









HCM Signalized Intersection Capacity Analysis

2: I-385 NB Ramps & Roper Mountain Road

6/6/2011

| |  | | | | | | | | | | | |
|-----------------------------------|--|------|--------|---|---|---|---|---|------|------|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | |  |  |  |  |  | | |  |  |
| Volume (vph) | 0 | 0 | 0 | 687 | 0 | 757 | 536 | 1800 | 0 | 0 | 2281 | 793 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | | 6.0 | 6.0 |
| Lane Util. Factor | | | | 0.95 | 0.95 | 0.88 | 0.97 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1633 | 1633 | 2707 | 3335 | 3438 | | | 3438 | 1538 |
| Flt Permitted | | | | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1633 | 1633 | 2707 | 3335 | 3438 | | | 3438 | 1538 |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 0 | 0 | 763 | 0 | 841 | 596 | 2000 | 0 | 0 | 2534 | 881 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 262 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 381 | 382 | 808 | 596 | 2000 | 0 | 0 | 2534 | 619 |
| Turn Type | | | | Perm | | Perm | Prot | | | | | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 18.0 | 18.0 | 18.0 | 12.0 | 70.0 | | | 52.0 | 52.0 |
| Effective Green, g (s) | | | | 18.0 | 18.0 | 18.0 | 12.0 | 70.0 | | | 52.0 | 52.0 |
| Actuated g/C Ratio | | | | 0.18 | 0.18 | 0.18 | 0.12 | 0.70 | | | 0.52 | 0.52 |
| Clearance Time (s) | | | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | | 6.0 | 6.0 |
| Vehicle Extension (s) | | | | 4.9 | 4.9 | 4.9 | 4.3 | 4.9 | | | 4.9 | 4.9 |
| Lane Grp Cap (vph) | | | | 294 | 294 | 487 | 400 | 2407 | | | 1788 | 800 |
| v/s Ratio Prot | | | | | | | c0.18 | 0.58 | | | c0.74 | |
| v/s Ratio Perm | | | | 0.23 | 0.23 | c0.30 | | | | | | 0.40 |
| v/c Ratio | | | | 1.30 | 1.30 | 1.66 | 1.49 | 0.83 | | | 1.42 | 0.77 |
| Uniform Delay, d1 | | | | 41.0 | 41.0 | 41.0 | 44.0 | 10.8 | | | 24.0 | 19.3 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 0.94 | 1.59 | | | 0.80 | 0.64 |
| Incremental Delay, d2 | | | | 156.0 | 157.4 | 305.8 | 221.7 | 0.3 | | | 188.1 | 0.7 |
| Delay (s) | | | | 197.0 | 198.4 | 346.8 | 263.1 | 17.5 | | | 207.2 | 13.1 |
| Level of Service | | | | F | F | F | F | B | | | F | B |
| Approach Delay (s) | | 0.0 | | | 275.9 | | | 73.9 | | | 157.1 | |
| Approach LOS | | A | | | F | | | E | | | F | |
| Intersection Summary | | | | | | | | | | | | |
| HCM Average Control Delay | | | 153.8 | | | HCM Level of Service | | | | | F | |
| HCM Volume to Capacity ratio | | | 1.48 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 100.0 | | | Sum of lost time (s) | | | 18.0 | | | |
| Intersection Capacity Utilization | | | 178.6% | | | ICU Level of Service | | | H | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |