

**APPENDIX I: 2008 & 2013 PM DETAILED LEVEL OF SERVICE WORKSHEETS**





| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations    | ↗↘    | ↗↘    |      | ↗     | ↗     | ↗     |       | ↗     | ↗     | ↗     | ↗     | ↗     |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0   | 4.0   |       | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Lane Util. Factor      | 0.97  | 0.95  |      | 1.00  | 1.00  | 1.00  |       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frbp, ped/bikes        | 1.00  | 1.00  |      | 1.00  | 1.00  | 1.00  |       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Flpb, ped/bikes        | 1.00  | 1.00  |      | 1.00  | 1.00  | 1.00  |       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                    | 1.00  | 0.99  |      | 1.00  | 1.00  | 0.85  |       | 1.00  | 0.85  | 1.00  | 1.00  | 0.85  |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 1.00  | 1.00  |       | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  |
| Satd. Flow (prot)      | 3433  | 3518  |      | 1770  | 1863  | 1583  |       | 1854  | 1583  | 1770  | 1863  | 1583  |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 1.00  | 1.00  |       | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  |
| Satd. Flow (perm)      | 3433  | 3518  |      | 1770  | 1863  | 1583  |       | 1854  | 1583  | 1770  | 1863  | 1583  |
| Volume (vph)           | 175   | 365   | 15   | 338   | 406   | 351   | 30    | 278   | 271   | 349   | 401   | 186   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 175   | 365   | 15   | 338   | 406   | 351   | 30    | 278   | 271   | 349   | 401   | 186   |
| RTOR Reduction (vph)   | 0     | 2     | 0    | 0     | 0     | 195   | 0     | 0     | 151   | 0     | 0     | 109   |
| Lane Group Flow (vph)  | 175   | 378   | 0    | 338   | 406   | 156   | 0     | 308   | 120   | 349   | 401   | 77    |
| Conf. Peds. (#/hr)     |       |       |      | 16    |       | 16    | 9     |       | 9     | 3     |       | 3     |
| Turn Type              | Split |       |      | Split |       | pt+ov | Split |       | pt+ov | Split |       | pt+ov |
| Protected Phases       | 2     | 2     |      | 4     | 4     | 4 1   | 3     | 3     | 3 4   | 1     | 1     | 1 2   |
| Permitted Phases       |       |       |      |       |       |       |       |       |       |       |       |       |
| Actuated Green, G (s)  | 26.5  | 26.5  |      | 34.9  | 34.9  | 60.4  |       | 21.4  | 62.3  | 25.5  | 25.5  | 58.0  |
| Effective Green, g (s) | 28.5  | 28.5  |      | 36.9  | 36.9  | 64.4  |       | 23.4  | 64.3  | 27.5  | 27.5  | 60.0  |
| Actuated g/C Ratio     | 0.20  | 0.20  |      | 0.25  | 0.25  | 0.44  |       | 0.16  | 0.44  | 0.19  | 0.19  | 0.41  |
| Clearance Time (s)     | 6.0   | 6.0   |      | 6.0   | 6.0   |       |       | 6.0   |       | 6.0   | 6.0   |       |
| Vehicle Extension (s)  | 2.0   | 2.0   |      | 2.0   | 2.0   |       |       | 2.0   |       | 2.0   | 2.0   |       |
| Lane Grp Cap (vph)     | 674   | 691   |      | 450   | 474   | 703   |       | 299   | 701   | 335   | 353   | 655   |
| v/s Ratio Prot         | 0.05  | c0.11 |      | 0.19  | c0.22 | 0.10  |       | c0.17 | 0.08  | 0.20  | c0.22 | 0.05  |
| v/s Ratio Perm         |       |       |      |       |       |       |       |       |       |       |       |       |
| v/c Ratio              | 0.26  | 0.55  |      | 0.75  | 0.86  | 0.22  |       | 1.03  | 0.17  | 1.04  | 1.14  | 0.12  |
| Uniform Delay, d1      | 49.4  | 52.5  |      | 49.9  | 51.6  | 24.9  |       | 60.8  | 24.3  | 58.8  | 58.8  | 26.2  |
| Progression Factor     | 1.00  | 1.00  |      | 1.00  | 1.00  | 1.00  |       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Incremental Delay, d2  | 0.9   | 3.1   |      | 6.2   | 13.7  | 0.1   |       | 60.0  | 0.0   | 60.5  | 90.1  | 0.0   |
| Delay (s)              | 50.3  | 55.6  |      | 56.0  | 65.2  | 24.9  |       | 120.9 | 24.4  | 119.3 | 148.9 | 26.3  |
| Level of Service       | D     | E     |      | E     | E     | C     |       | F     | C     | F     | F     | C     |
| Approach Delay (s)     |       | 53.9  |      |       | 49.5  |       |       | 75.7  |       |       | 113.5 |       |
| Approach LOS           |       | D     |      |       | D     |       |       | E     |       |       | F     |       |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 74.0  | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 0.88  |                      |      |
| Actuated Cycle Length (s)         | 145.1 | Sum of lost time (s) | 28.8 |
| Intersection Capacity Utilization | 80.0% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL   | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|-------|------|------|-------|-------|------|
| Lane Configurations    |      | ↕     | ↕    |      | ↕    | ↕    | ↕     | ↕    |      | ↕     | ↕     | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  |      | 4.0  | 4.0  | 4.0   | 4.0  |      | 4.0   | 4.0   | 4.0  |
| Lane Util. Factor      |      | 1.00  | 1.00 |      | 1.00 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Frbp, ped/bikes        |      | 1.00  | 0.98 |      | 1.00 | 0.96 | 1.00  | 1.00 |      | 1.00  | 1.00  | 0.96 |
| Flpb, ped/bikes        |      | 1.00  | 1.00 |      | 1.00 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Frt                    |      | 1.00  | 0.85 |      | 1.00 | 0.85 | 1.00  | 0.98 |      | 1.00  | 1.00  | 0.85 |
| Flt Protected          |      | 0.96  | 1.00 |      | 0.99 | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00  | 1.00 |
| Satd. Flow (prot)      |      | 1791  | 1545 |      | 1835 | 1522 | 1768  | 1826 |      | 1766  | 1863  | 1527 |
| Flt Permitted          |      | 0.73  | 1.00 |      | 0.88 | 1.00 | 0.27  | 1.00 |      | 0.31  | 1.00  | 1.00 |
| Satd. Flow (perm)      |      | 1365  | 1545 |      | 1636 | 1522 | 495   | 1826 |      | 584   | 1863  | 1527 |
| Volume (vph)           | 314  | 107   | 186  | 18   | 53   | 104  | 71    | 252  | 31   | 194   | 412   | 298  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)        | 314  | 107   | 186  | 18   | 53   | 104  | 71    | 252  | 31   | 194   | 412   | 298  |
| RTOR Reduction (vph)   | 0    | 0     | 97   | 0    | 0    | 66   | 0     | 5    | 0    | 0     | 0     | 192  |
| Lane Group Flow (vph)  | 0    | 421   | 89   | 0    | 71   | 38   | 71    | 278  | 0    | 194   | 412   | 106  |
| Conf. Peds. (#/hr)     | 3    |       | 3    | 14   |      | 14   | 5     |      | 5    | 9     |       | 9    |
| Turn Type              | Perm |       | Perm | Perm |      | Perm | pm+pt |      |      | pm+pt |       | Perm |
| Protected Phases       |      | 4     |      |      | 8    |      | 1     | 6    |      | 5     | 2     |      |
| Permitted Phases       | 4    |       | 4    | 8    |      | 8    | 6     |      |      | 2     |       | 2    |
| Actuated Green, G (s)  |      | 27.8  | 27.8 |      | 27.8 | 27.8 | 21.8  | 18.0 |      | 28.4  | 21.3  | 21.3 |
| Effective Green, g (s) |      | 28.8  | 28.8 |      | 28.8 | 28.8 | 23.8  | 19.0 |      | 30.4  | 22.3  | 22.3 |
| Actuated g/C Ratio     |      | 0.37  | 0.37 |      | 0.37 | 0.37 | 0.30  | 0.24 |      | 0.39  | 0.29  | 0.29 |
| Clearance Time (s)     |      | 5.0   | 5.0  |      | 5.0  | 5.0  | 5.0   | 5.0  |      | 5.0   | 5.0   | 5.0  |
| Vehicle Extension (s)  |      | 2.0   | 2.0  |      | 2.0  | 2.0  | 2.0   | 0.5  |      | 2.0   | 0.5   | 0.5  |
| Lane Grp Cap (vph)     |      | 503   | 569  |      | 603  | 561  | 229   | 444  |      | 349   | 531   | 435  |
| v/s Ratio Prot         |      |       |      |      |      |      | 0.02  | 0.15 |      | c0.06 | c0.22 |      |
| v/s Ratio Perm         |      | c0.31 | 0.06 |      | 0.04 | 0.03 | 0.08  |      |      | 0.16  |       | 0.07 |
| v/c Ratio              |      | 0.84  | 0.16 |      | 0.12 | 0.07 | 0.31  | 0.63 |      | 0.56  | 0.78  | 0.24 |
| Uniform Delay, d1      |      | 22.6  | 16.6 |      | 16.3 | 16.0 | 20.3  | 26.4 |      | 17.2  | 25.7  | 21.5 |
| Progression Factor     |      | 1.00  | 1.00 |      | 1.00 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Incremental Delay, d2  |      | 11.1  | 0.0  |      | 0.0  | 0.0  | 0.3   | 2.0  |      | 1.1   | 6.4   | 0.1  |
| Delay (s)              |      | 33.6  | 16.6 |      | 16.3 | 16.0 | 20.6  | 28.4 |      | 18.3  | 32.1  | 21.6 |
| Level of Service       |      | C     | B    |      | B    | B    | C     | C    |      | B     | C     | C    |
| Approach Delay (s)     |      | 28.4  |      |      | 16.2 |      |       | 26.8 |      |       | 25.7  |      |
| Approach LOS           |      | C     |      |      | B    |      |       | C    |      |       | C     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.9  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.81  |                      |      |
| Actuated Cycle Length (s)         | 78.2  | Sum of lost time (s) | 22.3 |
| Intersection Capacity Utilization | 66.4% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group



| Movement                          | EBL         | EBT         | EBR         | WBL         | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations               |             | ↕           |             |             | ↕                    |      |      | ↕    |      | ↕    | ↕    | ↕    |
| Sign Control                      |             | Stop        |             |             | Stop                 |      |      | Free |      |      | Free |      |
| Grade                             |             | 0%          |             |             | 0%                   |      |      | 0%   |      |      | 0%   |      |
| Volume (veh/h)                    | 37          | 12          | 17          | 3           | 2                    | 22   | 12   | 221  | 5    | 39   | 396  | 47   |
| Peak Hour Factor                  | 1.00        | 1.00        | 1.00        | 1.00        | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 37          | 12          | 17          | 3           | 2                    | 22   | 12   | 221  | 5    | 39   | 396  | 47   |
| Pedestrians                       |             |             |             |             |                      |      |      |      |      |      |      |      |
| Lane Width (ft)                   |             |             |             |             |                      |      |      |      |      |      |      |      |
| Walking Speed (ft/s)              |             |             |             |             |                      |      |      |      |      |      |      |      |
| Percent Blockage                  |             |             |             |             |                      |      |      |      |      |      |      |      |
| Right turn flare (veh)            |             |             |             |             |                      |      |      |      |      |      |      |      |
| Median type                       |             | None        |             |             | None                 |      |      |      |      |      |      |      |
| Median storage (veh)              |             |             |             |             |                      |      |      |      |      |      |      |      |
| Upstream signal (ft)              |             |             |             |             |                      |      |      |      |      |      |      |      |
| pX, platoon unblocked             |             |             |             |             |                      |      |      |      |      |      |      |      |
| vC, conflicting volume            | 768         | 748         | 420         | 744         | 768                  | 224  | 443  |      |      | 226  |      |      |
| vC1, stage 1 conf vol             |             |             |             |             |                      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol             |             |             |             |             |                      |      |      |      |      |      |      |      |
| vCu, unblocked vol                | 768         | 748         | 420         | 744         | 768                  | 224  | 443  |      |      | 226  |      |      |
| tC, single (s)                    | 7.1         | 6.5         | 6.2         | 7.1         | 6.5                  | 6.2  | 4.1  |      |      | 4.1  |      |      |
| tC, 2 stage (s)                   |             |             |             |             |                      |      |      |      |      |      |      |      |
| tF (s)                            | 3.5         | 4.0         | 3.3         | 3.5         | 4.0                  | 3.3  | 2.2  |      |      | 2.2  |      |      |
| p0 queue free %                   | 88          | 96          | 97          | 99          | 99                   | 97   | 99   |      |      | 97   |      |      |
| cM capacity (veh/h)               | 299         | 328         | 634         | 303         | 319                  | 816  | 1117 |      |      | 1342 |      |      |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>NB 1</b> | <b>SB 1</b> | <b>SB 2</b>          |      |      |      |      |      |      |      |
| Volume Total                      | 66          | 27          | 238         | 39          | 443                  |      |      |      |      |      |      |      |
| Volume Left                       | 37          | 3           | 12          | 39          | 0                    |      |      |      |      |      |      |      |
| Volume Right                      | 17          | 22          | 5           | 0           | 47                   |      |      |      |      |      |      |      |
| cSH                               | 353         | 626         | 1117        | 1342        | 1700                 |      |      |      |      |      |      |      |
| Volume to Capacity                | 0.19        | 0.04        | 0.01        | 0.03        | 0.26                 |      |      |      |      |      |      |      |
| Queue Length 95th (ft)            | 17          | 3           | 1           | 2           | 0                    |      |      |      |      |      |      |      |
| Control Delay (s)                 | 17.5        | 11.0        | 0.5         | 7.8         | 0.0                  |      |      |      |      |      |      |      |
| Lane LOS                          | C           | B           | A           | A           |                      |      |      |      |      |      |      |      |
| Approach Delay (s)                | 17.5        | 11.0        | 0.5         | 0.6         |                      |      |      |      |      |      |      |      |
| Approach LOS                      | C           | B           |             |             |                      |      |      |      |      |      |      |      |
| <b>Intersection Summary</b>       |             |             |             |             |                      |      |      |      |      |      |      |      |
| Average Delay                     |             |             | 2.3         |             |                      |      |      |      |      |      |      |      |
| Intersection Capacity Utilization |             |             | 40.7%       |             | ICU Level of Service |      |      |      |      | A    |      |      |
| Analysis Period (min)             |             |             | 15          |             |                      |      |      |      |      |      |      |      |



| Movement                          | WBL         | WBR         | NBT         | NBR                  | SBL  | SBT  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               |             |             |             |                      |      |      |
| Sign Control                      | Stop        |             | Free        |                      |      | Free |
| Grade                             | 0%          |             | 0%          |                      |      | 0%   |
| Volume (veh/h)                    | 1           | 4           | 169         | 1                    | 8    | 422  |
| Peak Hour Factor                  | 1.00        | 1.00        | 1.00        | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 1           | 4           | 169         | 1                    | 8    | 422  |
| Pedestrians                       |             |             |             |                      |      |      |
| Lane Width (ft)                   |             |             |             |                      |      |      |
| Walking Speed (ft/s)              |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       | None        |             |             |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| Upstream signal (ft)              |             |             |             |                      |      |      |
| pX, platoon unblocked             |             |             |             |                      |      |      |
| vC, conflicting volume            | 608         | 170         |             |                      | 170  |      |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| vCu, unblocked vol                | 608         | 170         |             |                      | 170  |      |
| tC, single (s)                    | 6.4         | 6.2         |             |                      | 4.1  |      |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            | 3.5         | 3.3         |             |                      | 2.2  |      |
| p0 queue free %                   | 100         | 100         |             |                      | 99   |      |
| cM capacity (veh/h)               | 457         | 874         |             |                      | 1407 |      |
| <b>Direction, Lane #</b>          | <b>WB 1</b> | <b>NB 1</b> | <b>SB 1</b> |                      |      |      |
| Volume Total                      | 5           | 170         | 430         |                      |      |      |
| Volume Left                       | 1           | 0           | 8           |                      |      |      |
| Volume Right                      | 4           | 1           | 0           |                      |      |      |
| cSH                               | 739         | 1700        | 1407        |                      |      |      |
| Volume to Capacity                | 0.01        | 0.10        | 0.01        |                      |      |      |
| Queue Length 95th (ft)            | 1           | 0           | 0           |                      |      |      |
| Control Delay (s)                 | 9.9         | 0.0         | 0.2         |                      |      |      |
| Lane LOS                          | A           |             | A           |                      |      |      |
| Approach Delay (s)                | 9.9         | 0.0         | 0.2         |                      |      |      |
| Approach LOS                      | A           |             |             |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 0.2         |                      |      |      |
| Intersection Capacity Utilization |             | 38.6%       |             | ICU Level of Service |      | A    |
| Analysis Period (min)             |             |             | 15          |                      |      |      |



| Movement                          | EBL  | EBR   | NBL  | NBT                  | SBT  | SBR  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               |      |       |      |                      |      |      |
| Sign Control                      | Stop |       |      | Free                 | Free |      |
| Grade                             | 0%   |       |      | 0%                   | 0%   |      |
| Volume (veh/h)                    | 43   | 6     | 8    | 132                  | 272  | 120  |
| Peak Hour Factor                  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 43   | 6     | 8    | 132                  | 272  | 120  |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       | None |       |      |                      |      |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            | 420  | 272   | 392  |                      |      |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 420  | 272   | 392  |                      |      |      |
| tC, single (s)                    | 6.4  | 6.2   | 4.1  |                      |      |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   | 2.2  |                      |      |      |
| p0 queue free %                   | 93   | 99    | 99   |                      |      |      |
| cM capacity (veh/h)               | 586  | 767   | 1167 |                      |      |      |
| Direction, Lane #                 | EB 1 | NB 1  | SB 1 | SB 2                 |      |      |
| Volume Total                      | 49   | 140   | 272  | 120                  |      |      |
| Volume Left                       | 43   | 8     | 0    | 0                    |      |      |
| Volume Right                      | 6    | 0     | 0    | 120                  |      |      |
| cSH                               | 603  | 1167  | 1700 | 1700                 |      |      |
| Volume to Capacity                | 0.08 | 0.01  | 0.16 | 0.07                 |      |      |
| Queue Length 95th (ft)            | 7    | 1     | 0    | 0                    |      |      |
| Control Delay (s)                 | 11.5 | 0.5   | 0.0  | 0.0                  |      |      |
| Lane LOS                          | B    | A     |      |                      |      |      |
| Approach Delay (s)                | 11.5 | 0.5   | 0.0  |                      |      |      |
| Approach LOS                      | B    |       |      |                      |      |      |
| Intersection Summary              |      |       |      |                      |      |      |
| Average Delay                     |      |       | 1.1  |                      |      |      |
| Intersection Capacity Utilization |      | 24.3% |      | ICU Level of Service |      | A    |
| Analysis Period (min)             |      |       | 15   |                      |      |      |



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Sign Control           |      | Stop |      |      | Stop |      |      | Stop |      |      | Stop |      |
| Volume (vph)           | 58   | 165  | 63   | 129  | 132  | 52   | 12   | 119  | 64   | 68   | 255  | 46   |
| Peak Hour Factor       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 58   | 165  | 63   | 129  | 132  | 52   | 12   | 119  | 64   | 68   | 255  | 46   |

| Direction, Lane #     | EB 1  | WB 1 | NB 1  | SB 1 |
|-----------------------|-------|------|-------|------|
| Volume Total (vph)    | 286   | 313  | 195   | 369  |
| Volume Left (vph)     | 58    | 129  | 12    | 68   |
| Volume Right (vph)    | 63    | 52   | 64    | 46   |
| Hadj (s)              | -0.06 | 0.02 | -0.15 | 0.00 |
| Departure Headway (s) | 6.5   | 6.5  | 6.6   | 6.3  |
| Degree Utilization, x | 0.51  | 0.56 | 0.36  | 0.65 |
| Capacity (veh/h)      | 502   | 506  | 456   | 533  |
| Control Delay (s)     | 16.1  | 17.4 | 13.3  | 20.3 |
| Approach Delay (s)    | 16.1  | 17.4 | 13.3  | 20.3 |
| Approach LOS          | C     | C    | B     | C    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Delay                             |       | 17.3                 |   |
| HCM Level of Service              |       | C                    |   |
| Intersection Capacity Utilization | 73.1% | ICU Level of Service | D |
| Analysis Period (min)             |       | 15                   |   |



| Movement                          | WBL         | WBR         | NBT         | NBR                  | SBL  | SBT  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               |             |             |             |                      |      |      |
| Sign Control                      | Stop        |             | Free        |                      |      | Free |
| Grade                             | 0%          |             | 0%          |                      |      | 0%   |
| Volume (veh/h)                    | 184         | 52          | 164         | 105                  | 47   | 372  |
| Peak Hour Factor                  | 1.00        | 1.00        | 1.00        | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 184         | 52          | 164         | 105                  | 47   | 372  |
| Pedestrians                       |             |             |             |                      |      |      |
| Lane Width (ft)                   |             |             |             |                      |      |      |
| Walking Speed (ft/s)              |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       | None        |             |             |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| Upstream signal (ft)              |             |             |             |                      |      |      |
| pX, platoon unblocked             |             |             |             |                      |      |      |
| vC, conflicting volume            | 682         | 216         |             |                      | 269  |      |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| vCu, unblocked vol                | 682         | 216         |             |                      | 269  |      |
| tC, single (s)                    | 6.4         | 6.2         |             |                      | 4.1  |      |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            | 3.5         | 3.3         |             |                      | 2.2  |      |
| p0 queue free %                   | 54          | 94          |             |                      | 96   |      |
| cM capacity (veh/h)               | 400         | 823         |             |                      | 1295 |      |
| <b>Direction, Lane #</b>          | <b>WB 1</b> | <b>NB 1</b> | <b>SB 1</b> |                      |      |      |
| Volume Total                      | 236         | 269         | 419         |                      |      |      |
| Volume Left                       | 184         | 0           | 47          |                      |      |      |
| Volume Right                      | 52          | 105         | 0           |                      |      |      |
| cSH                               | 451         | 1700        | 1295        |                      |      |      |
| Volume to Capacity                | 0.52        | 0.16        | 0.04        |                      |      |      |
| Queue Length 95th (ft)            | 74          | 0           | 3           |                      |      |      |
| Control Delay (s)                 | 21.4        | 0.0         | 1.2         |                      |      |      |
| Lane LOS                          | C           |             | A           |                      |      |      |
| Approach Delay (s)                | 21.4        | 0.0         | 1.2         |                      |      |      |
| Approach LOS                      | C           |             |             |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 6.0         |                      |      |      |
| Intersection Capacity Utilization |             | 60.6%       |             | ICU Level of Service |      | B    |
| Analysis Period (min)             |             |             | 15          |                      |      |      |



| Movement                          | EBL         | EBR         | NBL         | NBT                  | SBT  | SBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               | ↘           |             |             | ↕                    | ↕    |      |
| Sign Control                      | Stop        |             |             | Free                 | Free |      |
| Grade                             | 0%          |             |             | 0%                   | 0%   |      |
| Volume (veh/h)                    | 190         | 59          | 35          | 120                  | 262  | 305  |
| Peak Hour Factor                  | 1.00        | 1.00        | 1.00        | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 190         | 59          | 35          | 120                  | 262  | 305  |
| Pedestrians                       |             |             |             |                      |      |      |
| Lane Width (ft)                   |             |             |             |                      |      |      |
| Walking Speed (ft/s)              |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       | None        |             |             |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| Upstream signal (ft)              |             |             |             |                      |      |      |
| pX, platoon unblocked             |             |             |             |                      |      |      |
| vC, conflicting volume            | 604         | 414         | 567         |                      |      |      |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| vCu, unblocked vol                | 604         | 414         | 567         |                      |      |      |
| tC, single (s)                    | 6.4         | 6.2         | 4.1         |                      |      |      |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            | 3.5         | 3.3         | 2.2         |                      |      |      |
| p0 queue free %                   | 57          | 91          | 97          |                      |      |      |
| cM capacity (veh/h)               | 445         | 638         | 1005        |                      |      |      |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>NB 1</b> | <b>SB 1</b> |                      |      |      |
| Volume Total                      | 249         | 155         | 567         |                      |      |      |
| Volume Left                       | 190         | 35          | 0           |                      |      |      |
| Volume Right                      | 59          | 0           | 305         |                      |      |      |
| cSH                               | 479         | 1005        | 1700        |                      |      |      |
| Volume to Capacity                | 0.52        | 0.03        | 0.33        |                      |      |      |
| Queue Length 95th (ft)            | 74          | 3           | 0           |                      |      |      |
| Control Delay (s)                 | 20.3        | 2.2         | 0.0         |                      |      |      |
| Lane LOS                          | C           | A           |             |                      |      |      |
| Approach Delay (s)                | 20.3        | 2.2         | 0.0         |                      |      |      |
| Approach LOS                      | C           |             |             |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 5.6         |                      |      |      |
| Intersection Capacity Utilization |             |             | 57.5%       | ICU Level of Service | B    |      |
| Analysis Period (min)             |             |             | 15          |                      |      |      |



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations    |       |       |      |       |       |       |       |       |       |       |       |       |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0   | 4.0   |       | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Lane Util. Factor      | 0.97  | 0.95  |      | 1.00  | 1.00  | 1.00  |       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frbp, ped/bikes        | 1.00  | 1.00  |      | 1.00  | 1.00  | 1.00  |       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Flpb, ped/bikes        | 1.00  | 1.00  |      | 1.00  | 1.00  | 1.00  |       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                    | 1.00  | 0.99  |      | 1.00  | 1.00  | 0.85  |       | 1.00  | 0.85  | 1.00  | 1.00  | 0.85  |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 1.00  | 1.00  |       | 0.99  | 1.00  | 0.95  | 1.00  | 1.00  |
| Satd. Flow (prot)      | 3433  | 3495  |      | 1770  | 1863  | 1583  |       | 1837  | 1583  | 1770  | 1863  | 1583  |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 1.00  | 1.00  |       | 0.99  | 1.00  | 0.95  | 1.00  | 1.00  |
| Satd. Flow (perm)      | 3433  | 3495  |      | 1770  | 1863  | 1583  |       | 1837  | 1583  | 1770  | 1863  | 1583  |
| Volume (vph)           | 169   | 458   | 42   | 396   | 605   | 121   | 140   | 362   | 136   | 158   | 451   | 243   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 169   | 458   | 42   | 396   | 605   | 121   | 140   | 362   | 136   | 158   | 451   | 243   |
| RTOR Reduction (vph)   | 0     | 4     | 0    | 0     | 0     | 58    | 0     | 0     | 52    | 0     | 0     | 149   |
| Lane Group Flow (vph)  | 169   | 496   | 0    | 396   | 605   | 63    | 0     | 502   | 84    | 158   | 451   | 94    |
| Conf. Peds. (#/hr)     |       |       |      | 16    |       | 16    | 9     |       | 9     | 3     |       | 3     |
| Turn Type              | Split |       |      | Split |       | pt+ov | Split |       | pt+ov | Split |       | pt+ov |
| Protected Phases       | 2     | 2     |      | 4     | 4     | 4 1   | 3     | 3     | 3 4   | 1     | 1     | 1 2   |
| Permitted Phases       |       |       |      |       |       |       |       |       |       |       |       |       |
| Actuated Green, G (s)  | 26.1  | 26.1  |      | 44.2  | 44.2  | 69.3  |       | 21.1  | 71.3  | 25.1  | 25.1  | 57.2  |
| Effective Green, g (s) | 28.1  | 28.1  |      | 46.2  | 46.2  | 73.3  |       | 23.1  | 73.3  | 27.1  | 27.1  | 59.2  |
| Actuated g/C Ratio     | 0.18  | 0.18  |      | 0.30  | 0.30  | 0.48  |       | 0.15  | 0.48  | 0.18  | 0.18  | 0.38  |
| Clearance Time (s)     | 6.0   | 6.0   |      | 6.0   | 6.0   |       |       | 6.0   |       | 6.0   | 6.0   |       |
| Vehicle Extension (s)  | 2.0   | 2.0   |      | 2.0   | 2.0   |       |       | 2.0   |       | 2.0   | 2.0   |       |
| Lane Grp Cap (vph)     | 627   | 639   |      | 532   | 560   | 754   |       | 276   | 754   | 312   | 328   | 609   |
| v/s Ratio Prot         | 0.05  | c0.14 |      | 0.22  | c0.32 | 0.04  |       | c0.27 | 0.05  | 0.09  | c0.24 | 0.06  |
| v/s Ratio Perm         |       |       |      |       |       |       |       |       |       |       |       |       |
| v/c Ratio              | 0.27  | 0.78  |      | 0.74  | 1.08  | 0.08  |       | 1.82  | 0.11  | 0.51  | 1.38  | 0.15  |
| Uniform Delay, d1      | 54.0  | 59.9  |      | 48.5  | 53.8  | 21.9  |       | 65.4  | 22.3  | 57.3  | 63.4  | 30.9  |
| Progression Factor     | 1.00  | 1.00  |      | 1.00  | 1.00  | 1.00  |       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Incremental Delay, d2  | 1.1   | 9.0   |      | 4.9   | 61.5  | 0.0   |       | 382.4 | 0.0   | 0.5   | 186.9 | 0.0   |
| Delay (s)              | 55.1  | 68.8  |      | 53.4  | 115.3 | 22.0  |       | 447.8 | 22.3  | 57.8  | 250.3 | 31.0  |
| Level of Service       | E     | E     |      | D     | F     | C     |       | F     | C     | E     | F     | C     |
| Approach Delay (s)     |       | 65.3  |      |       | 83.4  |       |       | 357.1 |       |       | 152.0 |       |
| Approach LOS           |       | E     |      |       | F     |       |       | F     |       |       | F     |       |

**Intersection Summary**

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 150.8  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.21   |                      |      |
| Actuated Cycle Length (s)         | 153.8  | Sum of lost time (s) | 29.3 |
| Intersection Capacity Utilization | 102.4% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |

c Critical Lane Group



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL   | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|-------|------|------|-------|-------|------|
| Lane Configurations    |      | ↕     | ↗    |      | ↕    | ↗    | ↖     | ↖    | ↖    | ↖     | ↖     | ↖    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  |      | 4.0  | 4.0  | 4.0   | 4.0  |      | 4.0   | 4.0   | 4.0  |
| Lane Util. Factor      |      | 1.00  | 1.00 |      | 1.00 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Frbp, ped/bikes        |      | 1.00  | 0.97 |      | 1.00 | 0.94 | 1.00  | 1.00 |      | 1.00  | 1.00  | 0.97 |
| Flpb, ped/bikes        |      | 1.00  | 1.00 |      | 0.99 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Frt                    |      | 1.00  | 0.85 |      | 1.00 | 0.85 | 1.00  | 1.00 |      | 1.00  | 1.00  | 0.85 |
| Flt Protected          |      | 0.98  | 1.00 |      | 0.99 | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00  | 1.00 |
| Satd. Flow (prot)      |      | 1812  | 1538 |      | 1833 | 1490 | 1769  | 1856 |      | 1766  | 1863  | 1538 |
| Flt Permitted          |      | 0.53  | 1.00 |      | 0.89 | 1.00 | 0.25  | 1.00 |      | 0.48  | 1.00  | 1.00 |
| Satd. Flow (perm)      |      | 986   | 1538 |      | 1641 | 1490 | 470   | 1856 |      | 892   | 1863  | 1538 |
| Volume (vph)           | 80   | 78    | 165  | 43   | 168  | 136  | 22    | 348  | 7    | 35    | 630   | 150  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)        | 80   | 78    | 165  | 43   | 168  | 136  | 22    | 348  | 7    | 35    | 630   | 150  |
| RTOR Reduction (vph)   | 0    | 0     | 136  | 0    | 0    | 112  | 0     | 0    | 0    | 0     | 0     | 44   |
| Lane Group Flow (vph)  | 0    | 158   | 29   | 0    | 211  | 24   | 22    | 355  | 0    | 35    | 630   | 106  |
| Conf. Peds. (#/hr)     | 3    |       | 3    | 14   |      | 14   | 5     |      | 5    | 9     |       | 9    |
| Turn Type              | Perm |       | Perm | Perm |      | Perm | pm+pt |      |      | pm+pt |       | Perm |
| Protected Phases       |      | 4     |      | 8    |      | 8    | 1     | 6    |      | 5     | 2     |      |
| Permitted Phases       | 4    |       | 4    | 8    |      | 8    | 6     |      |      | 2     |       | 2    |
| Actuated Green, G (s)  |      | 10.7  | 10.7 |      | 10.7 | 10.7 | 33.9  | 32.3 |      | 34.1  | 32.4  | 32.4 |
| Effective Green, g (s) |      | 11.7  | 11.7 |      | 11.7 | 11.7 | 35.9  | 33.3 |      | 36.1  | 33.4  | 33.4 |
| Actuated g/C Ratio     |      | 0.18  | 0.18 |      | 0.18 | 0.18 | 0.54  | 0.50 |      | 0.55  | 0.50  | 0.50 |
| Clearance Time (s)     |      | 5.0   | 5.0  |      | 5.0  | 5.0  | 5.0   | 5.0  |      | 5.0   | 5.0   | 5.0  |
| Vehicle Extension (s)  |      | 2.0   | 2.0  |      | 2.0  | 2.0  | 2.0   | 0.5  |      | 2.0   | 0.5   | 0.5  |
| Lane Grp Cap (vph)     |      | 174   | 272  |      | 290  | 263  | 306   | 934  |      | 522   | 940   | 776  |
| v/s Ratio Prot         |      |       |      |      |      |      | c0.00 | 0.19 |      | 0.00  | c0.34 |      |
| v/s Ratio Perm         |      | c0.16 | 0.02 |      | 0.13 | 0.02 | 0.04  |      |      | 0.03  |       | 0.07 |
| v/c Ratio              |      | 0.91  | 0.11 |      | 0.73 | 0.09 | 0.07  | 0.38 |      | 0.07  | 0.67  | 0.14 |
| Uniform Delay, d1      |      | 26.7  | 22.9 |      | 25.7 | 22.8 | 8.5   | 10.1 |      | 7.1   | 12.3  | 8.7  |
| Progression Factor     |      | 1.00  | 1.00 |      | 1.00 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Incremental Delay, d2  |      | 41.7  | 0.1  |      | 7.5  | 0.1  | 0.0   | 0.1  |      | 0.0   | 1.5   | 0.0  |
| Delay (s)              |      | 68.4  | 22.9 |      | 33.2 | 22.9 | 8.5   | 10.2 |      | 7.1   | 13.8  | 8.8  |
| Level of Service       |      | E     | C    |      | C    | C    | A     | B    |      | A     | B     | A    |
| Approach Delay (s)     |      | 45.2  |      |      | 29.2 |      |       | 10.1 |      |       | 12.6  |      |
| Approach LOS           |      | D     |      |      | C    |      |       | B    |      |       | B     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.64  |                      |      |
| Actuated Cycle Length (s)         | 66.2  | Sum of lost time (s) | 14.5 |
| Intersection Capacity Utilization | 66.0% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      | ↕    | ↕    | ↕    |
| Sign Control           |      | Stop |      |      | Stop |      |      | Free |      |      | Free |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Volume (veh/h)         | 53   | 142  | 1    | 0    | 196  | 61   | 2    | 262  | 0    | 70   | 530  | 19   |
| Peak Hour Factor       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 53   | 142  | 1    | 0    | 196  | 61   | 2    | 262  | 0    | 70   | 530  | 19   |
| Pedestrians            |      |      |      |      |      |      |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |      |      |      |      |      |
| Median type            |      | None |      |      | None |      |      |      |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      |      |      |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC, conflicting volume | 1104 | 946  | 540  | 1008 | 955  | 262  | 549  |      |      | 262  |      |      |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 1104 | 946  | 540  | 1008 | 955  | 262  | 549  |      |      | 262  |      |      |
| tC, single (s)         | 7.1  | 6.5  | 6.2  | 7.1  | 6.5  | 6.2  | 4.1  |      |      | 4.1  |      |      |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 3.5  | 4.0  | 3.3  | 3.5  | 4.0  | 3.3  | 2.2  |      |      | 2.2  |      |      |
| p0 queue free %        | 5    | 43   | 100  | 100  | 20   | 92   | 100  |      |      | 95   |      |      |
| cM capacity (veh/h)    | 56   | 247  | 542  | 114  | 244  | 777  | 1021 |      |      | 1302 |      |      |

| Direction, Lane #      | EB 1  | WB 1 | NB 1 | SB 1 | SB 2 |
|------------------------|-------|------|------|------|------|
| Volume Total           | 196   | 257  | 264  | 70   | 549  |
| Volume Left            | 53    | 0    | 2    | 70   | 0    |
| Volume Right           | 1     | 61   | 0    | 0    | 19   |
| cSH                    | 128   | 291  | 1021 | 1302 | 1700 |
| Volume to Capacity     | 1.53  | 0.88 | 0.00 | 0.05 | 0.32 |
| Queue Length 95th (ft) | 345   | 197  | 0    | 4    | 0    |
| Control Delay (s)      | 334.7 | 65.7 | 0.1  | 7.9  | 0.0  |
| Lane LOS               | F     | F    | A    | A    |      |
| Approach Delay (s)     | 334.7 | 65.7 | 0.1  | 0.9  |      |
| Approach LOS           | F     | F    |      |      |      |

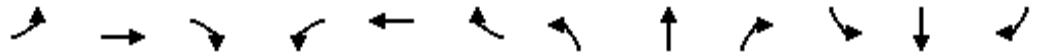
| Intersection Summary              |       |                      |
|-----------------------------------|-------|----------------------|
| Average Delay                     |       | 62.2                 |
| Intersection Capacity Utilization | 80.8% | ICU Level of Service |
| Analysis Period (min)             |       | 15                   |
|                                   |       | D                    |



| Movement                          | WBL  | WBR  | NBT   | NBR                  | SBL  | SBT  |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations               |      |      |       |                      |      |      |
| Sign Control                      | Stop |      | Free  |                      |      | Free |
| Grade                             | 0%   |      | 0%    |                      |      | 0%   |
| Volume (veh/h)                    | 100  | 0    | 260   | 23                   | 0    | 540  |
| Peak Hour Factor                  | 1.00 | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 100  | 0    | 260   | 23                   | 0    | 540  |
| Pedestrians                       |      |      |       |                      |      |      |
| Lane Width (ft)                   |      |      |       |                      |      |      |
| Walking Speed (ft/s)              |      |      |       |                      |      |      |
| Percent Blockage                  |      |      |       |                      |      |      |
| Right turn flare (veh)            |      |      |       |                      |      |      |
| Median type                       | None |      |       |                      |      |      |
| Median storage (veh)              |      |      |       |                      |      |      |
| Upstream signal (ft)              |      |      |       |                      |      |      |
| pX, platoon unblocked             |      |      |       |                      |      |      |
| vC, conflicting volume            | 812  | 272  |       |                      | 283  |      |
| vC1, stage 1 conf vol             |      |      |       |                      |      |      |
| vC2, stage 2 conf vol             |      |      |       |                      |      |      |
| vCu, unblocked vol                | 812  | 272  |       |                      | 283  |      |
| tC, single (s)                    | 6.4  | 6.2  |       |                      | 4.1  |      |
| tC, 2 stage (s)                   |      |      |       |                      |      |      |
| tF (s)                            | 3.5  | 3.3  |       |                      | 2.2  |      |
| p0 queue free %                   | 71   | 100  |       |                      | 100  |      |
| cM capacity (veh/h)               | 349  | 767  |       |                      | 1279 |      |
| Direction, Lane #                 | WB 1 | NB 1 | SB 1  |                      |      |      |
| Volume Total                      | 100  | 283  | 540   |                      |      |      |
| Volume Left                       | 100  | 0    | 0     |                      |      |      |
| Volume Right                      | 0    | 23   | 0     |                      |      |      |
| cSH                               | 349  | 1700 | 1279  |                      |      |      |
| Volume to Capacity                | 0.29 | 0.17 | 0.00  |                      |      |      |
| Queue Length 95th (ft)            | 29   | 0    | 0     |                      |      |      |
| Control Delay (s)                 | 19.4 | 0.0  | 0.0   |                      |      |      |
| Lane LOS                          | C    |      |       |                      |      |      |
| Approach Delay (s)                | 19.4 | 0.0  | 0.0   |                      |      |      |
| Approach LOS                      | C    |      |       |                      |      |      |
| Intersection Summary              |      |      |       |                      |      |      |
| Average Delay                     |      |      | 2.1   |                      |      |      |
| Intersection Capacity Utilization |      |      | 40.6% | ICU Level of Service | A    |      |
| Analysis Period (min)             |      |      | 15    |                      |      |      |



| Movement                          | EBL  | EBR   | NBL  | NBT                  | SBT  | SBR  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               |      |       |      |                      |      |      |
| Sign Control                      | Stop |       |      | Free                 | Free |      |
| Grade                             | 0%   |       |      | 0%                   | 0%   |      |
| Volume (veh/h)                    | 50   | 4     | 9    | 222                  | 444  | 202  |
| Peak Hour Factor                  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 50   | 4     | 9    | 222                  | 444  | 202  |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       | None |       |      |                      |      |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            | 684  | 444   | 646  |                      |      |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 684  | 444   | 646  |                      |      |      |
| tC, single (s)                    | 6.4  | 6.2   | 4.1  |                      |      |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   | 2.2  |                      |      |      |
| p0 queue free %                   | 88   | 99    | 99   |                      |      |      |
| cM capacity (veh/h)               | 410  | 614   | 939  |                      |      |      |
| Direction, Lane #                 | EB 1 | NB 1  | SB 1 | SB 2                 |      |      |
| Volume Total                      | 54   | 231   | 444  | 202                  |      |      |
| Volume Left                       | 50   | 9     | 0    | 0                    |      |      |
| Volume Right                      | 4    | 0     | 0    | 202                  |      |      |
| cSH                               | 421  | 939   | 1700 | 1700                 |      |      |
| Volume to Capacity                | 0.13 | 0.01  | 0.26 | 0.12                 |      |      |
| Queue Length 95th (ft)            | 11   | 1     | 0    | 0                    |      |      |
| Control Delay (s)                 | 14.8 | 0.4   | 0.0  | 0.0                  |      |      |
| Lane LOS                          | B    | A     |      |                      |      |      |
| Approach Delay (s)                | 14.8 | 0.4   | 0.0  |                      |      |      |
| Approach LOS                      | B    |       |      |                      |      |      |
| Intersection Summary              |      |       |      |                      |      |      |
| Average Delay                     |      |       | 1.0  |                      |      |      |
| Intersection Capacity Utilization |      | 33.4% |      | ICU Level of Service |      | A    |
| Analysis Period (min)             |      |       | 15   |                      |      |      |



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Sign Control           |      | Stop |      |      | Stop |      |      | Stop |      |      | Stop |      |
| Volume (vph)           | 100  | 207  | 91   | 159  | 318  | 1    | 15   | 129  | 58   | 1    | 310  | 138  |
| Peak Hour Factor       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 100  | 207  | 91   | 159  | 318  | 1    | 15   | 129  | 58   | 1    | 310  | 138  |

| Direction, Lane #     | EB 1  | WB 1  | NB 1  | SB 1  |
|-----------------------|-------|-------|-------|-------|
| Volume Total (vph)    | 398   | 478   | 202   | 449   |
| Volume Left (vph)     | 100   | 159   | 15    | 1     |
| Volume Right (vph)    | 91    | 1     | 58    | 138   |
| Hadj (s)              | -0.05 | 0.10  | -0.12 | -0.15 |
| Departure Headway (s) | 8.3   | 8.4   | 9.2   | 8.0   |
| Degree Utilization, x | 0.91  | 1.12  | 0.52  | 1.00  |
| Capacity (veh/h)      | 428   | 441   | 372   | 444   |
| Control Delay (s)     | 53.4  | 107.4 | 21.6  | 70.2  |
| Approach Delay (s)    | 53.4  | 107.4 | 21.6  | 70.2  |
| Approach LOS          | F     | F     | C     | F     |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Delay                             |       | 71.0                 |   |
| HCM Level of Service              |       | F                    |   |
| Intersection Capacity Utilization | 69.8% | ICU Level of Service | C |
| Analysis Period (min)             |       | 15                   |   |



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Sign Control           |      | Stop |      |      | Stop |      |      | Free |      |      | Free |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Volume (veh/h)         | 33   | 177  | 6    | 317  | 372  | 7    | 17   | 334  | 189  | 24   | 714  | 106  |
| Peak Hour Factor       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 33   | 177  | 6    | 317  | 372  | 7    | 17   | 334  | 189  | 24   | 714  | 106  |
| Pedestrians            |      |      |      |      |      |      |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |      |      |      |      |      |
| Median type            |      | None |      |      | None |      |      |      |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      |      |      |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC, conflicting volume | 1470 | 1372 | 767  | 1372 | 1330 | 428  | 820  |      |      | 523  |      |      |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 1470 | 1372 | 767  | 1372 | 1330 | 428  | 820  |      |      | 523  |      |      |
| tC, single (s)         | 7.1  | 6.5  | 6.2  | 7.1  | 6.5  | 6.2  | 4.1  |      |      | 4.1  |      |      |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 3.5  | 4.0  | 3.3  | 3.5  | 4.0  | 3.3  | 2.2  |      |      | 2.2  |      |      |
| p0 queue free %        | 0    | 0    | 99   | 0    | 0    | 99   | 98   |      |      | 98   |      |      |
| cM capacity (veh/h)    | 0    | 140  | 402  | 0    | 148  | 626  | 809  |      |      | 1043 |      |      |

| Direction, Lane #      | EB 1 | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 216  | 696  | 540  | 844  |
| Volume Left            | 33   | 317  | 17   | 24   |
| Volume Right           | 6    | 7    | 189  | 106  |
| cSH                    | 0    | 0    | 809  | 1043 |
| Volume to Capacity     | Err  | Err  | 0.02 | 0.02 |
| Queue Length 95th (ft) | Err  | Err  | 2    | 2    |
| Control Delay (s)      | Err  | Err  | 0.6  | 0.6  |
| Lane LOS               | F    | F    | A    | A    |
| Approach Delay (s)     | Err  | Err  | 0.6  | 0.6  |
| Approach LOS           | F    | F    |      |      |

| Intersection Summary              |        |                      |   |
|-----------------------------------|--------|----------------------|---|
| Average Delay                     |        | Err                  |   |
| Intersection Capacity Utilization | 113.3% | ICU Level of Service | H |
| Analysis Period (min)             | 15     |                      |   |



| Movement                          | EBL         | EBR         | NBL         | NBT                  | SBT  | SBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               |             |             |             |                      |      |      |
| Sign Control                      | Stop        |             |             | Free                 | Free |      |
| Grade                             | 0%          |             |             | 0%                   | 0%   |      |
| Volume (veh/h)                    | 256         | 9           | 35          | 262                  | 516  | 443  |
| Peak Hour Factor                  | 1.00        | 1.00        | 1.00        | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 256         | 9           | 35          | 262                  | 516  | 443  |
| Pedestrians                       |             |             |             |                      |      |      |
| Lane Width (ft)                   |             |             |             |                      |      |      |
| Walking Speed (ft/s)              |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       | None        |             |             |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| Upstream signal (ft)              |             |             |             |                      |      |      |
| pX, platoon unblocked             |             |             |             |                      |      |      |
| vC, conflicting volume            | 1070        | 738         | 959         |                      |      |      |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| vCu, unblocked vol                | 1070        | 738         | 959         |                      |      |      |
| tC, single (s)                    | 6.4         | 6.2         | 4.1         |                      |      |      |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            | 3.5         | 3.3         | 2.2         |                      |      |      |
| p0 queue free %                   | 0           | 98          | 95          |                      |      |      |
| cM capacity (veh/h)               | 233         | 418         | 717         |                      |      |      |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>NB 1</b> | <b>SB 1</b> |                      |      |      |
| Volume Total                      | 265         | 297         | 959         |                      |      |      |
| Volume Left                       | 256         | 35          | 0           |                      |      |      |
| Volume Right                      | 9           | 0           | 443         |                      |      |      |
| cSH                               | 237         | 717         | 1700        |                      |      |      |
| Volume to Capacity                | 1.12        | 0.05        | 0.56        |                      |      |      |
| Queue Length 95th (ft)            | 298         | 4           | 0           |                      |      |      |
| Control Delay (s)                 | 139.0       | 1.7         | 0.0         |                      |      |      |
| Lane LOS                          | F           | A           |             |                      |      |      |
| Approach Delay (s)                | 139.0       | 1.7         | 0.0         |                      |      |      |
| Approach LOS                      | F           |             |             |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 24.6        |                      |      |      |
| Intersection Capacity Utilization |             | 75.6%       |             | ICU Level of Service |      | D    |
| Analysis Period (min)             |             |             | 15          |                      |      |      |



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Sign Control           |      | Stop |      |      | Stop |      |      | Free |      |      | Free |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Volume (veh/h)         | 26   | 0    | 61   | 0    | 0    | 0    | 91   | 354  | 0    | 0    | 925  | 63   |
| Peak Hour Factor       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 26   | 0    | 61   | 0    | 0    | 0    | 91   | 354  | 0    | 0    | 925  | 63   |
| Pedestrians            |      |      |      |      |      |      |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |      |      |      |      |      |
| Median type            |      | None |      |      | None |      |      |      |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      |      |      |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC, conflicting volume | 1492 | 1492 | 956  | 1554 | 1524 | 354  | 988  |      |      | 354  |      |      |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 1492 | 1492 | 956  | 1554 | 1524 | 354  | 988  |      |      | 354  |      |      |
| tC, single (s)         | 7.1  | 6.5  | 6.2  | 7.1  | 6.5  | 6.2  | 4.1  |      |      | 4.1  |      |      |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 3.5  | 4.0  | 3.3  | 3.5  | 4.0  | 3.3  | 2.2  |      |      | 2.2  |      |      |
| p0 queue free %        | 72   | 100  | 80   | 100  | 100  | 100  | 87   |      |      | 100  |      |      |
| cM capacity (veh/h)    | 91   | 107  | 313  | 67   | 103  | 690  | 699  |      |      | 1205 |      |      |

| Direction, Lane #      | EB 1 | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 87   | 0    | 445  | 988  |
| Volume Left            | 26   | 0    | 91   | 0    |
| Volume Right           | 61   | 0    | 0    | 63   |
| cSH                    | 182  | 1700 | 699  | 1205 |
| Volume to Capacity     | 0.48 | 0.00 | 0.13 | 0.00 |
| Queue Length 95th (ft) | 58   | 0    | 11   | 0    |
| Control Delay (s)      | 41.9 | 0.0  | 3.7  | 0.0  |
| Lane LOS               | E    | A    | A    |      |
| Approach Delay (s)     | 41.9 | 0.0  | 3.7  | 0.0  |
| Approach LOS           | E    | A    |      |      |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 3.5                  |   |
| Intersection Capacity Utilization | 91.4% | ICU Level of Service | F |
| Analysis Period (min)             |       | 15                   |   |