & I-215 WB Ramp

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-----|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | | | | ↙ | ↖ | ↗ | ↘↙ | ↘↖↗ | | | ↘↙↘ | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 268 | 26 | 527 | 430 | 1380 | 0 | 0 | 636 | 614 |
| Future Volume (veh/h) | 0 | 0 | 0 | 268 | 26 | 527 | 430 | 1380 | 0 | 0 | 636 | 614 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | | | | 1826 | 1826 | 1826 | 1826 | 1826 | 0 | 0 | 1826 | 1826 |
| Adj Flow Rate, veh/h | | | | 311 | 0 | 573 | 467 | 1500 | 0 | 0 | 691 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 5 | 5 |
| Cap, veh/h | | | | 1166 | 0 | 519 | 553 | 2744 | 0 | 0 | 1656 | |
| Arrive On Green | | | | 0.34 | 0.00 | 0.34 | 0.16 | 0.55 | 0.00 | 0.00 | 0.11 | 0.00 |
| Sat Flow, veh/h | | | | 3478 | 0 | 1547 | 3374 | 5149 | 0 | 0 | 5313 | 0 |
| Grp Volume(v), veh/h | | | | 311 | 0 | 573 | 467 | 1500 | 0 | 0 | 691 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1739 | 0 | 1547 | 1687 | 1662 | 0 | 0 | 1662 | 0 |
| Q Serve(g_s), s | | | | 6.9 | 0.0 | 35.2 | 14.1 | 20.3 | 0.0 | 0.0 | 13.6 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 6.9 | 0.0 | 35.2 | 14.1 | 20.3 | 0.0 | 0.0 | 13.6 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | | | | 1166 | 0 | 519 | 553 | 2744 | 0 | 0 | 1656 | |
| V/C Ratio(X) | | | | 0.27 | 0.00 | 1.10 | 0.84 | 0.55 | 0.00 | 0.00 | 0.42 | |
| Avail Cap(c_a), veh/h | | | | 1166 | 0 | 519 | 781 | 2744 | 0 | 0 | 1656 | |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.35 | 0.35 | 0.00 | 0.00 | 0.95 | 0.00 |
| Uniform Delay (d), s/veh | | | | 25.5 | 0.0 | 34.9 | 42.6 | 15.2 | 0.0 | 0.0 | 37.3 | 0.0 |
| Incr Delay (d2), s/veh | | | | 0.6 | 0.0 | 71.3 | 2.2 | 0.1 | 0.0 | 0.0 | 0.7 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 2.8 | 0.0 | 22.6 | 5.9 | 7.0 | 0.0 | 0.0 | 6.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 26.0 | 0.0 | 106.2 | 44.8 | 15.3 | 0.0 | 0.0 | 38.0 | 0.0 |
| LnGrp LOS | | | | C | A | F | D | B | A | A | D | |
| Approach Vol, veh/h | | | | | 884 | | | 1967 | | | 691 | A |
| Approach Delay, s/veh | | | | | 78.0 | | | 22.3 | | | 38.0 | |
| Approach LOS | | | | | E | | | C | | | D | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.9 | 40.1 | | | | 63.0 | | 42.0 | | | | |
| Change Period (Y+Rc), s | * 5.7 | * 5.2 | | | | * 5.2 | | 6.8 | | | | |
| Max Green Setting (Gmax), s | * 24 | * 28 | | | | * 58 | | 35.2 | | | | |
| Max Q Clear Time (g_c+I1), s | 16.1 | 15.6 | | | | 22.3 | | 37.2 | | | | |
| Green Ext Time (p_c), s | 1.1 | 3.6 | | | | 13.8 | | 0.0 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 39.2 |
| HCM 6th LOS | D |

Notes

- User approved volume balancing among the lanes for turning movement.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
- Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 12: Gibson Rd & I-215 WB Ramp

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-----|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | | | | ↖ | ↖ | ↖ | ↖↖ | ↖↖↖ | | | ↖↖↖ | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 536 | 6 | 319 | 274 | 1106 | 0 | 0 | 913 | 747 |
| Future Volume (veh/h) | 0 | 0 | 0 | 536 | 6 | 319 | 274 | 1106 | 0 | 0 | 913 | 747 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | | | | 1781 | 1781 | 1781 | 1781 | 1781 | 0 | 0 | 1781 | 1781 |
| Adj Flow Rate, veh/h | | | | 588 | 0 | 347 | 298 | 1202 | 0 | 0 | 992 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 8 | 8 | 8 | 8 | 8 | 0 | 0 | 8 | 8 |
| Cap, veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| Arrive On Green | | | | 0.28 | 0.00 | 0.28 | 0.17 | 0.62 | 0.00 | 0.00 | 0.41 | 0.00 |
| Sat Flow, veh/h | | | | 3393 | 0 | 1510 | 3291 | 5024 | 0 | 0 | 5184 | 0 |
| Grp Volume(v), veh/h | | | | 588 | 0 | 347 | 298 | 1202 | 0 | 0 | 992 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1697 | 0 | 1510 | 1646 | 1621 | 0 | 0 | 1621 | 0 |
| Q Serve(g_s), s | | | | 18.2 | 0.0 | 25.9 | 9.9 | 14.8 | 0.0 | 0.0 | 18.1 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 18.2 | 0.0 | 25.9 | 9.9 | 14.8 | 0.0 | 0.0 | 18.1 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| V/C Ratio(X) | | | | 0.63 | 0.00 | 0.83 | 0.52 | 0.40 | 0.00 | 0.00 | 0.50 | |
| Avail Cap(c_a), veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| HCM Platoon Ratio | | | | 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 | 0.51 | 0.51 | 0.00 | 0.00 | 0.85 | 0.00 |
| Uniform Delay (d), s/veh | | | | 38.0 | 0.0 | 40.8 | 45.1 | 11.3 | 0.0 | 0.0 | 26.1 | 0.0 |
| Incr Delay (d2), s/veh | | | | 3.2 | 0.0 | 17.2 | 0.4 | 0.2 | 0.0 | 0.0 | 0.7 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 7.7 | 0.0 | 11.3 | 4.0 | 4.9 | 0.0 | 0.0 | 6.9 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 41.1 | 0.0 | 58.0 | 45.5 | 11.5 | 0.0 | 0.0 | 26.8 | 0.0 |
| LnGrp LOS | | | | D | A | E | D | B | A | A | C | |
| Approach Vol, veh/h | | | | | 935 | | | 1500 | | | 992 | A |
| Approach Delay, s/veh | | | | | 47.4 | | | 18.3 | | | 26.8 | |
| Approach LOS | | | | | D | | | B | | | C | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 26.5 | 54.0 | | | | 80.5 | | 40.0 | | | | |
| Change Period (Y+Rc), s | * 5.7 | * 4.6 | | | | * 5.7 | | 6.8 | | | | |
| Max Green Setting (Gmax), s | * 20 | * 49 | | | | * 75 | | 33.2 | | | | |
| Max Q Clear Time (g_c+I1), s | 11.9 | 20.1 | | | | 16.8 | | 27.9 | | | | |
| Green Ext Time (p_c), s | 0.7 | 7.6 | | | | 11.0 | | 1.8 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 28.7 |
| HCM 6th LOS | C |

Notes

- User approved volume balancing among the lanes for turning movement.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
- Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 13: Gibson Rd & I-215 EB Ramp

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|------|-------|------|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | ↗ | ↖ | ↗ | | | | | ↑↑↑ | | ↗↖ | ↑↑↑ | |
| Traffic Volume (veh/h) | 846 | 1 | 143 | 0 | 0 | 0 | 0 | 1046 | 494 | 242 | 478 | 0 |
| Future Volume (veh/h) | 846 | 1 | 143 | 0 | 0 | 0 | 0 | 1046 | 494 | 242 | 478 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1826 | 1826 | | | | 0 | 1826 | 1826 | 1826 | 1826 | 0 |
| Adj Flow Rate, veh/h | 921 | 0 | 0 | | | | 0 | 1137 | 0 | 263 | 520 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | | | | 0 | 5 | 5 | 5 | 5 | 0 |
| Cap, veh/h | 1014 | 0 | | | | | 0 | 2148 | | 325 | 2937 | 0 |
| Arrive On Green | 0.29 | 0.00 | 0.00 | | | | 0.00 | 0.43 | 0.00 | 0.19 | 1.00 | 0.00 |
| Sat Flow, veh/h | 3478 | 0 | 1547 | | | | 0 | 5313 | 0 | 3374 | 5149 | 0 |
| Grp Volume(v), veh/h | 921 | 0 | 0 | | | | 0 | 1137 | 0 | 263 | 520 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1547 | | | | 0 | 1662 | 0 | 1687 | 1662 | 0 |
| Q Serve(g_s), s | 26.8 | 0.0 | 0.0 | | | | 0.0 | 17.7 | 0.0 | 7.8 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 26.8 | 0.0 | 0.0 | | | | 0.0 | 17.7 | 0.0 | 7.8 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 1014 | 0 | | | | | 0 | 2148 | | 325 | 2937 | 0 |
| V/C Ratio(X) | 0.91 | 0.00 | | | | | 0.00 | 0.53 | | 0.81 | 0.18 | 0.00 |
| Avail Cap(c_a), veh/h | 1129 | 0 | | | | | 0 | 2148 | | 434 | 2937 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | | | | 0.00 | 0.65 | 0.00 | 0.51 | 0.51 | 0.00 |
| Uniform Delay (d), s/veh | 35.8 | 0.0 | 0.0 | | | | 0.0 | 22.0 | 0.0 | 41.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 10.0 | 0.0 | 0.0 | | | | 0.0 | 0.2 | 0.0 | 4.3 | 0.1 | 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 |
| %ile BackOfQ(50%),veh/ln | 12.1 | 0.0 | 0.0 | | | | 0.0 | 6.4 | 0.0 | 3.1 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.8 | 0.0 | 0.0 | | | | 0.0 | 22.2 | 0.0 | 45.8 | 0.1 | 0.0 |
| LnGrp LOS | D | A | | | | | A | C | | D | A | A |
| Approach Vol, veh/h | | 921 | A | | | | | 1137 | A | | 783 | |
| Approach Delay, s/veh | | 45.8 | | | | | | 22.2 | | | 15.4 | |
| Approach LOS | | D | | | | | | C | | | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 67.5 | | 37.5 | 16.6 | 50.8 | | | | | | |
| Change Period (Y+Rc), s | | * 5.6 | | 6.9 | 6.5 | * 5.6 | | | | | | |
| Max Green Setting (Gmax), s | | * 59 | | 34.1 | 13.5 | * 38 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | 28.8 | 9.8 | 19.7 | | | | | | |
| Green Ext Time (p_c), s | | 3.7 | | 1.8 | 0.3 | 7.3 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 28.0 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |
| Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary
 13: Gibson Rd & I-215 EB Ramp

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | ↗ | ↖ | ↗ | | | | | ↑↑↑ | | ↗↖ | ↑↑↑ | |
| Traffic Volume (veh/h) | 520 | 11 | 649 | 0 | 0 | 0 | 0 | 730 | 280 | 323 | 1157 | 0 |
| Future Volume (veh/h) | 520 | 11 | 649 | 0 | 0 | 0 | 0 | 730 | 280 | 323 | 1157 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 1781 | | | | 0 | 1781 | 1781 | 1781 | 1781 | 0 |
| Adj Flow Rate, veh/h | 574 | 0 | 0 | | | | 0 | 793 | 0 | 351 | 1258 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | | | | 0 | 8 | 8 | 8 | 8 | 0 |
| Cap, veh/h | 670 | 0 | | | | | 0 | 2521 | | 414 | 3396 | 0 |
| Arrive On Green | 0.20 | 0.00 | 0.00 | | | | 0.00 | 0.52 | 0.00 | 0.13 | 0.70 | 0.00 |
| Sat Flow, veh/h | 3393 | 0 | 1510 | | | | 0 | 5184 | 0 | 3291 | 5024 | 0 |
| Grp Volume(v), veh/h | 574 | 0 | 0 | | | | 0 | 793 | 0 | 351 | 1258 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1510 | | | | 0 | 1621 | 0 | 1646 | 1621 | 0 |
| Q Serve(g_s), s | 19.6 | 0.0 | 0.0 | | | | 0.0 | 11.3 | 0.0 | 12.5 | 12.6 | 0.0 |
| Cycle Q Clear(g_c), s | 19.6 | 0.0 | 0.0 | | | | 0.0 | 11.3 | 0.0 | 12.5 | 12.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 670 | 0 | | | | | 0 | 2521 | | 414 | 3396 | 0 |
| V/C Ratio(X) | 0.86 | 0.00 | | | | | 0.00 | 0.31 | | 0.85 | 0.37 | 0.00 |
| Avail Cap(c_a), veh/h | 1501 | 0 | | | | | 0 | 2521 | | 535 | 3396 | 0 |
| HCM Platoon Ratio | 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 | 0.00 | | | | 0.00 | 0.83 | 0.00 | 0.35 | 0.35 | 0.00 |
| Uniform Delay (d), s/veh | 46.5 | 0.0 | 0.0 | | | | 0.0 | 16.6 | 0.0 | 51.3 | 7.4 | 0.0 |
| Incr Delay (d2), s/veh | 3.3 | 0.0 | 0.0 | | | | 0.0 | 0.1 | 0.0 | 3.7 | 0.1 | 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 |
| %ile BackOfQ(50%),veh/ln | 8.3 | 0.0 | 0.0 | | | | 0.0 | 4.0 | 0.0 | 5.3 | 3.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 49.8 | 0.0 | 0.0 | | | | 0.0 | 16.7 | 0.0 | 55.0 | 7.5 | 0.0 |
| LnGrp LOS | D | A | | | | | A | B | | E | A | A |
| Approach Vol, veh/h | | 574 | A | | | | | 793 | A | | 1609 | |
| Approach Delay, s/veh | | 49.8 | | | | | | 16.7 | | | 17.9 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 89.4 | | 30.6 | 21.6 | 67.8 | | | | | | |
| Change Period (Y+Rc), s | | * 5.6 | | 6.9 | 6.5 | * 5.6 | | | | | | |
| Max Green Setting (Gmax), s | | * 55 | | 53.1 | 19.5 | * 28 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 14.6 | | 21.6 | 14.5 | 13.3 | | | | | | |
| Green Ext Time (p_c), s | | 11.2 | | 2.1 | 0.6 | 4.4 | | | | | | |

Intersection Summary

























| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 23.7 |
| HCM 6th LOS | C |

Notes

- User approved volume balancing among the lanes for turning movement.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
- Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 14: Gibson Rd & Las Palmas Entrada Ave

Henderson Interchange
 Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 197 | 9 | 24 | 39 | 57 | 464 | 52 | 826 | 42 | 110 | 478 | 42 |
| Future Volume (veh/h) | 197 | 9 | 24 | 39 | 57 | 464 | 52 | 826 | 42 | 110 | 478 | 42 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 214 | 10 | 26 | 42 | 62 | 504 | 57 | 898 | 46 | 120 | 520 | 46 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 245 | 122 | 103 | 684 | 558 | 473 | 73 | 947 | 49 | 208 | 1274 | 568 |
| Arrive On Green | 0.08 | 0.07 | 0.07 | 0.32 | 0.31 | 0.31 | 0.04 | 0.28 | 0.28 | 0.04 | 0.12 | 0.12 |
| Sat Flow, veh/h | 1739 | 1826 | 1547 | 1739 | 1826 | 1547 | 1739 | 3358 | 172 | 1739 | 3469 | 1547 |
| Grp Volume(v), veh/h | 214 | 10 | 26 | 42 | 62 | 504 | 57 | 464 | 480 | 120 | 520 | 46 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1826 | 1547 | 1739 | 1826 | 1547 | 1739 | 1735 | 1795 | 1739 | 1735 | 1547 |
| Q Serve(g_s), s | 6.4 | 0.5 | 1.7 | 0.0 | 2.6 | 25.1 | 3.4 | 27.5 | 27.5 | 7.1 | 14.6 | 0.9 |
| Cycle Q Clear(g_c), s | 6.4 | 0.5 | 1.7 | 0.0 | 2.6 | 25.1 | 3.4 | 27.5 | 27.5 | 7.1 | 14.6 | 0.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.10 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 245 | 122 | 103 | 684 | 558 | 473 | 73 | 489 | 506 | 208 | 1274 | 568 |
| V/C Ratio(X) | 0.87 | 0.08 | 0.25 | 0.06 | 0.11 | 1.07 | 0.78 | 0.95 | 0.95 | 0.58 | 0.41 | 0.08 |
| Avail Cap(c_a), veh/h | 277 | 560 | 475 | 684 | 558 | 473 | 240 | 491 | 508 | 208 | 1274 | 568 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 0.99 | 0.99 |
| Uniform Delay (d), s/veh | 45.4 | 46.0 | 46.5 | 21.9 | 26.2 | 22.3 | 49.8 | 36.9 | 36.9 | 47.8 | 35.6 | 3.6 |
| Incr Delay (d2), s/veh | 23.3 | 0.3 | 1.3 | 0.0 | 0.4 | 59.9 | 16.0 | 27.9 | 27.3 | 3.9 | 1.0 | 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 | 7.0 | 0.3 | 0.7 | 0.7 | 1.2 | 16.5 | 1.8 | 14.8 | 15.2 | 3.4 | 6.9 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 68.7 | 46.3 | 47.8 | 22.0 | 26.6 | 82.2 | 65.8 | 64.9 | 64.3 | 51.7 | 36.6 | 3.8 |
| LnGrp LOS | E | D | D | C | C | F | E | E | E | D | D | A |
| Approach Vol, veh/h | | 250 | | | 608 | | | 1001 | | | 686 | |
| Approach Delay, s/veh | | 65.6 | | | 72.4 | | | 64.6 | | | 37.0 | |
| Approach LOS | | E | | | E | | | E | | | D | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.9 | 44.0 | 38.2 | 12.8 | 18.0 | 35.9 | 13.0 | 38.0 | | | | |
| Change Period (Y+Rc), s | 5.5 | * 5.5 | * 4.5 | 5.8 | 5.5 | 6.3 | * 4.5 | 5.9 | | | | |
| Max Green Setting (Gmax), s | 14.5 | * 27 | * 11 | 32.2 | 10.5 | 29.7 | * 11 | 32.1 | | | | |
| Max Q Clear Time (g_c+I1), s | 5.4 | 16.6 | 2.0 | 3.7 | 9.1 | 29.5 | 8.4 | 27.1 | | | | |
| Green Ext Time (p_c), s | 0.1 | 2.3 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 1.1 | | | | |

Intersection Summary

























| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 59.1 |
| HCM 6th LOS | E |

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
14: Gibson Rd & Las Palmas Entrada Ave

Henderson Interchange
Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 76 | 36 | 47 | 53 | 33 | 234 | 28 | 636 | 36 | 439 | 1257 | 134 |
| Future Volume (veh/h) | 76 | 36 | 47 | 53 | 33 | 234 | 28 | 636 | 36 | 439 | 1257 | 134 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 83 | 39 | 51 | 58 | 36 | 254 | 30 | 691 | 39 | 477 | 1366 | 146 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 169 | 104 | 88 | 333 | 293 | 248 | 45 | 670 | 38 | 688 | 2003 | 893 |
| Arrive On Green | 0.04 | 0.06 | 0.06 | 0.15 | 0.16 | 0.16 | 0.03 | 0.21 | 0.21 | 0.81 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1697 | 1781 | 1510 | 1697 | 1781 | 1510 | 1697 | 3257 | 184 | 1697 | 3385 | 1510 |
| Grp Volume(v), veh/h | 83 | 39 | 51 | 58 | 36 | 254 | 30 | 359 | 371 | 477 | 1366 | 146 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 1781 | 1510 | 1697 | 1781 | 1510 | 1697 | 1692 | 1748 | 1697 | 1692 | 1510 |
| Q Serve(g_s), s | 0.0 | 2.5 | 4.0 | 0.0 | 2.1 | 16.9 | 2.1 | 24.7 | 24.7 | 14.6 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 2.5 | 4.0 | 0.0 | 2.1 | 16.9 | 2.1 | 24.7 | 24.7 | 14.6 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.11 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 169 | 104 | 88 | 333 | 293 | 248 | 45 | 348 | 360 | 688 | 2003 | 893 |
| V/C Ratio(X) | 0.49 | 0.38 | 0.58 | 0.17 | 0.12 | 1.02 | 0.67 | 1.03 | 1.03 | 0.69 | 0.68 | 0.16 |
| Avail Cap(c_a), veh/h | 251 | 493 | 418 | 333 | 491 | 416 | 276 | 348 | 360 | 688 | 2003 | 893 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.62 | 0.62 | 0.62 |
| Uniform Delay (d), s/veh | 54.1 | 54.4 | 55.1 | 43.2 | 42.7 | 36.6 | 57.9 | 47.6 | 47.7 | 8.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 2.2 | 2.2 | 5.9 | 0.2 | 0.2 | 41.4 | 16.0 | 56.2 | 55.7 | 1.9 | 1.2 | 0.2 |
| 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 | 2.5 | 1.2 | 1.6 | 1.5 | 0.9 | 9.0 | 1.1 | 15.5 | 15.9 | 3.1 | 0.3 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 56.3 | 56.6 | 61.0 | 43.4 | 42.9 | 78.0 | 73.9 | 103.8 | 103.4 | 10.0 | 1.2 | 0.2 |
| LnGrp LOS | E | E | E | D | D | F | E | F | F | A | A | A |
| Approach Vol, veh/h | | 173 | | | 348 | | | 760 | | | 1989 | |
| Approach Delay, s/veh | | 57.8 | | | 68.6 | | | 102.4 | | | 3.2 | |
| Approach LOS | | E | | | E | | | F | | | A | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 8.7 | 76.5 | 22.0 | 12.8 | 54.2 | 31.0 | 9.2 | 25.6 | | | | |
| Change Period (Y+Rc), s | 5.5 | * 5.5 | * 4.5 | 5.8 | 5.5 | 6.3 | * 4.5 | 5.9 | | | | |
| Max Green Setting (Gmax), s | 19.5 | * 36 | * 11 | 33.2 | 29.5 | 24.7 | * 11 | 33.1 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.1 | 2.0 | 2.0 | 6.0 | 16.6 | 26.7 | 2.0 | 18.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 12.8 | 0.1 | 0.3 | 1.3 | 0.0 | 0.1 | 0.9 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 36.1 | | | | | | | | | |
| HCM 6th LOS | | | D | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved pedestrian interval to be less than phase max green. | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
16: Horizon Dr

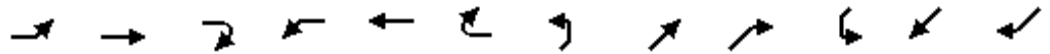
Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | |
|-----------------------------------|------|------|-------|------|---------------------------|------|------|-------|------|------|------|------|--|
| Lane Configurations | | | | | ↑↑ | | | ↑↑ | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 986 | 0 | 0 | 794 | 0 | 0 | 0 | 0 | |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 986 | 0 | 0 | 794 | 0 | 0 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.0 | | | 7.0 | | | | | |
| Lane Util. Factor | | | | | 0.95 | | | 0.95 | | | | | |
| Frt | | | | | 1.00 | | | 1.00 | | | | | |
| Flt Protected | | | | | 1.00 | | | 1.00 | | | | | |
| Satd. Flow (prot) | | | | | 3438 | | | 3438 | | | | | |
| Flt Permitted | | | | | 1.00 | | | 1.00 | | | | | |
| Satd. Flow (perm) | | | | | 3438 | | | 3438 | | | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 1072 | 0 | 0 | 863 | 0 | 0 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 1072 | 0 | 0 | 863 | 0 | 0 | 0 | 0 | |
| Turn Type | | | | | NA | | | NA | | | | | |
| Protected Phases | | | | | 2 | | | 4 | | | | | |
| Permitted Phases | | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | 48.0 | | | 28.0 | | | | | |
| Effective Green, g (s) | | | | | 48.0 | | | 28.0 | | | | | |
| Actuated g/C Ratio | | | | | 0.53 | | | 0.31 | | | | | |
| Clearance Time (s) | | | | | 7.0 | | | 7.0 | | | | | |
| Vehicle Extension (s) | | | | | 3.0 | | | 3.0 | | | | | |
| Lane Grp Cap (vph) | | | | | 1833 | | | 1069 | | | | | |
| v/s Ratio Prot | | | | | c0.31 | | | c0.25 | | | | | |
| v/s Ratio Perm | | | | | | | | | | | | | |
| v/c Ratio | | | | | 0.58 | | | 0.81 | | | | | |
| Uniform Delay, d1 | | | | | 14.2 | | | 28.5 | | | | | |
| Progression Factor | | | | | 1.10 | | | 1.00 | | | | | |
| Incremental Delay, d2 | | | | | 1.1 | | | 4.6 | | | | | |
| Delay (s) | | | | | 16.8 | | | 33.1 | | | | | |
| Level of Service | | | | | B | | | C | | | | | |
| Approach Delay (s) | | 0.0 | | | 16.8 | | | 33.1 | | | 0.0 | | |
| Approach LOS | | A | | | B | | | C | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 24.1 | | HCM 2000 Level of Service | | | | C | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.67 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | | | | 14.0 | | | | |
| Intersection Capacity Utilization | | | 60.9% | | ICU Level of Service | | | | B | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
16: Horizon Dr

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | |
|-----------------------------------|------|------|--------|------|---------------------------|------|------|-------|------|------|------|------|--|
| Lane Configurations | | | | | ↑↑ | | | ↑↑ | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 1556 | 0 | 0 | 745 | 0 | 0 | 0 | 0 | |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 1556 | 0 | 0 | 745 | 0 | 0 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.0 | | | 7.0 | | | | | |
| Lane Util. Factor | | | | | 0.95 | | | 0.95 | | | | | |
| Frt | | | | | 1.00 | | | 1.00 | | | | | |
| Flt Protected | | | | | 1.00 | | | 1.00 | | | | | |
| Satd. Flow (prot) | | | | | 3343 | | | 3343 | | | | | |
| Flt Permitted | | | | | 1.00 | | | 1.00 | | | | | |
| Satd. Flow (perm) | | | | | 3343 | | | 3343 | | | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 1691 | 0 | 0 | 810 | 0 | 0 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 1691 | 0 | 0 | 810 | 0 | 0 | 0 | 0 | |
| Turn Type | | | | | NA | | | NA | | | | | |
| Protected Phases | | | | | 2 | | | 4 | | | | | |
| Permitted Phases | | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | 38.0 | | | 38.0 | | | | | |
| Effective Green, g (s) | | | | | 38.0 | | | 38.0 | | | | | |
| Actuated g/C Ratio | | | | | 0.42 | | | 0.42 | | | | | |
| Clearance Time (s) | | | | | 7.0 | | | 7.0 | | | | | |
| Vehicle Extension (s) | | | | | 3.0 | | | 3.0 | | | | | |
| Lane Grp Cap (vph) | | | | | 1411 | | | 1411 | | | | | |
| v/s Ratio Prot | | | | | c0.51 | | | c0.24 | | | | | |
| v/s Ratio Perm | | | | | | | | | | | | | |
| v/c Ratio | | | | | 1.20 | | | 0.57 | | | | | |
| Uniform Delay, d1 | | | | | 26.0 | | | 19.8 | | | | | |
| Progression Factor | | | | | 1.20 | | | 1.00 | | | | | |
| Incremental Delay, d2 | | | | | 94.6 | | | 0.6 | | | | | |
| Delay (s) | | | | | 125.8 | | | 20.4 | | | | | |
| Level of Service | | | | | F | | | C | | | | | |
| Approach Delay (s) | | 0.0 | | | 125.8 | | | 20.4 | | | 0.0 | | |
| Approach LOS | | A | | | F | | | C | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 91.7 | | HCM 2000 Level of Service | | | | F | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.89 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | | | | 14.0 | | | | |
| Intersection Capacity Utilization | | | 100.0% | | ICU Level of Service | | | | G | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Horizon Dr & US 95 SB Ramps



| Movement | WBL | WBR | SBL | SBR | NEL | NER |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | | | TT | | | TT |
| Traffic Volume (vph) | 0 | 0 | 841 | 0 | 0 | 794 |
| Future Volume (vph) | 0 | 0 | 841 | 0 | 0 | 794 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 0.97 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 0.95 | | | 1.00 |
| Satd. Flow (prot) | | | 3335 | | | 2707 |
| Flt Permitted | | | 0.95 | | | 1.00 |
| Satd. Flow (perm) | | | 3335 | | | 2707 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 914 | 0 | 0 | 863 |
| RTOR Reduction (vph) | 0 | 0 | 323 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 591 | 0 | 0 | 863 |
| Turn Type | | | Prot | | | custom |
| Protected Phases | | | 2! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 48.0 | | | 90.0 |
| Effective Green, g (s) | | | 48.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.53 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 1778 | | | 2707 |
| v/s Ratio Prot | | | 0.18 | | | 0.32 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.33 | | | 0.32 |
| Uniform Delay, d1 | | | 11.9 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.5 | | | 0.2 |
| Delay (s) | | | 12.4 | | | 0.2 |
| Level of Service | | | B | | | A |
| Approach Delay (s) | 0.0 | | 12.4 | | 0.2 | |
| Approach LOS | A | | B | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 6.5 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.38 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 32.7% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

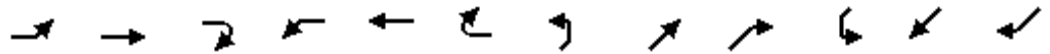
HCM Signalized Intersection Capacity Analysis
 17: Horizon Dr & US 95 SB Ramps



| Movement | WBL | WBR | SBL | SBR | NEL | NER |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | | | TT | | | TT |
| Traffic Volume (vph) | 0 | 0 | 1343 | 0 | 0 | 745 |
| Future Volume (vph) | 0 | 0 | 1343 | 0 | 0 | 745 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 0.97 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 0.95 | | | 1.00 |
| Satd. Flow (prot) | | | 3242 | | | 2632 |
| Flt Permitted | | | 0.95 | | | 1.00 |
| Satd. Flow (perm) | | | 3242 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1460 | 0 | 0 | 810 |
| RTOR Reduction (vph) | 0 | 0 | 429 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 1031 | 0 | 0 | 810 |
| Turn Type | | | Prot | | | custom |
| Protected Phases | | | 2! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 38.0 | | | 90.0 |
| Effective Green, g (s) | | | 38.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.42 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 1368 | | | 2632 |
| v/s Ratio Prot | | | c0.32 | | | 0.31 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.75 | | | 0.31 |
| Uniform Delay, d1 | | | 22.0 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 3.9 | | | 0.3 |
| Delay (s) | | | 25.9 | | | 0.3 |
| Level of Service | | | C | | | A |
| Approach Delay (s) | 0.0 | | 25.9 | | 0.3 | |
| Approach LOS | A | | C | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 16.8 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.56 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 47.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
18: Horizon Dr

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | | |
|-----------------------------------|------|-------|-------|------|------|------|------|------|------|------|-------|---------------------------|----------------------|---|
| Lane Configurations | | ↑↑ | | | | | | | | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 697 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1453 | 0 | | |
| Future Volume (vph) | 0 | 697 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1453 | 0 | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | |
| Total Lost time (s) | | 7.0 | | | | | | | | | 7.0 | | | |
| Lane Util. Factor | | 0.95 | | | | | | | | | 0.95 | | | |
| Frt | | 1.00 | | | | | | | | | 1.00 | | | |
| Flt Protected | | 1.00 | | | | | | | | | 1.00 | | | |
| Satd. Flow (prot) | | 3438 | | | | | | | | | 3438 | | | |
| Flt Permitted | | 1.00 | | | | | | | | | 1.00 | | | |
| Satd. Flow (perm) | | 3438 | | | | | | | | | 3438 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | |
| Adj. Flow (vph) | 0 | 758 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1579 | 0 | | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Lane Group Flow (vph) | 0 | 758 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1579 | 0 | | |
| Turn Type | | NA | | | | | | | | | NA | | | |
| Protected Phases | | 4 | | | | | | | | | 2 | | | |
| Permitted Phases | | | | | | | | | | | | | | |
| Actuated Green, G (s) | | 28.0 | | | | | | | | | 48.0 | | | |
| Effective Green, g (s) | | 28.0 | | | | | | | | | 48.0 | | | |
| Actuated g/C Ratio | | 0.31 | | | | | | | | | 0.53 | | | |
| Clearance Time (s) | | 7.0 | | | | | | | | | 7.0 | | | |
| Vehicle Extension (s) | | 3.0 | | | | | | | | | 3.0 | | | |
| Lane Grp Cap (vph) | | 1069 | | | | | | | | | 1833 | | | |
| v/s Ratio Prot | | c0.22 | | | | | | | | | c0.46 | | | |
| v/s Ratio Perm | | | | | | | | | | | | | | |
| v/c Ratio | | 0.71 | | | | | | | | | 0.86 | | | |
| Uniform Delay, d1 | | 27.4 | | | | | | | | | 18.1 | | | |
| Progression Factor | | 1.12 | | | | | | | | | 1.00 | | | |
| Incremental Delay, d2 | | 2.1 | | | | | | | | | 5.6 | | | |
| Delay (s) | | 32.7 | | | | | | | | | 23.7 | | | |
| Level of Service | | C | | | | | | | | | C | | | |
| Approach Delay (s) | | 32.7 | | | 0.0 | | | 0.0 | | | 23.7 | | | |
| Approach LOS | | C | | | A | | | A | | | C | | | |
| Intersection Summary | | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 26.6 | | | | | | | | | HCM 2000 Level of Service | C | |
| HCM 2000 Volume to Capacity ratio | | | 0.80 | | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | | | | | | 14.0 | | Sum of lost time (s) | |
| Intersection Capacity Utilization | | | 75.6% | | | | | | | | | | ICU Level of Service | D |
| Analysis Period (min) | | | 15 | | | | | | | | | | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
18: Horizon Dr

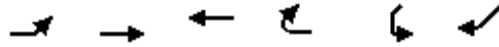
Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | | |
|-----------------------------------|------|-------|-------|------|------|------|------|------|------|------|-------|---------------------------|----------------------|---|
| Lane Configurations | | ↑↑ | | | | | | | | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1463 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1718 | 0 | | |
| Future Volume (vph) | 0 | 1463 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1718 | 0 | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | |
| Total Lost time (s) | | 7.0 | | | | | | | | | 7.0 | | | |
| Lane Util. Factor | | 0.95 | | | | | | | | | 0.95 | | | |
| Frt | | 1.00 | | | | | | | | | 1.00 | | | |
| Flt Protected | | 1.00 | | | | | | | | | 1.00 | | | |
| Satd. Flow (prot) | | 3343 | | | | | | | | | 3343 | | | |
| Flt Permitted | | 1.00 | | | | | | | | | 1.00 | | | |
| Satd. Flow (perm) | | 3343 | | | | | | | | | 3343 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | |
| Adj. Flow (vph) | 0 | 1590 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1867 | 0 | | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Lane Group Flow (vph) | 0 | 1590 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1867 | 0 | | |
| Turn Type | | NA | | | | | | | | | NA | | | |
| Protected Phases | | 4 | | | | | | | | | 2 | | | |
| Permitted Phases | | | | | | | | | | | | | | |
| Actuated Green, G (s) | | 38.0 | | | | | | | | | 38.0 | | | |
| Effective Green, g (s) | | 38.0 | | | | | | | | | 38.0 | | | |
| Actuated g/C Ratio | | 0.42 | | | | | | | | | 0.42 | | | |
| Clearance Time (s) | | 7.0 | | | | | | | | | 7.0 | | | |
| Vehicle Extension (s) | | 3.0 | | | | | | | | | 3.0 | | | |
| Lane Grp Cap (vph) | | 1411 | | | | | | | | | 1411 | | | |
| v/s Ratio Prot | | c0.48 | | | | | | | | | c0.56 | | | |
| v/s Ratio Perm | | | | | | | | | | | | | | |
| v/c Ratio | | 1.13 | | | | | | | | | 1.32 | | | |
| Uniform Delay, d1 | | 26.0 | | | | | | | | | 26.0 | | | |
| Progression Factor | | 0.92 | | | | | | | | | 1.00 | | | |
| Incremental Delay, d2 | | 65.0 | | | | | | | | | 150.5 | | | |
| Delay (s) | | 88.8 | | | | | | | | | 176.5 | | | |
| Level of Service | | F | | | | | | | | | F | | | |
| Approach Delay (s) | | 88.8 | | | 0.0 | | | 0.0 | | | 176.5 | | | |
| Approach LOS | | F | | | A | | | A | | | F | | | |
| Intersection Summary | | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 136.2 | | | | | | | | | HCM 2000 Level of Service | F | |
| HCM 2000 Volume to Capacity ratio | | | 1.22 | | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | | | | | | 14.0 | | Sum of lost time (s) | |
| Intersection Capacity Utilization | | | 98.6% | | | | | | | | | | ICU Level of Service | F |
| Analysis Period (min) | | | 15 | | | | | | | | | | | |

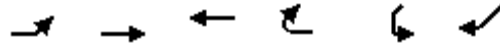
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 19: Horizon Dr/US 95 NB Ramps



| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | | | ↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 0 | 277 | 0 | 0 | 1453 |
| Future Volume (vph) | 0 | 0 | 277 | 0 | 0 | 1453 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 1.00 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 1810 | | | 2707 |
| Flt Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 1810 | | | 2707 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 301 | 0 | 0 | 1579 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 301 | 0 | 0 | 1579 |
| Turn Type | | | NA | | | custom |
| Protected Phases | | | 4! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 28.0 | | | 90.0 |
| Effective Green, g (s) | | | 28.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.31 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 563 | | | 2707 |
| v/s Ratio Prot | | | 0.17 | | | 0.58 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.53 | | | 0.58 |
| Uniform Delay, d1 | | | 25.6 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 1.0 | | | 0.4 |
| Delay (s) | | | 26.6 | | | 0.4 |
| Level of Service | | | C | | | A |
| Approach Delay (s) | | 0.0 | 26.6 | | 0.4 | |
| Approach LOS | | A | C | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 4.6 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.69 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 27.2% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

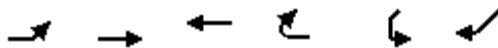
HCM Signalized Intersection Capacity Analysis
 19: Horizon Dr/US 95 NB Ramps



| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | | | ↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 0 | 329 | 0 | 0 | 1718 |
| Future Volume (vph) | 0 | 0 | 329 | 0 | 0 | 1718 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 1.00 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 1759 | | | 2632 |
| Flt Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 1759 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 358 | 0 | 0 | 1867 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 358 | 0 | 0 | 1867 |
| Turn Type | | | NA | | | custom |
| Protected Phases | | | 4! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 38.0 | | | 90.0 |
| Effective Green, g (s) | | | 38.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.42 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 742 | | | 2632 |
| v/s Ratio Prot | | | 0.20 | | | 0.71 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.48 | | | 0.71 |
| Uniform Delay, d1 | | | 18.9 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.5 | | | 0.2 |
| Delay (s) | | | 19.4 | | | 0.2 |
| Level of Service | | | B | | | A |
| Approach Delay (s) | | 0.0 | 19.4 | | 0.2 | |
| Approach LOS | | A | B | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.2 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.84 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 31.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
20: Horizon Dr & US 95 SB Ramps

Henderson Interchange
Feasibility Study

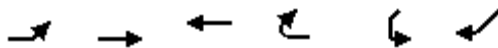


| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|-------|------|---------------------------|-------|
| Lane Configurations | | | ↑↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 0 | 986 | 0 | 0 | 649 |
| Future Volume (vph) | 0 | 0 | 986 | 0 | 0 | 649 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 4.0 | | | 7.0 |
| Lane Util. Factor | | | 0.95 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 3438 | | | 2707 |
| Flt Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 3438 | | | 2707 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1072 | 0 | 0 | 705 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 1072 | 0 | 0 | 705 |
| Turn Type | | | NA | | | Prot |
| Protected Phases | | | Free! | | | 4! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 90.0 | | | 28.0 |
| Effective Green, g (s) | | | 90.0 | | | 28.0 |
| Actuated g/C Ratio | | | 1.00 | | | 0.31 |
| Clearance Time (s) | | | | | | 7.0 |
| Vehicle Extension (s) | | | | | | 3.0 |
| Lane Grp Cap (vph) | | | 3438 | | | 842 |
| v/s Ratio Prot | | | 0.31 | | | c0.26 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.31 | | | 0.84 |
| Uniform Delay, d1 | | | 0.0 | | | 28.9 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.2 | | | 7.3 |
| Delay (s) | | | 0.2 | | | 36.2 |
| Level of Service | | | A | | | D |
| Approach Delay (s) | | 0.0 | 0.2 | | 36.2 | |
| Approach LOS | | A | A | | D | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 14.5 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.53 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 60.9% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis

20: Horizon Dr & US 95 SB Ramps

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|--------|------|---------------------------|-------|
| Lane Configurations | | | ↑↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 0 | 1556 | 0 | 0 | 1367 |
| Future Volume (vph) | 0 | 0 | 1556 | 0 | 0 | 1367 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 4.0 | | | 7.0 |
| Lane Util. Factor | | | 0.95 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 3343 | | | 2632 |
| Flt Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 3343 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1691 | 0 | 0 | 1486 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 1691 | 0 | 0 | 1486 |
| Turn Type | | | NA | | | Prot |
| Protected Phases | | | Free! | | | 4! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 90.0 | | | 38.0 |
| Effective Green, g (s) | | | 90.0 | | | 38.0 |
| Actuated g/C Ratio | | | 1.00 | | | 0.42 |
| Clearance Time (s) | | | | | | 7.0 |
| Vehicle Extension (s) | | | | | | 3.0 |
| Lane Grp Cap (vph) | | | 3343 | | | 1111 |
| v/s Ratio Prot | | | 0.51 | | | c0.56 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.51 | | | 1.34 |
| Uniform Delay, d1 | | | 0.0 | | | 26.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.0 | | | 158.1 |
| Delay (s) | | | 0.0 | | | 184.1 |
| Level of Service | | | A | | | F |
| Approach Delay (s) | | 0.0 | 0.0 | | 184.1 | |
| Approach LOS | | A | A | | F | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 86.1 | | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | | | 0.97 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 100.0% | | ICU Level of Service | G |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM 6th Signalized Intersection Summary
15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-------|------|-------|-------|-------|-------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 194 | 3467 | 109 | 82 | 4167 | 170 | 437 | 25 | 127 | 95 | 20 | 25 |
| Future Volume (veh/h) | 194 | 3467 | 109 | 82 | 4167 | 170 | 437 | 25 | 127 | 95 | 20 | 25 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 211 | 3768 | 118 | 89 | 4529 | 185 | 475 | 27 | 138 | 103 | 22 | 27 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 262 | 1842 | 454 | 135 | 2164 | 87 | 575 | 191 | 162 | 148 | 61 | 52 |
| Arrive On Green | 0.08 | 0.29 | 0.29 | 0.08 | 0.29 | 0.29 | 0.12 | 0.10 | 0.10 | 0.04 | 0.03 | 0.03 |
| Sat Flow, veh/h | 3374 | 6281 | 1547 | 1739 | 7393 | 296 | 4904 | 1826 | 1547 | 3374 | 1826 | 1547 |
| Grp Volume(v), veh/h | 211 | 3768 | 118 | 89 | 3605 | 1109 | 475 | 27 | 138 | 103 | 22 | 27 |
| Grp Sat Flow(s),veh/h/ln | 1687 | 1570 | 1547 | 1739 | 1479 | 1773 | 1635 | 1826 | 1547 | 1687 | 1826 | 1547 |
| Q Serve(g_s), s | 9.2 | 44.0 | 8.8 | 7.5 | 43.9 | 43.9 | 14.2 | 2.0 | 13.1 | 4.5 | 1.8 | 2.6 |
| Cycle Q Clear(g_c), s | 9.2 | 44.0 | 8.8 | 7.5 | 43.9 | 43.9 | 14.2 | 2.0 | 13.1 | 4.5 | 1.8 | 2.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 262 | 1842 | 454 | 135 | 1731 | 519 | 575 | 191 | 162 | 148 | 61 | 52 |
| V/C Ratio(X) | 0.80 | 2.05 | 0.26 | 0.66 | 2.08 | 2.14 | 0.83 | 0.14 | 0.85 | 0.70 | 0.36 | 0.52 |
| Avail Cap(c_a), veh/h | 468 | 1842 | 454 | 234 | 1731 | 519 | 575 | 555 | 470 | 335 | 559 | 473 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 68.0 | 53.0 | 40.5 | 67.2 | 53.1 | 53.1 | 64.7 | 61.0 | 66.0 | 70.7 | 70.9 | 71.3 |
| Incr Delay (d2), s/veh | 5.7 | 472.2 | 0.3 | 5.3 | 489.0 | 518.1 | 12.7 | 0.3 | 11.7 | 5.8 | 3.6 | 8.0 |
| 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 | 4.1 | 77.3 | 3.3 | 3.5 | 74.7 | 93.7 | 6.6 | 1.0 | 5.6 | 2.1 | 0.9 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 73.7 | 525.2 | 40.8 | 72.6 | 542.1 | 571.2 | 77.4 | 61.3 | 77.7 | 76.5 | 74.5 | 79.3 |
| LnGrp LOS | E | F | D | E | F | F | E | E | E | E | E | E |
| Approach Vol, veh/h | | 4097 | | | 4803 | | | 640 | | | 152 | |
| Approach Delay, s/veh | | 488.0 | | | 540.1 | | | 76.8 | | | 76.7 | |
| Approach LOS | | F | | | F | | | E | | | E | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 24.5 | 11.1 | 18.5 | 50.0 | 13.5 | 22.1 | 18.5 | 50.0 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6 | * 6.9 | * 6.4 | * 6.8 | * 6.1 | | | | |
| Max Green Setting (Gmax), s | * 14 | 45.9 | * 20 | * 44 | * 15 | * 46 | * 21 | * 44 | | | | |
| Max Q Clear Time (g_c+I1), s | 16.2 | 4.6 | 9.5 | 46.0 | 6.5 | 15.1 | 11.2 | 45.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.2 | 0.1 | 0.0 | 0.2 | 0.6 | 0.4 | 0.0 | | | | |

Intersection Summary

| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 480.2 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 55 | 3256 | 389 | 212 | 3868 | 160 | 400 | 32 | 187 | 197 | 69 | 104 |
| Future Volume (veh/h) | 55 | 3256 | 389 | 212 | 3868 | 160 | 400 | 32 | 187 | 197 | 69 | 104 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 60 | 3539 | 423 | 230 | 4204 | 174 | 435 | 35 | 203 | 214 | 75 | 113 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 432 | 2068 | 510 | 214 | 2428 | 99 | 816 | 267 | 226 | 256 | 105 | 89 |
| Arrive On Green | 0.13 | 0.34 | 0.34 | 0.13 | 0.34 | 0.34 | 0.17 | 0.15 | 0.15 | 0.08 | 0.06 | 0.06 |
| Sat Flow, veh/h | 3291 | 6128 | 1510 | 1697 | 7207 | 294 | 4784 | 1781 | 1510 | 3291 | 1781 | 1510 |
| Grp Volume(v), veh/h | 60 | 3539 | 423 | 230 | 3354 | 1024 | 435 | 35 | 203 | 214 | 75 | 113 |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1532 | 1510 | 1697 | 1443 | 1729 | 1595 | 1781 | 1510 | 1646 | 1781 | 1510 |
| Q Serve(g_s), s | 2.6 | 54.0 | 22.3 | 20.2 | 53.9 | 53.9 | 13.3 | 2.7 | 21.1 | 10.3 | 6.6 | 5.9 |
| Cycle Q Clear(g_c), s | 2.6 | 54.0 | 22.3 | 20.2 | 53.9 | 53.9 | 13.3 | 2.7 | 21.1 | 10.3 | 6.6 | 5.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 432 | 2068 | 510 | 214 | 1944 | 582 | 816 | 267 | 226 | 256 | 105 | 89 |
| V/C Ratio(X) | 0.14 | 1.71 | 0.83 | 1.07 | 1.72 | 1.76 | 0.53 | 0.13 | 0.90 | 0.84 | 0.72 | 1.27 |
| Avail Cap(c_a), veh/h | 432 | 2068 | 510 | 214 | 1944 | 582 | 816 | 508 | 430 | 307 | 511 | 433 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.5 | 53.0 | 14.3 | 69.9 | 53.0 | 53.1 | 60.5 | 59.0 | 66.8 | 72.8 | 74.0 | 29.6 |
| Incr Delay (d2), s/veh | 0.1 | 322.1 | 11.1 | 82.4 | 328.4 | 348.3 | 2.5 | 0.2 | 12.1 | 15.6 | 8.8 | 141.3 |
| 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 | 1.1 | 66.4 | 8.8 | 13.6 | 63.3 | 79.1 | 5.6 | 1.3 | 8.8 | 4.9 | 3.3 | 7.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.6 | 375.1 | 25.3 | 152.3 | 381.5 | 401.3 | 63.0 | 59.2 | 78.9 | 88.4 | 82.8 | 170.9 |
| LnGrp LOS | E | F | C | F | F | F | E | E | E | F | F | F |
| Approach Vol, veh/h | | 4022 | | | 4608 | | | 673 | | | 402 | |
| Approach Delay, s/veh | | 333.6 | | | 374.5 | | | 67.6 | | | 110.6 | |
| Approach LOS | | F | | | F | | | E | | | F | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 34.2 | 15.5 | 27.0 | 60.2 | 19.3 | 30.3 | 27.2 | 60.0 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6.2 | * 6.9 | * 6.4 | * 6.2 | * 6.1 | | | | |
| Max Green Setting (Gmax), s | * 14 | 45.9 | * 20 | * 54 | * 15 | * 46 | * 21 | * 54 | | | | |
| Max Q Clear Time (g_c+I1), s | 15.3 | 8.6 | 22.2 | 56.0 | 12.3 | 23.1 | 4.6 | 55.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.8 | 0.0 | 0.0 | 0.2 | 0.8 | 0.1 | 0.0 | | | | |

Intersection Summary

































| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 325.3 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
 Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    |  |  |    | |    |  |  |   |   |  |
| Traffic Volume (veh/h) | 194 | 3467 | 109 | 82 | 4167 | 170 | 437 | 25 | 127 | 95 | 20 | 25 |
| Future Volume (veh/h) | 194 | 3467 | 109 | 82 | 4167 | 170 | 437 | 25 | 127 | 95 | 20 | 25 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h | 211 | 3768 | 118 | 89 | 4529 | 185 | 475 | 27 | 138 | 103 | 22 | 27 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap, veh/h | 273 | 3769 | 1065 | 108 | 4292 | 172 | 432 | 74 | 159 | 260 | 57 | 174 |
| Arrive On Green | 0.08 | 0.60 | 0.60 | 0.06 | 0.58 | 0.58 | 0.09 | 0.04 | 0.04 | 0.08 | 0.03 | 0.03 |
| Sat Flow, veh/h | 3374 | 6281 | 1547 | 1739 | 7393 | 296 | 4904 | 1826 | 1547 | 3374 | 1826 | 1547 |
| Grp Volume(v), veh/h | 211 | 3768 | 118 | 89 | 3605 | 1109 | 475 | 27 | 138 | 103 | 22 | 27 |
| Grp Sat Flow(s),veh/h/ln | 1687 | 1570 | 1547 | 1739 | 1479 | 1773 | 1635 | 1826 | 1547 | 1687 | 1826 | 1547 |
| Q Serve(g_s), s | 9.8 | 96.0 | 0.0 | 8.1 | 92.9 | 92.9 | 14.1 | 2.3 | 4.1 | 4.7 | 1.9 | 0.0 |
| Cycle Q Clear(g_c), s | 9.8 | 96.0 | 0.0 | 8.1 | 92.9 | 92.9 | 14.1 | 2.3 | 4.1 | 4.7 | 1.9 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 273 | 3769 | 1065 | 108 | 3435 | 1029 | 432 | 74 | 159 | 260 | 57 | 174 |
| V/C Ratio(X) | 0.77 | 1.00 | 0.11 | 0.82 | 1.05 | 1.08 | 1.10 | 0.37 | 0.87 | 0.40 | 0.39 | 0.16 |
| Avail Cap(c_a), veh/h | 375 | 3769 | 1065 | 154 | 3435 | 1029 | 432 | 189 | 257 | 260 | 113 | 221 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 72.1 | 32.0 | 8.4 | 74.1 | 33.5 | 33.6 | 72.9 | 74.8 | 70.7 | 70.3 | 76.0 | 64.2 |
| Incr Delay (d2), s/veh | 6.6 | 14.6 | 0.0 | 20.6 | 30.4 | 51.3 | 72.9 | 3.0 | 16.2 | 1.0 | 4.2 | 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 | 4.4 | 37.3 | 1.3 | 4.2 | 38.1 | 51.7 | 8.8 | 1.1 | 6.2 | 2.0 | 1.0 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 78.7 | 46.6 | 8.5 | 94.8 | 64.0 | 84.8 | 145.8 | 77.8 | 86.9 | 71.3 | 80.2 | 64.6 |
| LnGrp LOS | E | D | A | F | F | F | F | E | F | E | F | E |
| Approach Vol, veh/h | | 4097 | | | 4803 | | | 640 | | | 152 | |
| Approach Delay, s/veh | | 47.2 | | | 69.4 | | | 130.3 | | | 71.4 | |
| Approach LOS | | D | | | E | | | F | | | E | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 21.0 | 11.1 | 16.8 | 102.0 | 19.2 | 12.9 | 19.8 | 99.0 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6 | * 6.9 | * 6.4 | * 6.8 | * 6.1 | | | | |
| Max Green Setting (Gmax), s | * 14 | 9.9 | * 14 | * 96 | * 7.9 | * 17 | * 18 | * 93 | | | | |
| Max Q Clear Time (g_c+I1), s | 16.1 | 3.9 | 10.1 | 98.0 | 6.7 | 6.1 | 11.8 | 94.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.4 | 0.3 | 0.0 | | | | |

Intersection Summary


































| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 64.0 |
| HCM 6th LOS | E |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
 Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    |  |   |     | |    |  |  |   |  |  |
| Traffic Volume (veh/h) | 55 | 3256 | 389 | 212 | 3868 | 160 | 400 | 32 | 187 | 197 | 69 | 104 |
| Future Volume (veh/h) | 55 | 3256 | 389 | 212 | 3868 | 160 | 400 | 32 | 187 | 197 | 69 | 104 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 60 | 3539 | 423 | 230 | 4204 | 174 | 435 | 35 | 203 | 214 | 75 | 113 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 395 | 3309 | 977 | 217 | 3983 | 162 | 512 | 150 | 320 | 255 | 101 | 267 |
| Arrive On Green | 0.12 | 0.54 | 0.54 | 0.13 | 0.55 | 0.55 | 0.11 | 0.08 | 0.08 | 0.08 | 0.06 | 0.06 |
| Sat Flow, veh/h | 3291 | 6128 | 1510 | 1697 | 7207 | 294 | 4784 | 1781 | 1510 | 3291 | 1781 | 1510 |
| Grp Volume(v), veh/h | 60 | 3539 | 423 | 230 | 3354 | 1024 | 435 | 35 | 203 | 214 | 75 | 113 |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1532 | 1510 | 1697 | 1443 | 1729 | 1595 | 1781 | 1510 | 1646 | 1781 | 1510 |
| Q Serve(g_s), s | 2.5 | 81.0 | 10.1 | 19.2 | 82.9 | 82.9 | 13.4 | 2.8 | 12.6 | 9.6 | 6.2 | 0.0 |
| Cycle Q Clear(g_c), s | 2.5 | 81.0 | 10.1 | 19.2 | 82.9 | 82.9 | 13.4 | 2.8 | 12.6 | 9.6 | 6.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 395 | 3309 | 977 | 217 | 3190 | 955 | 512 | 150 | 320 | 255 | 101 | 267 |
| V/C Ratio(X) | 0.15 | 1.07 | 0.43 | 1.06 | 1.05 | 1.07 | 0.85 | 0.23 | 0.63 | 0.84 | 0.74 | 0.42 |
| Avail Cap(c_a), veh/h | 395 | 3309 | 977 | 217 | 3190 | 955 | 512 | 150 | 320 | 261 | 153 | 311 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 59.2 | 34.5 | 4.1 | 65.4 | 33.5 | 33.6 | 65.8 | 64.2 | 31.5 | 68.2 | 69.7 | 55.0 |
| Incr Delay (d2), s/veh | 0.2 | 38.1 | 0.3 | 77.5 | 31.6 | 50.4 | 16.1 | 0.8 | 4.1 | 20.4 | 10.3 | 1.1 |
| 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 | 1.0 | 36.8 | 3.7 | 12.8 | 33.8 | 45.5 | 6.2 | 1.3 | 5.2 | 4.8 | 3.1 | 3.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 59.3 | 72.6 | 4.4 | 142.9 | 65.2 | 83.9 | 81.9 | 65.0 | 35.5 | 88.6 | 80.0 | 56.0 |
| LnGrp LOS | E | F | A | F | F | F | F | E | D | F | E | E |
| Approach Vol, veh/h | | 4022 | | | 4608 | | | 673 | | | 402 | |
| Approach Delay, s/veh | | 65.2 | | | 73.2 | | | 67.0 | | | 77.9 | |
| Approach LOS | | E | | | E | | | E | | | E | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.9 | 14.6 | 26.0 | 87.2 | 18.5 | 19.0 | 24.2 | 89.0 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6.2 | * 6.9 | * 6.4 | * 6.2 | * 6.1 | | | | |
| Max Green Setting (Gmax), s | * 11 | 12.9 | * 19 | * 81 | * 12 | * 13 | * 18 | * 83 | | | | |
| Max Q Clear Time (g_c+I1), s | 15.4 | 8.2 | 21.2 | 83.0 | 11.6 | 14.6 | 4.5 | 84.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | | | | | | | | 69.7 | |
| HCM 6th LOS | | | | | | | | | | | E | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

HCM 6th Signalized Intersection Summary
 1: US 95 SB Ramps & Sunset Rd

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|-------|------|------|-----|------|-----|------|------|------|
| Lane Configurations | | ↑↑↑ | ↗↗ | ↘ | ↑↑↑ | | | | | ↘ | ↖ | ↗↗ |
| Traffic Volume (veh/h) | 0 | 1252 | 838 | 188 | 1132 | 0 | 0 | 0 | 0 | 340 | 0 | 560 |
| Future Volume (veh/h) | 0 | 1252 | 838 | 188 | 1132 | 0 | 0 | 0 | 0 | 340 | 0 | 560 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | 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 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1781 | 1781 | 1781 | 1781 | 0 | | | | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 0 | 1361 | 911 | 204 | 1230 | 0 | | | | 370 | 0 | 609 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 8 | 8 | 8 | 8 | 0 | | | | 8 | 8 | 8 |
| Cap, veh/h | 0 | 2049 | 1120 | 244 | 3113 | 0 | | | | 662 | 0 | 589 |
| Arrive On Green | 0.00 | 0.42 | 0.42 | 0.14 | 0.64 | 0.00 | | | | 0.19 | 0.00 | 0.19 |
| Sat Flow, veh/h | 0 | 5024 | 2657 | 1697 | 5024 | 0 | | | | 3393 | 0 | 3019 |
| Grp Volume(v), veh/h | 0 | 1361 | 911 | 204 | 1230 | 0 | | | | 370 | 0 | 609 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1621 | 1329 | 1697 | 1621 | 0 | | | | 1697 | 0 | 1510 |
| Q Serve(g_s), s | 0.0 | 18.0 | 24.2 | 9.4 | 9.7 | 0.0 | | | | 7.9 | 0.0 | 15.6 |
| Cycle Q Clear(g_c), s | 0.0 | 18.0 | 24.2 | 9.4 | 9.7 | 0.0 | | | | 7.9 | 0.0 | 15.6 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 2049 | 1120 | 244 | 3113 | 0 | | | | 662 | 0 | 589 |
| V/C Ratio(X) | 0.00 | 0.66 | 0.81 | 0.84 | 0.40 | 0.00 | | | | 0.56 | 0.00 | 1.03 |
| Avail Cap(c_a), veh/h | 0 | 2049 | 1120 | 361 | 3113 | 0 | | | | 662 | 0 | 589 |
| HCM Platoon Ratio | 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 | 0.78 | 0.78 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 18.6 | 20.4 | 33.3 | 6.9 | 0.0 | | | | 29.1 | 0.0 | 32.2 |
| Incr Delay (d2), s/veh | 0.0 | 0.8 | 4.7 | 8.5 | 0.3 | 0.0 | | | | 3.4 | 0.0 | 46.2 |
| Initial Q Delay(d3),s/veh | 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 | 6.0 | 7.2 | 4.2 | 2.5 | 0.0 | | | | 3.3 | 0.0 | 9.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 19.4 | 25.1 | 41.8 | 7.2 | 0.0 | | | | 32.5 | 0.0 | 78.4 |
| LnGrp LOS | A | B | C | D | A | A | | | | C | A | F |
| Approach Vol, veh/h | | 2272 | | | 1434 | | | | | 979 | | |
| Approach Delay, s/veh | | 21.7 | | | 12.2 | | | | | 61.1 | | |
| Approach LOS | | C | | | B | | | | | E | | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 22.0 | 17.5 | 40.5 | | | | 58.0 | | | | |
| Change Period (Y+Rc), s | | 6.4 | 6.0 | * 6.8 | | | | 6.8 | | | | |
| Max Green Setting (Gmax), s | | 15.6 | 17.0 | * 30 | | | | 51.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 17.6 | 11.4 | 26.2 | | | | 11.7 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.3 | 2.9 | | | | 10.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 27.0 |
| HCM 6th LOS | C |

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

2: US 95 NB Ramps & Sunset Rd

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|
| Lane Configurations | ↗↘ | ↑↑↑ | | | ↑↑↑ | ↗↘ | ↗↘ | ↑ | ↗ | | | |
| Traffic Volume (veh/h) | 476 | 1004 | 0 | 0 | 751 | 519 | 755 | 2 | 373 | 0 | 0 | 0 |
| Future Volume (veh/h) | 476 | 1004 | 0 | 0 | 751 | 519 | 755 | 2 | 373 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 0 | 0 | 1781 | 1781 | 1781 | 1781 | 1781 | | | |
| Adj Flow Rate, veh/h | 517 | 1091 | 0 | 0 | 816 | 0 | 822 | 0 | 0 | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | | |
| Percent Heavy Veh, % | 8 | 8 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | | | |
| Cap, veh/h | 622 | 3276 | 0 | 0 | 2054 | | 1025 | 0 | | | | |
| Arrive On Green | 0.19 | 0.67 | 0.00 | 0.00 | 0.42 | 0.00 | 0.20 | 0.00 | 0.00 | | | |
| Sat Flow, veh/h | 3291 | 5024 | 0 | 0 | 5024 | 2657 | 5090 | 0 | 1510 | | | |
| Grp Volume(v), veh/h | 517 | 1091 | 0 | 0 | 816 | 0 | 822 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1621 | 0 | 0 | 1621 | 1329 | 1697 | 0 | 1510 | | | |
| Q Serve(g_s), s | 12.1 | 7.6 | 0.0 | 0.0 | 9.3 | 0.0 | 12.3 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 12.1 | 7.6 | 0.0 | 0.0 | 9.3 | 0.0 | 12.3 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 622 | 3276 | 0 | 0 | 2054 | | 1025 | 0 | | | | |
| V/C Ratio(X) | 0.83 | 0.33 | 0.00 | 0.00 | 0.40 | | 0.80 | 0.00 | | | | |
| Avail Cap(c_a), veh/h | 823 | 3276 | 0 | 0 | 2054 | | 1272 | 0 | | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.67 | 0.67 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 31.2 | 5.5 | 0.0 | 0.0 | 16.0 | 0.0 | 30.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 3.8 | 0.2 | 0.0 | 0.0 | 0.6 | 0.0 | 3.1 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 4.8 | 1.8 | 0.0 | 0.0 | 3.1 | 0.0 | 5.1 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 35.0 | 5.7 | 0.0 | 0.0 | 16.6 | 0.0 | 33.5 | 0.0 | 0.0 | | | |
| LnGrp LOS | D | A | A | A | B | | C | A | | | | |
| Approach Vol, veh/h | | 1608 | | | 816 | A | | 822 | A | | | |
| Approach Delay, s/veh | | 15.1 | | | 16.6 | | | 33.5 | | | | |
| Approach LOS | | B | | | B | | | C | | | | |
| Timer - Assigned Phs | | | | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | | | 58.9 | | 21.1 | 20.1 | 38.8 | | | | |
| Change Period (Y+Rc), s | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | | |
| Max Green Setting (Gmax), s | | | | 50.0 | | 20.0 | 20.0 | 25.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | | | 9.6 | | 14.3 | 14.1 | 11.3 | | | | |
| Green Ext Time (p_c), s | | | | 8.8 | | 1.8 | 1.0 | 4.4 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 20.1 |
| HCM 6th LOS | C |

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 12: Gibson Rd & I-215 WB Ramp

Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-----|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | | | | ↙ | ↖ | ↗ | ↘↙ | ↘↖ | | | ↗↘ | ↗↘ |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 585 | 6 | 348 | 274 | 1106 | 0 | 0 | 913 | 747 |
| Future Volume (veh/h) | 0 | 0 | 0 | 585 | 6 | 348 | 274 | 1106 | 0 | 0 | 913 | 747 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | | | | 1781 | 1781 | 1781 | 1781 | 1781 | 0 | 0 | 1781 | 1781 |
| Adj Flow Rate, veh/h | | | | 641 | 0 | 378 | 298 | 1202 | 0 | 0 | 992 | 0 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 8 | 8 | 8 | 8 | 8 | 0 | 0 | 8 | 8 |
| Cap, veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| Arrive On Green | | | | 0.28 | 0.00 | 0.28 | 0.17 | 0.62 | 0.00 | 0.00 | 0.41 | 0.00 |
| Sat Flow, veh/h | | | | 3393 | 0 | 1510 | 3291 | 5024 | 0 | 0 | 5184 | 0 |
| Grp Volume(v), veh/h | | | | 641 | 0 | 378 | 298 | 1202 | 0 | 0 | 992 | 0 |
| Grp Sat Flow(s),veh/h/ln | | | | 1697 | 0 | 1510 | 1646 | 1621 | 0 | 0 | 1621 | 0 |
| Q Serve(g_s), s | | | | 20.2 | 0.0 | 29.0 | 9.9 | 14.8 | 0.0 | 0.0 | 18.1 | 0.0 |
| Cycle Q Clear(g_c), s | | | | 20.2 | 0.0 | 29.0 | 9.9 | 14.8 | 0.0 | 0.0 | 18.1 | 0.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| V/C Ratio(X) | | | | 0.68 | 0.00 | 0.90 | 0.52 | 0.40 | 0.00 | 0.00 | 0.50 | |
| Avail Cap(c_a), veh/h | | | | 939 | 0 | 418 | 571 | 3031 | 0 | 0 | 2002 | |
| HCM Platoon Ratio | | | | 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 | 0.50 | 0.50 | 0.00 | 0.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | | | | 38.7 | 0.0 | 41.9 | 45.1 | 11.3 | 0.0 | 0.0 | 26.1 | 0.0 |
| Incr Delay (d2), s/veh | | | | 4.0 | 0.0 | 25.7 | 0.4 | 0.2 | 0.0 | 0.0 | 0.9 | 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 |
| %ile BackOfQ(50%),veh/ln | | | | 8.6 | 0.0 | 13.3 | 4.0 | 4.9 | 0.0 | 0.0 | 6.9 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 42.7 | 0.0 | 67.5 | 45.5 | 11.5 | 0.0 | 0.0 | 27.0 | 0.0 |
| LnGrp LOS | | | | D | A | E | D | B | A | A | C | |
| Approach Vol, veh/h | | | | | 1019 | | | 1500 | | | 992 | A |
| Approach Delay, s/veh | | | | | 51.9 | | | 18.3 | | | 27.0 | |
| Approach LOS | | | | | D | | | B | | | C | |
| Timer - Assigned Phs | 1 | 2 | | | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 26.5 | 54.0 | | | | 80.5 | | 40.0 | | | | |
| Change Period (Y+Rc), s | * 5.7 | * 4.6 | | | | * 5.7 | | 6.8 | | | | |
| Max Green Setting (Gmax), s | * 20 | * 49 | | | | * 75 | | 33.2 | | | | |
| Max Q Clear Time (g_c+I1), s | 11.9 | 20.1 | | | | 16.8 | | 31.0 | | | | |
| Green Ext Time (p_c), s | 0.7 | 7.6 | | | | 11.0 | | 1.0 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 30.5 |
| HCM 6th LOS | C |

Notes

- User approved volume balancing among the lanes for turning movement.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
- Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 13: Gibson Rd & I-215 EB Ramp

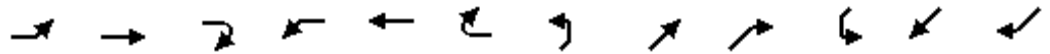
Henderson Interchange
 Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|------|-------|------|------|------|-------|------|------|------|------|------|------|
| Lane Configurations | ↗ | ↖ | ↗ | | | | | ↑↑↑ | | ↗↖ | ↑↑↑ | |
| Traffic Volume (veh/h) | 520 | 11 | 649 | 0 | 0 | 0 | 0 | 730 | 280 | 341 | 1219 | 0 |
| Future Volume (veh/h) | 520 | 11 | 649 | 0 | 0 | 0 | 0 | 730 | 280 | 341 | 1219 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 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 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1781 | 1781 | | | | 0 | 1781 | 1781 | 1781 | 1781 | 0 |
| Adj Flow Rate, veh/h | 574 | 0 | 0 | | | | 0 | 793 | 0 | 371 | 1325 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | | | | 0 | 8 | 8 | 8 | 8 | 0 |
| Cap, veh/h | 670 | 0 | | | | | 0 | 2493 | | 433 | 3396 | 0 |
| Arrive On Green | 0.20 | 0.00 | 0.00 | | | | 0.00 | 0.51 | 0.00 | 0.13 | 0.70 | 0.00 |
| Sat Flow, veh/h | 3393 | 0 | 1510 | | | | 0 | 5184 | 0 | 3291 | 5024 | 0 |
| Grp Volume(v), veh/h | 574 | 0 | 0 | | | | 0 | 793 | 0 | 371 | 1325 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1510 | | | | 0 | 1621 | 0 | 1646 | 1621 | 0 |
| Q Serve(g_s), s | 19.6 | 0.0 | 0.0 | | | | 0.0 | 11.4 | 0.0 | 13.2 | 13.6 | 0.0 |
| Cycle Q Clear(g_c), s | 19.6 | 0.0 | 0.0 | | | | 0.0 | 11.4 | 0.0 | 13.2 | 13.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 670 | 0 | | | | | 0 | 2493 | | 433 | 3396 | 0 |
| V/C Ratio(X) | 0.86 | 0.00 | | | | | 0.00 | 0.32 | | 0.86 | 0.39 | 0.00 |
| Avail Cap(c_a), veh/h | 1501 | 0 | | | | | 0 | 2493 | | 535 | 3396 | 0 |
| HCM Platoon Ratio | 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 | 0.00 | | | | 0.00 | 1.00 | 0.00 | 0.33 | 0.33 | 0.00 |
| Uniform Delay (d), s/veh | 46.5 | 0.0 | 0.0 | | | | 0.0 | 17.0 | 0.0 | 51.0 | 7.5 | 0.0 |
| Incr Delay (d2), s/veh | 3.3 | 0.0 | 0.0 | | | | 0.0 | 0.1 | 0.0 | 4.0 | 0.1 | 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 |
| %ile BackOfQ(50%),veh/ln | 8.3 | 0.0 | 0.0 | | | | 0.0 | 4.0 | 0.0 | 5.6 | 4.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 49.8 | 0.0 | 0.0 | | | | 0.0 | 17.1 | 0.0 | 55.0 | 7.6 | 0.0 |
| LnGrp LOS | D | A | | | | | A | B | | E | A | A |
| Approach Vol, veh/h | | 574 | A | | | | | 793 | A | | 1696 | |
| Approach Delay, s/veh | | 49.8 | | | | | | 17.1 | | | 18.0 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | | 89.4 | | 30.6 | 22.3 | 67.1 | | | | | | |
| Change Period (Y+Rc), s | | * 5.6 | | 6.9 | 6.5 | * 5.6 | | | | | | |
| Max Green Setting (Gmax), s | | * 55 | | 53.1 | 19.5 | * 28 | | | | | | |
| Max Q Clear Time (g_c+I1), s | | 15.6 | | 21.6 | 15.2 | 13.4 | | | | | | |
| Green Ext Time (p_c), s | | 12.0 | | 2.1 | 0.5 | 4.4 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 23.7 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |
| Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay. | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
16: Horizon Dr

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | |
|-----------------------------------|------|------|--------|------|---------------------------|------|------|-------|------|------|------|------|--|
| Lane Configurations | | | | | ↑↑ | | | ↑↑ | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 1556 | 0 | 0 | 745 | 0 | 0 | 0 | 0 | |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 1556 | 0 | 0 | 745 | 0 | 0 | 0 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.0 | | | 7.0 | | | | | |
| Lane Util. Factor | | | | | 0.95 | | | 0.95 | | | | | |
| Frt | | | | | 1.00 | | | 1.00 | | | | | |
| Flt Protected | | | | | 1.00 | | | 1.00 | | | | | |
| Satd. Flow (prot) | | | | | 3343 | | | 3343 | | | | | |
| Flt Permitted | | | | | 1.00 | | | 1.00 | | | | | |
| Satd. Flow (perm) | | | | | 3343 | | | 3343 | | | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 1691 | 0 | 0 | 810 | 0 | 0 | 0 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 1691 | 0 | 0 | 810 | 0 | 0 | 0 | 0 | |
| Turn Type | | | | | NA | | | NA | | | | | |
| Protected Phases | | | | | 2 | | | 4 | | | | | |
| Permitted Phases | | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | 38.0 | | | 38.0 | | | | | |
| Effective Green, g (s) | | | | | 38.0 | | | 38.0 | | | | | |
| Actuated g/C Ratio | | | | | 0.42 | | | 0.42 | | | | | |
| Clearance Time (s) | | | | | 7.0 | | | 7.0 | | | | | |
| Vehicle Extension (s) | | | | | 3.0 | | | 3.0 | | | | | |
| Lane Grp Cap (vph) | | | | | 1411 | | | 1411 | | | | | |
| v/s Ratio Prot | | | | | c0.51 | | | c0.24 | | | | | |
| v/s Ratio Perm | | | | | | | | | | | | | |
| v/c Ratio | | | | | 1.20 | | | 0.57 | | | | | |
| Uniform Delay, d1 | | | | | 26.0 | | | 19.8 | | | | | |
| Progression Factor | | | | | 1.20 | | | 1.00 | | | | | |
| Incremental Delay, d2 | | | | | 94.9 | | | 0.6 | | | | | |
| Delay (s) | | | | | 126.1 | | | 20.4 | | | | | |
| Level of Service | | | | | F | | | C | | | | | |
| Approach Delay (s) | | 0.0 | | | 126.1 | | | 20.4 | | | 0.0 | | |
| Approach LOS | | A | | | F | | | C | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 91.9 | | HCM 2000 Level of Service | | | | F | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.89 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | | | | 14.0 | | | | |
| Intersection Capacity Utilization | | | 100.0% | | ICU Level of Service | | | | G | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

c Critical Lane Group

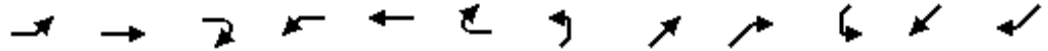
HCM Signalized Intersection Capacity Analysis
 17: Horizon Dr & US 95 SB Ramps



| Movement | WBL | WBR | SBL | SBR | NEL | NER |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | | | TT | | | TT |
| Traffic Volume (vph) | 0 | 0 | 1343 | 0 | 0 | 745 |
| Future Volume (vph) | 0 | 0 | 1343 | 0 | 0 | 745 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 0.97 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 0.95 | | | 1.00 |
| Satd. Flow (prot) | | | 3242 | | | 2632 |
| Flt Permitted | | | 0.95 | | | 1.00 |
| Satd. Flow (perm) | | | 3242 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1460 | 0 | 0 | 810 |
| RTOR Reduction (vph) | 0 | 0 | 429 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 1031 | 0 | 0 | 810 |
| Turn Type | | | Prot | | | custom |
| Protected Phases | | | 2! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 38.0 | | | 90.0 |
| Effective Green, g (s) | | | 38.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.42 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 1368 | | | 2632 |
| v/s Ratio Prot | | | c0.32 | | | 0.31 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.75 | | | 0.31 |
| Uniform Delay, d1 | | | 22.0 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 3.9 | | | 0.3 |
| Delay (s) | | | 25.9 | | | 0.3 |
| Level of Service | | | C | | | A |
| Approach Delay (s) | 0.0 | | 25.9 | | 0.3 | |
| Approach LOS | A | | C | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 16.8 | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.56 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 47.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
18: Horizon Dr

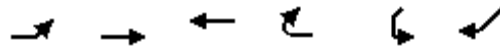
Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NEL | NET | NER | SWL | SWT | SWR | | |
|-----------------------------------|------|-------|-------|------|------|------|------|------|------|------|-------|---------------------------|----------------------|---|
| Lane Configurations | | ↑↑ | | | | | | | | | ↑↑ | | | |
| Traffic Volume (vph) | 0 | 1463 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1605 | 0 | | |
| Future Volume (vph) | 0 | 1463 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1605 | 0 | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | |
| Total Lost time (s) | | 7.0 | | | | | | | | | 7.0 | | | |
| Lane Util. Factor | | 0.95 | | | | | | | | | 0.95 | | | |
| Frt | | 1.00 | | | | | | | | | 1.00 | | | |
| Flt Protected | | 1.00 | | | | | | | | | 1.00 | | | |
| Satd. Flow (prot) | | 3343 | | | | | | | | | 3343 | | | |
| Flt Permitted | | 1.00 | | | | | | | | | 1.00 | | | |
| Satd. Flow (perm) | | 3343 | | | | | | | | | 3343 | | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | |
| Adj. Flow (vph) | 0 | 1590 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1745 | 0 | | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Lane Group Flow (vph) | 0 | 1590 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1745 | 0 | | |
| Turn Type | | NA | | | | | | | | | NA | | | |
| Protected Phases | | 4 | | | | | | | | | 2 | | | |
| Permitted Phases | | | | | | | | | | | | | | |
| Actuated Green, G (s) | | 38.0 | | | | | | | | | 38.0 | | | |
| Effective Green, g (s) | | 38.0 | | | | | | | | | 38.0 | | | |
| Actuated g/C Ratio | | 0.42 | | | | | | | | | 0.42 | | | |
| Clearance Time (s) | | 7.0 | | | | | | | | | 7.0 | | | |
| Vehicle Extension (s) | | 3.0 | | | | | | | | | 3.0 | | | |
| Lane Grp Cap (vph) | | 1411 | | | | | | | | | 1411 | | | |
| v/s Ratio Prot | | c0.48 | | | | | | | | | c0.52 | | | |
| v/s Ratio Perm | | | | | | | | | | | | | | |
| v/c Ratio | | 1.13 | | | | | | | | | 1.24 | | | |
| Uniform Delay, d1 | | 26.0 | | | | | | | | | 26.0 | | | |
| Progression Factor | | 0.92 | | | | | | | | | 1.00 | | | |
| Incremental Delay, d2 | | 65.0 | | | | | | | | | 112.8 | | | |
| Delay (s) | | 88.8 | | | | | | | | | 138.8 | | | |
| Level of Service | | F | | | | | | | | | F | | | |
| Approach Delay (s) | | 88.8 | | | 0.0 | | | 0.0 | | | 138.8 | | | |
| Approach LOS | | F | | | A | | | A | | | F | | | |
| Intersection Summary | | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 115.0 | | | | | | | | | HCM 2000 Level of Service | F | |
| HCM 2000 Volume to Capacity ratio | | | 1.18 | | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 90.0 | | | | | | | | 14.0 | | Sum of lost time (s) | |
| Intersection Capacity Utilization | | | 95.4% | | | | | | | | | | ICU Level of Service | F |
| Analysis Period (min) | | | 15 | | | | | | | | | | | |

c Critical Lane Group

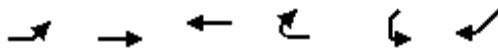
HCM Signalized Intersection Capacity Analysis
 19: Horizon Dr/US 95 NB Ramps



| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|-------|------|---------------------------|--------|
| Lane Configurations | | | ↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 0 | 329 | 0 | 0 | 1605 |
| Future Volume (vph) | 0 | 0 | 329 | 0 | 0 | 1605 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 7.0 | | | 4.0 |
| Lane Util. Factor | | | 1.00 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 1759 | | | 2632 |
| Flt Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 1759 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 358 | 0 | 0 | 1745 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 358 | 0 | 0 | 1745 |
| Turn Type | | | NA | | | custom |
| Protected Phases | | | 4! | | | Free! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 38.0 | | | 90.0 |
| Effective Green, g (s) | | | 38.0 | | | 90.0 |
| Actuated g/C Ratio | | | 0.42 | | | 1.00 |
| Clearance Time (s) | | | 7.0 | | | |
| Vehicle Extension (s) | | | 3.0 | | | |
| Lane Grp Cap (vph) | | | 742 | | | 2632 |
| v/s Ratio Prot | | | 0.20 | | | 0.66 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.48 | | | 0.66 |
| Uniform Delay, d1 | | | 18.9 | | | 0.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.5 | | | 0.1 |
| Delay (s) | | | 19.4 | | | 0.1 |
| Level of Service | | | B | | | A |
| Approach Delay (s) | | 0.0 | 19.4 | | 0.1 | |
| Approach LOS | | A | B | | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.4 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.79 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 31.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM Signalized Intersection Capacity Analysis
20: Horizon Dr & US 95 SB Ramps

Henderson Interchange
Feasibility Study



| Movement | EBL | EBT | WBT | WBR | SWL | SWR |
|---------------------------------------|------|------|--------|------|---------------------------|-------|
| Lane Configurations | | | ↑↑ | | | ↑↑ |
| Traffic Volume (vph) | 0 | 0 | 1556 | 0 | 0 | 1367 |
| Future Volume (vph) | 0 | 0 | 1556 | 0 | 0 | 1367 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | 4.0 | | | 7.0 |
| Lane Util. Factor | | | 0.95 | | | 0.88 |
| Frt | | | 1.00 | | | 0.85 |
| Flt Protected | | | 1.00 | | | 1.00 |
| Satd. Flow (prot) | | | 3343 | | | 2632 |
| Flt Permitted | | | 1.00 | | | 1.00 |
| Satd. Flow (perm) | | | 3343 | | | 2632 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 1691 | 0 | 0 | 1486 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 1691 | 0 | 0 | 1486 |
| Turn Type | | | NA | | | Prot |
| Protected Phases | | | Free! | | | 4! |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | | | 90.0 | | | 38.0 |
| Effective Green, g (s) | | | 90.0 | | | 38.0 |
| Actuated g/C Ratio | | | 1.00 | | | 0.42 |
| Clearance Time (s) | | | | | | 7.0 |
| Vehicle Extension (s) | | | | | | 3.0 |
| Lane Grp Cap (vph) | | | 3343 | | | 1111 |
| v/s Ratio Prot | | | 0.51 | | | c0.56 |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | 0.51 | | | 1.34 |
| Uniform Delay, d1 | | | 0.0 | | | 26.0 |
| Progression Factor | | | 1.00 | | | 1.00 |
| Incremental Delay, d2 | | | 0.0 | | | 158.1 |
| Delay (s) | | | 0.0 | | | 184.1 |
| Level of Service | | | A | | | F |
| Approach Delay (s) | | 0.0 | 0.0 | | 184.1 | |
| Approach LOS | | A | A | | F | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 86.1 | | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | | | 0.97 | | | |
| Actuated Cycle Length (s) | | | 90.0 | | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | | | 100.0% | | ICU Level of Service | G |
| Analysis Period (min) | | | 15 | | | |
| ! Phase conflict between lane groups. | | | | | | |
| c Critical Lane Group | | | | | | |

HCM 6th Signalized Intersection Summary
 15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
 Feasibility Study

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 55 | 3256 | 389 | 212 | 3868 | 160 | 504 | 41 | 236 | 197 | 69 | 104 |
| Future Volume (veh/h) | 55 | 3256 | 389 | 212 | 3868 | 160 | 504 | 41 | 236 | 197 | 69 | 104 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 60 | 3539 | 423 | 230 | 4204 | 174 | 548 | 45 | 257 | 214 | 75 | 113 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 432 | 2068 | 510 | 214 | 2428 | 99 | 988 | 331 | 280 | 256 | 105 | 89 |
| Arrive On Green | 0.13 | 0.34 | 0.34 | 0.13 | 0.34 | 0.34 | 0.21 | 0.19 | 0.19 | 0.08 | 0.06 | 0.06 |
| Sat Flow, veh/h | 3291 | 6128 | 1510 | 1697 | 7207 | 294 | 4784 | 1781 | 1510 | 3291 | 1781 | 1510 |
| Grp Volume(v), veh/h | 60 | 3539 | 423 | 230 | 3354 | 1024 | 548 | 45 | 257 | 214 | 75 | 113 |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1532 | 1510 | 1697 | 1443 | 1729 | 1595 | 1781 | 1510 | 1646 | 1781 | 1510 |
| Q Serve(g_s), s | 2.6 | 54.0 | 24.6 | 20.2 | 53.9 | 53.9 | 16.4 | 3.4 | 26.7 | 10.3 | 6.6 | 6.2 |
| Cycle Q Clear(g_c), s | 2.6 | 54.0 | 24.6 | 20.2 | 53.9 | 53.9 | 16.4 | 3.4 | 26.7 | 10.3 | 6.6 | 6.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 432 | 2068 | 510 | 214 | 1944 | 582 | 988 | 331 | 280 | 256 | 105 | 89 |
| V/C Ratio(X) | 0.14 | 1.71 | 0.83 | 1.07 | 1.72 | 1.76 | 0.55 | 0.14 | 0.92 | 0.84 | 0.72 | 1.27 |
| Avail Cap(c_a), veh/h | 432 | 2068 | 510 | 214 | 1944 | 582 | 988 | 508 | 430 | 307 | 511 | 433 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.5 | 53.0 | 17.3 | 69.9 | 53.0 | 53.1 | 56.9 | 54.4 | 63.9 | 72.8 | 74.0 | 33.3 |
| Incr Delay (d2), s/veh | 0.1 | 322.1 | 11.1 | 82.4 | 328.4 | 348.3 | 2.2 | 0.2 | 17.7 | 15.6 | 8.8 | 141.3 |
| 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 | 1.1 | 66.4 | 9.8 | 13.6 | 63.3 | 79.1 | 6.8 | 1.5 | 11.5 | 4.9 | 3.3 | 7.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.6 | 375.1 | 28.4 | 152.3 | 381.5 | 401.3 | 59.1 | 54.6 | 81.6 | 88.4 | 82.8 | 174.6 |
| LnGrp LOS | E | F | C | F | F | F | E | D | F | F | F | F |
| Approach Vol, veh/h | | 4022 | | | 4608 | | | 850 | | | 402 | |
| Approach Delay, s/veh | | 333.9 | | | 374.5 | | | 65.7 | | | 111.6 | |
| Approach LOS | | F | | | F | | | E | | | F | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 40.0 | 15.5 | 27.0 | 60.2 | 19.3 | 36.1 | 27.2 | 60.0 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6.2 | * 6.9 | * 6.4 | * 6.2 | * 6.1 | | | | |
| Max Green Setting (Gmax), s | * 14 | 45.9 | * 20 | * 54 | * 15 | * 46 | * 21 | * 54 | | | | |
| Max Q Clear Time (g_c+I1), s | 18.4 | 8.6 | 22.2 | 56.0 | 12.3 | 28.7 | 4.6 | 55.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.8 | 0.0 | 0.0 | 0.2 | 1.0 | 0.1 | 0.0 | | | | |

Intersection Summary




































| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 320.7 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
15: Eastgate Rd & Lake Mead Pkwy

Henderson Interchange
Feasibility Study

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    |  |   |     | |    |  |  |   |   |   |
| Traffic Volume (veh/h) | 55 | 3256 | 389 | 212 | 3868 | 160 | 504 | 41 | 236 | 197 | 69 | 104 |
| Future Volume (veh/h) | 55 | 3256 | 389 | 212 | 3868 | 160 | 504 | 41 | 236 | 197 | 69 | 104 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h | 60 | 3539 | 423 | 230 | 4204 | 174 | 548 | 45 | 257 | 214 | 75 | 113 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 395 | 3309 | 977 | 217 | 3983 | 162 | 512 | 150 | 320 | 255 | 101 | 267 |
| Arrive On Green | 0.12 | 0.54 | 0.54 | 0.13 | 0.55 | 0.55 | 0.11 | 0.08 | 0.08 | 0.08 | 0.06 | 0.06 |
| Sat Flow, veh/h | 3291 | 6128 | 1510 | 1697 | 7207 | 294 | 4784 | 1781 | 1510 | 3291 | 1781 | 1510 |
| Grp Volume(v), veh/h | 60 | 3539 | 423 | 230 | 3354 | 1024 | 548 | 45 | 257 | 214 | 75 | 113 |
| Grp Sat Flow(s),veh/h/ln | 1646 | 1532 | 1510 | 1697 | 1443 | 1729 | 1595 | 1781 | 1510 | 1646 | 1781 | 1510 |
| Q Serve(g_s), s | 2.5 | 81.0 | 10.1 | 19.2 | 82.9 | 82.9 | 16.0 | 3.6 | 12.6 | 9.6 | 6.2 | 0.0 |
| Cycle Q Clear(g_c), s | 2.5 | 81.0 | 10.1 | 19.2 | 82.9 | 82.9 | 16.0 | 3.6 | 12.6 | 9.6 | 6.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 395 | 3309 | 977 | 217 | 3190 | 955 | 512 | 150 | 320 | 255 | 101 | 267 |
| V/C Ratio(X) | 0.15 | 1.07 | 0.43 | 1.06 | 1.05 | 1.07 | 1.07 | 0.30 | 0.80 | 0.84 | 0.74 | 0.42 |
| Avail Cap(c_a), veh/h | 395 | 3309 | 977 | 217 | 3190 | 955 | 512 | 150 | 320 | 261 | 153 | 311 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 59.2 | 34.5 | 4.1 | 65.4 | 33.5 | 33.6 | 67.0 | 64.6 | 35.8 | 68.2 | 69.7 | 55.0 |
| Incr Delay (d2), s/veh | 0.2 | 38.1 | 0.3 | 77.5 | 31.6 | 50.4 | 60.0 | 1.1 | 13.7 | 20.4 | 10.3 | 1.1 |
| 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 | 1.0 | 36.8 | 3.7 | 12.8 | 33.8 | 45.5 | 9.4 | 1.7 | 9.2 | 4.8 | 3.1 | 3.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 59.3 | 72.6 | 4.4 | 142.9 | 65.2 | 83.9 | 127.0 | 65.7 | 49.5 | 88.6 | 80.0 | 56.0 |
| LnGrp LOS | E | F | A | F | F | F | F | E | D | F | E | E |
| Approach Vol, veh/h | | 4022 | | | 4608 | | | 850 | | | 402 | |
| Approach Delay, s/veh | | 65.2 | | | 73.2 | | | 100.3 | | | 77.9 | |
| Approach LOS | | E | | | E | | | F | | | E | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.9 | 14.6 | 26.0 | 87.2 | 18.5 | 19.0 | 24.2 | 89.0 | | | | |
| Change Period (Y+Rc), s | * 6.9 | 6.1 | * 6.8 | * 6.2 | * 6.9 | * 6.4 | * 6.2 | * 6.1 | | | | |
| Max Green Setting (Gmax), s | * 11 | 12.9 | * 19 | * 81 | * 12 | * 13 | * 18 | * 83 | | | | |
| Max Q Clear Time (g_c+I1), s | 18.0 | 8.2 | 21.2 | 83.0 | 11.6 | 14.6 | 4.5 | 84.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 72.5 | | | | | | | | |
| HCM 6th LOS | | | | E | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |