












HCM Signalized Intersection Capacity Analysis

10: I-85 NB Ramps & Woodruff Road

5/27/2011

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | NBL | NBR | SET | SER | NWL | NWT |
| Lane Configurations |  |  |  |  | |  |
| Volume (vph) | 489 | 816 | 1128 | 255 | 0 | 1484 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.6 | 5.6 | 6.5 | 6.5 | | 6.5 |
| Lane Util. Factor | 0.97 | 0.88 | 0.95 | 1.00 | | 0.95 |
| Frt | 1.00 | 0.85 | 1.00 | 0.85 | | 1.00 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 |
| Satd. Flow (prot) | 3335 | 2707 | 3438 | 1538 | | 3438 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 |
| Satd. Flow (perm) | 3335 | 2707 | 3438 | 1538 | | 3438 |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 543 | 907 | 1253 | 283 | 0 | 1649 |
| RTOR Reduction (vph) | 0 | 279 | 0 | 117 | 0 | 0 |
| Lane Group Flow (vph) | 543 | 628 | 1253 | 166 | 0 | 1649 |
| Turn Type | | Prot | | Perm | | |
| Protected Phases | 3 | 3 | 2 | | | 2 4 |
| Permitted Phases | | | | 2 | | |
| Actuated Green, G (s) | 20.4 | 20.4 | 70.5 | 70.5 | | 87.5 |
| Effective Green, g (s) | 20.4 | 20.4 | 70.5 | 70.5 | | 80.5 |
| Actuated g/C Ratio | 0.17 | 0.17 | 0.59 | 0.59 | | 0.67 |
| Clearance Time (s) | 5.6 | 5.6 | 6.5 | 6.5 | | |
| Vehicle Extension (s) | 4.3 | 4.3 | 4.3 | 4.3 | | |
| Lane Grp Cap (vph) | 567 | 460 | 2020 | 904 | | 2306 |
| v/s Ratio Prot | 0.16 | c0.23 | 0.36 | | | c0.48 |
| v/s Ratio Perm | | | | 0.11 | | |
| v/c Ratio | 0.96 | 1.37 | 0.62 | 0.18 | | 0.72 |
| Uniform Delay, d1 | 49.4 | 49.8 | 16.1 | 11.4 | | 12.5 |
| Progression Factor | 1.00 | 1.00 | 0.00 | 0.00 | | 1.15 |
| Incremental Delay, d2 | 27.5 | 178.0 | 0.1 | 0.0 | | 0.5 |
| Delay (s) | 76.9 | 227.8 | 0.1 | 0.0 | | 14.9 |
| Level of Service | E | F | A | A | | B |
| Approach Delay (s) | 171.3 | | 0.1 | | | 14.9 |
| Approach LOS | F | | A | | | B |
| Intersection Summary | | | | | | |
| HCM Average Control Delay | | | 58.9 | | HCM Level of Service | E |
| HCM Volume to Capacity ratio | | | 0.84 | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | 18.6 |
| Intersection Capacity Utilization | | | 69.8% | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |