



| Lane Group              | WBL  | WBR  | NBT   | NBR  | SBL   | SBT  |
|-------------------------|------|------|-------|------|-------|------|
| Lane Group Flow (vph)   | 402  | 551  | 2187  | 345  | 347   | 965  |
| v/c Ratio               | 0.48 | 0.94 | 1.11  | 0.37 | 1.14  | 0.40 |
| Control Delay           | 46.0 | 65.2 | 79.8  | 2.9  | 147.7 | 10.1 |
| Queue Delay             | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| Total Delay             | 46.0 | 65.2 | 79.8  | 2.9  | 147.7 | 10.1 |
| Queue Length 50th (ft)  | 156  | 459  | ~1149 | 26   | ~182  | 180  |
| Queue Length 95th (ft)  | 208  | #651 | #1184 | 18   | #231  | 218  |
| Internal Link Dist (ft) | 497  |      | 121   |      |       | 322  |
| Turn Bay Length (ft)    |      | 125  |       |      | 150   |      |
| Base Capacity (vph)     | 831  | 589  | 1966  | 935  | 305   | 2388 |
| Starvation Cap Reductn  | 0    | 0    | 0     | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0     | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.48 | 0.94 | 1.11  | 0.37 | 1.14  | 0.40 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

1: S Lamar Blvd & W Oltorf Street  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | WBL  | WBR   | NBT   | NBR  | SBL                       | SBT  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|
| Lane Configurations               | ↖↗   | ↖     | ↕↕    | ↖    | ↖↗                        | ↕↕   |
| Traffic Volume (vph)              | 362  | 479   | 1881  | 276  | 274                       | 936  |
| Future Volume (vph)               | 362  | 479   | 1881  | 276  | 274                       | 936  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                      | 1900 |
| Total Lost time (s)               | 5.0  | 5.0   | 5.0   | 5.0  | 5.0                       | 5.0  |
| Lane Util. Factor                 | 0.97 | 1.00  | 0.95  | 1.00 | 0.97                      | 0.95 |
| Frpb, ped/bikes                   | 1.00 | 1.00  | 1.00  | 0.98 | 1.00                      | 1.00 |
| Flpb, ped/bikes                   | 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 |
| Flt Protected                     | 0.95 | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00 |
| Satd. Flow (prot)                 | 3400 | 1583  | 3539  | 1525 | 3433                      | 3505 |
| Flt Permitted                     | 0.95 | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00 |
| Satd. Flow (perm)                 | 3400 | 1583  | 3539  | 1525 | 3433                      | 3505 |
| Peak-hour factor, PHF             | 0.90 | 0.87  | 0.86  | 0.80 | 0.79                      | 0.97 |
| Adj. Flow (vph)                   | 402  | 551   | 2187  | 345  | 347                       | 965  |
| RTOR Reduction (vph)              | 0    | 3     | 0     | 88   | 0                         | 0    |
| Lane Group Flow (vph)             | 402  | 548   | 2187  | 257  | 347                       | 965  |
| Confl. Peds. (#/hr)               |      | 4     |       | 2    | 2                         |      |
| Confl. Bikes (#/hr)               |      | 1     |       | 5    |                           |      |
| Heavy Vehicles (%)                | 3%   | 2%    | 2%    | 4%   | 2%                        | 3%   |
| Turn Type                         | Prot | pt+ov | NA    | Perm | Prot                      | NA   |
| Protected Phases                  | 4    | 1 4   | 2     |      | 1                         | 6    |
| Permitted Phases                  |      | 4     |       | 2    |                           |      |
| Actuated Green, G (s)             | 33.0 | 50.0  | 75.0  | 75.0 | 12.0                      | 92.0 |
| Effective Green, g (s)            | 33.0 | 50.0  | 75.0  | 75.0 | 12.0                      | 92.0 |
| Actuated g/C Ratio                | 0.24 | 0.37  | 0.56  | 0.56 | 0.09                      | 0.68 |
| Clearance Time (s)                | 5.0  |       | 5.0   | 5.0  | 5.0                       | 5.0  |
| Vehicle Extension (s)             | 1.0  |       | 1.0   | 1.0  | 1.0                       | 1.0  |
| Lane Grp Cap (vph)                | 831  | 586   | 1966  | 847  | 305                       | 2388 |
| v/s Ratio Prot                    | 0.12 | c0.35 | c0.62 |      | c0.10                     | 0.28 |
| v/s Ratio Perm                    |      |       |       | 0.17 |                           |      |
| v/c Ratio                         | 0.48 | 0.93  | 1.11  | 0.30 | 1.14                      | 0.40 |
| Uniform Delay, d1                 | 43.7 | 40.9  | 30.0  | 16.0 | 61.5                      | 9.5  |
| Progression Factor                | 1.00 | 1.00  | 0.74  | 0.31 | 1.00                      | 1.00 |
| Incremental Delay, d2             | 2.0  | 24.2  | 56.3  | 0.6  | 94.1                      | 0.5  |
| Delay (s)                         | 45.7 | 65.1  | 78.5  | 5.7  | 155.6                     | 10.0 |
| Level of Service                  | D    | E     | E     | A    | F                         | A    |
| Approach Delay (s)                | 56.9 |       | 68.6  |      |                           | 48.5 |
| Approach LOS                      | E    |       | E     |      |                           | D    |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |
| HCM 2000 Control Delay            |      |       | 60.8  |      | HCM 2000 Level of Service | E    |
| HCM 2000 Volume to Capacity ratio |      |       | 1.09  |      |                           |      |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      | 15.0 |
| Intersection Capacity Utilization |      |       | 90.4% |      | ICU Level of Service      | E    |
| Analysis Period (min)             |      |       | 15    |      |                           |      |
| c Critical Lane Group             |      |       |       |      |                           |      |



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NBL  | NBT  | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 111  | 44   | 185  | 116  | 162  | 2045 | 85   | 43    | 1547 |
| v/c Ratio               | 0.46 | 0.11 | 0.43 | 0.70 | 0.71 | 0.83 | 0.08 | 0.83  | 0.76 |
| Control Delay           | 51.4 | 43.9 | 20.9 | 56.5 | 27.6 | 22.8 | 3.8  | 109.2 | 26.5 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  |
| Total Delay             | 51.4 | 43.9 | 20.9 | 56.5 | 27.6 | 22.8 | 3.8  | 109.2 | 26.5 |
| Queue Length 50th (ft)  | 85   | 32   | 50   | 57   | 71   | 705  | 10   | 22    | 388  |
| Queue Length 95th (ft)  | 112  | 51   | 101  | 113  | m#90 | 653  | m14  | #55   | 410  |
| Internal Link Dist (ft) |      | 215  |      | 74   |      | 201  |      |       | 588  |
| Turn Bay Length (ft)    | 75   |      | 50   |      | 50   |      | 125  | 50    |      |
| Base Capacity (vph)     | 243  | 422  | 437  | 210  | 227  | 2488 | 1023 | 55    | 2132 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.46 | 0.10 | 0.42 | 0.55 | 0.71 | 0.82 | 0.08 | 0.78  | 0.73 |

**Intersection Summary**

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

2: S Lamar Blvd & Bluebonnet Lane  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|-------|-------|------|-------|------|------|
| Lane Configurations    |       |      |      |      |       |      |       |       |      |       |      |      |
| Traffic Volume (vph)   | 82    | 31   | 152  | 0    | 37    | 52   | 147   | 1677  | 69   | 26    | 1264 | 3    |
| Future Volume (vph)    | 82    | 31   | 152  | 0    | 37    | 52   | 147   | 1677  | 69   | 26    | 1264 | 3    |
| 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   |      | 5.0   | 5.0   | 5.0  | 5.0   | 5.0  |      |
| Lane Util. Factor      | 1.00  | 1.00 | 1.00 |      | 1.00  |      | 1.00  | 0.95  | 1.00 | 1.00  | 0.95 |      |
| Frpb, ped/bikes        | 1.00  | 1.00 | 0.98 |      | 0.99  |      | 1.00  | 1.00  | 0.96 | 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 |      |
| Frt                    | 1.00  | 1.00 | 0.85 |      | 0.92  |      | 1.00  | 1.00  | 0.85 | 1.00  | 1.00 |      |
| Flt Protected          | 0.95  | 1.00 | 1.00 |      | 1.00  |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1769  | 1900 | 1554 |      | 1717  |      | 1787  | 3505  | 1412 | 1703  | 3469 |      |
| Flt Permitted          | 0.30  | 1.00 | 1.00 |      | 1.00  |      | 0.08  | 1.00  | 1.00 | 0.05  | 1.00 |      |
| Satd. Flow (perm)      | 557   | 1900 | 1554 |      | 1717  |      | 141   | 3505  | 1412 | 90    | 3469 |      |
| Peak-hour factor, PHF  | 0.74  | 0.71 | 0.82 | 0.87 | 0.86  | 0.71 | 0.91  | 0.82  | 0.81 | 0.61  | 0.82 | 0.50 |
| Adj. Flow (vph)        | 111   | 44   | 185  | 0    | 43    | 73   | 162   | 2045  | 85   | 43    | 1541 | 6    |
| RTOR Reduction (vph)   | 0     | 0    | 93   | 0    | 47    | 0    | 0     | 0     | 22   | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 111   | 44   | 92   | 0    | 69    | 0    | 162   | 2045  | 63   | 43    | 1547 | 0    |
| Confl. Peds. (#/hr)    | 1     |      | 4    | 4    |       | 1    | 7     |       | 6    | 6     |      | 7    |
| Confl. Bikes (#/hr)    |       |      |      |      |       | 1    |       |       |      |       |      | 1    |
| Heavy Vehicles (%)     | 2%    | 0%   | 2%   | 3%   | 0%    | 0%   | 1%    | 3%    | 10%  | 6%    | 4%   | 0%   |
| Turn Type              | pm+pt | NA   | Perm |      | NA    |      | pm+pt | NA    | Perm | Perm  | NA   |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      | 5     | 2     |      |       | 6    |      |
| Permitted Phases       | 4     |      | 4    |      |       |      | 2     |       | 2    | 6     |      |      |
| Actuated Green, G (s)  | 29.1  | 29.1 | 29.1 |      | 9.4   |      | 94.9  | 94.9  | 94.9 | 79.3  | 79.3 |      |
| Effective Green, g (s) | 29.1  | 29.1 | 29.1 |      | 9.4   |      | 94.9  | 94.9  | 94.9 | 79.3  | 79.3 |      |
| Actuated g/C Ratio     | 0.22  | 0.22 | 0.22 |      | 0.07  |      | 0.70  | 0.70  | 0.70 | 0.59  | 0.59 |      |
| Clearance Time (s)     | 6.0   | 6.0  | 6.0  |      | 6.0   |      | 5.0   | 5.0   | 5.0  | 5.0   | 5.0  |      |
| Vehicle Extension (s)  | 2.0   | 2.0  | 2.0  |      | 2.0   |      | 1.0   | 1.0   | 1.0  | 1.0   | 1.0  |      |
| Lane Grp Cap (vph)     | 243   | 409  | 334  |      | 119   |      | 228   | 2463  | 992  | 52    | 2037 |      |
| v/s Ratio Prot         | c0.05 | 0.02 |      |      | c0.04 |      | 0.06  | c0.58 |      |       | 0.45 |      |
| v/s Ratio Perm         | 0.05  |      | 0.06 |      |       |      | 0.44  |       | 0.04 | 0.48  |      |      |
| v/c Ratio              | 0.46  | 0.11 | 0.28 |      | 0.58  |      | 0.71  | 0.83  | 0.06 | 0.83  | 0.76 |      |
| Uniform Delay, d1      | 44.6  | 42.5 | 44.2 |      | 60.9  |      | 26.0  | 14.3  | 6.2  | 22.3  | 20.7 |      |
| Progression Factor     | 1.00  | 1.00 | 1.00 |      | 1.00  |      | 1.02  | 1.44  | 2.18 | 1.17  | 1.15 |      |
| Incremental Delay, d2  | 0.5   | 0.0  | 0.2  |      | 4.6   |      | 8.1   | 1.6   | 0.1  | 78.2  | 2.6  |      |
| Delay (s)              | 45.1  | 42.6 | 44.3 |      | 65.5  |      | 34.6  | 22.1  | 13.7 | 104.3 | 26.5 |      |
| Level of Service       | D     | D    | D    |      | E     |      | C     | C     | B    | F     | C    |      |
| Approach Delay (s)     |       | 44.4 |      |      | 65.5  |      |       | 22.7  |      |       | 28.6 |      |
| Approach LOS           |       | D    |      |      | E     |      |       | C     |      |       | C    |      |

| Intersection Summary              |       |                           |
|-----------------------------------|-------|---------------------------|
| HCM 2000 Control Delay            | 27.7  | HCM 2000 Level of Service |
| HCM 2000 Volume to Capacity ratio | 0.81  | C                         |
| Actuated Cycle Length (s)         | 135.0 | Sum of lost time (s)      |
| Intersection Capacity Utilization | 93.0% | 22.0                      |
| Analysis Period (min)             | 15    | ICU Level of Service      |
|                                   |       | F                         |
| c Critical Lane Group             |       |                           |



| Lane Group              | WBR  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 841  | 1676 | 8    | 455  | 1225 |
| v/c Ratio               | 0.73 | 0.96 | 0.01 | 0.62 | 0.56 |
| Control Delay           | 37.6 | 28.9 | 3.4  | 53.5 | 7.6  |
| Queue Delay             | 0.0  | 4.8  | 0.0  | 0.0  | 0.1  |
| Total Delay             | 37.6 | 33.7 | 3.4  | 53.5 | 7.7  |
| Queue Length 50th (ft)  | 343  | 760  | 1    | 418  | 152  |
| Queue Length 95th (ft)  | 431  | 473  | m1   | 501  | 185  |
| Internal Link Dist (ft) |      | 324  |      |      | 498  |
| Turn Bay Length (ft)    |      |      |      | 100  |      |
| Base Capacity (vph)     | 1146 | 1748 | 802  | 728  | 2185 |
| Starvation Cap Reductn  | 0    | 59   | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 127  |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.73 | 0.99 | 0.01 | 0.63 | 0.60 |

**Intersection Summary**

m Volume for 95th percentile queue is metered by upstream signal.

3: S Lamar Blvd & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

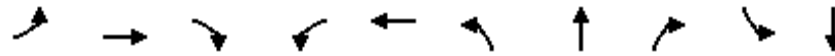
Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | WBL  | WBR   | NBT   | NBR  | SBL                       | SBT  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|
| Lane Configurations               |      | ↔↔    | ↕↕    | ↗    | ↘                         | ↕↕   |
| Traffic Volume (vph)              | 0    | 799   | 1257  | 5    | 387                       | 1090 |
| Future Volume (vph)               | 0    | 799   | 1257  | 5    | 387                       | 1090 |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                      | 1900 |
| Total Lost time (s)               |      | 6.0   | 6.0   | 6.0  | 6.0                       | 6.0  |
| Lane Util. Factor                 |      | 0.88  | 0.95  | 1.00 | 1.00                      | 0.95 |
| Frbp, ped/bikes                   |      | 1.00  | 1.00  | 0.98 | 1.00                      | 1.00 |
| Flpb, ped/bikes                   |      | 1.00  | 1.00  | 1.00 | 1.00                      | 1.00 |
| Frt                               |      | 0.85  | 1.00  | 0.85 | 1.00                      | 1.00 |
| Flt Protected                     |      | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00 |
| Satd. Flow (prot)                 |      | 2787  | 3471  | 1589 | 1787                      | 3471 |
| Flt Permitted                     |      | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00 |
| Satd. Flow (perm)                 |      | 2787  | 3471  | 1589 | 1787                      | 3471 |
| Peak-hour factor, PHF             | 0.92 | 0.95  | 0.75  | 0.60 | 0.85                      | 0.89 |
| Adj. Flow (vph)                   | 0    | 841   | 1676  | 8    | 455                       | 1225 |
| RTOR Reduction (vph)              | 0    | 11    | 0     | 2    | 0                         | 0    |
| Lane Group Flow (vph)             | 0    | 830   | 1676  | 6    | 455                       | 1225 |
| Confl. Peds. (#/hr)               |      | 1     |       | 4    | 4                         |      |
| Heavy Vehicles (%)                | 2%   | 2%    | 4%    | 0%   | 1%                        | 4%   |
| Turn Type                         |      | pt+ov | NA    | Perm | Prot                      | NA   |
| Protected Phases                  |      | 1 4   | 2 3   |      | 1 4                       | 1 2  |
| Permitted Phases                  |      |       |       | 2 3  |                           |      |
| Actuated Green, G (s)             |      | 55.0  | 68.0  | 68.0 | 55.0                      | 85.0 |
| Effective Green, g (s)            |      | 55.0  | 68.0  | 68.0 | 55.0                      | 85.0 |
| Actuated g/C Ratio                |      | 0.41  | 0.50  | 0.50 | 0.41                      | 0.63 |
| Clearance Time (s)                |      |       |       |      |                           |      |
| Vehicle Extension (s)             |      |       |       |      |                           |      |
| Lane Grp Cap (vph)                |      | 1135  | 1748  | 800  | 728                       | 2185 |
| v/s Ratio Prot                    |      | c0.30 | c0.48 |      | 0.25                      | 0.35 |
| v/s Ratio Perm                    |      |       |       | 0.00 |                           |      |
| v/c Ratio                         |      | 0.73  | 0.96  | 0.01 | 0.62                      | 0.56 |
| Uniform Delay, d1                 |      | 33.8  | 32.2  | 16.7 | 31.8                      | 14.3 |
| Progression Factor                |      | 1.00  | 0.54  | 0.28 | 1.56                      | 0.47 |
| Incremental Delay, d2             |      | 2.1   | 9.9   | 0.0  | 0.9                       | 0.7  |
| Delay (s)                         |      | 35.9  | 27.2  | 4.6  | 50.4                      | 7.5  |
| Level of Service                  |      | D     | C     | A    | D                         | A    |
| Approach Delay (s)                | 35.9 |       | 27.1  |      |                           | 19.1 |
| Approach LOS                      | D    |       | C     |      |                           | B    |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |
| HCM 2000 Control Delay            |      |       | 25.7  |      | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio |      |       | 0.95  |      |                           |      |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      | 24.0 |
| Intersection Capacity Utilization |      |       | 82.9% |      | ICU Level of Service      | E    |
| Analysis Period (min)             |      |       | 15    |      |                           |      |
| c Critical Lane Group             |      |       |       |      |                           |      |

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
Queues

Brodie Oaks Center TIA  
Imps-Phase 1-2026 Site+Forecasted AM



| Lane Group              | EBL  | EBT  | EBR  | WBL  | WBT  | NBL  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 173  | 149  | 226  | 108  | 166  | 169  | 1546 | 53   | 50   | 1220 |
| v/c Ratio               | 0.73 | 0.40 | 0.45 | 0.50 | 0.24 | 0.47 | 0.71 | 0.05 | 0.76 | 0.76 |
| Control Delay           | 69.1 | 50.6 | 8.7  | 57.3 | 45.8 | 62.9 | 3.8  | 0.1  | 94.4 | 10.3 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.9  | 0.0  | 0.0  | 0.4  |
| Total Delay             | 69.1 | 50.6 | 8.7  | 57.3 | 45.8 | 62.9 | 4.7  | 0.1  | 94.4 | 10.7 |
| Queue Length 50th (ft)  | 143  | 115  | 0    | 85   | 64   | 117  | 58   | 0    | 46   | 226  |
| Queue Length 95th (ft)  | 150  | 175  | 64   | 104  | 86   | m139 | 65   | m0   | 55   | 304  |
| Internal Link Dist (ft) |      | 257  |      |      | 238  |      | 436  |      |      | 324  |
| Turn Bay Length (ft)    | 90   |      |      | 100  |      | 125  |      | 160  | 100  |      |
| Base Capacity (vph)     | 238  | 376  | 497  | 215  | 706  | 357  | 2185 | 981  | 66   | 1609 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 93   |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 342  | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.73 | 0.40 | 0.45 | 0.50 | 0.24 | 0.47 | 0.84 | 0.05 | 0.76 | 0.80 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

| Movement                          | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL                       | NBT   | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|------|-------|------|------|------|---------------------------|-------|------|------|-------|------|
| Lane Configurations               |       |      |       |      |      |      |                           |       |      |      |       |      |
| Traffic Volume (vph)              | 109   | 128  | 199   | 71   | 128  | 6    | 144                       | 1144  | 49   | 28   | 992   | 65   |
| Future Volume (vph)               | 109   | 128  | 199   | 71   | 128  | 6    | 144                       | 1144  | 49   | 28   | 992   | 65   |
| 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   | 6.0  | 6.0  | 6.0   |      |
| Lane Util. Factor                 | 1.00  | 1.00 | 1.00  | 1.00 | 0.95 |      | 1.00                      | 0.95  | 1.00 | 1.00 | 0.95  |      |
| Frpb, ped/bikes                   | 1.00  | 1.00 | 0.98  | 1.00 | 1.00 |      | 1.00                      | 1.00  | 0.98 | 1.00 | 1.00  |      |
| Flpb, ped/bikes                   | 1.00  | 1.00 | 1.00  | 0.99 | 1.00 |      | 1.00                      | 1.00  | 1.00 | 1.00 | 1.00  |      |
| Frt                               | 1.00  | 1.00 | 0.85  | 1.00 | 0.99 |      | 1.00                      | 1.00  | 0.85 | 1.00 | 0.99  |      |
| Flt Protected                     | 0.95  | 1.00 | 1.00  | 0.95 | 1.00 |      | 0.95                      | 1.00  | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 1748  | 1881 | 1583  | 1796 | 3523 |      | 1787                      | 3471  | 1516 | 1805 | 3438  |      |
| Flt Permitted                     | 0.65  | 1.00 | 1.00  | 0.57 | 1.00 |      | 0.95                      | 1.00  | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 | 1190  | 1881 | 1583  | 1078 | 3523 |      | 1787                      | 3471  | 1516 | 1805 | 3438  |      |
| Peak-hour factor, PHF             | 0.63  | 0.86 | 0.88  | 0.66 | 0.80 | 0.95 | 0.85                      | 0.74  | 0.93 | 0.56 | 0.88  | 0.70 |
| Adj. Flow (vph)                   | 173   | 149  | 226   | 108  | 160  | 6    | 169                       | 1546  | 53   | 50   | 1127  | 93   |
| RTOR Reduction (vph)              | 0     | 0    | 181   | 0    | 2    | 0    | 0                         | 0     | 20   | 0    | 4     | 0    |
| Lane Group Flow (vph)             | 173   | 149  | 45    | 108  | 164  | 0    | 169                       | 1546  | 33   | 50   | 1216  | 0    |
| Confl. Peds. (#/hr)               | 2     |      | 4     | 4    |      | 2    | 2                         |       | 4    | 4    |       | 2    |
| Confl. Bikes (#/hr)               |       |      | 1     |      |      |      |                           |       | 1    |      |       | 2    |
| Heavy Vehicles (%)                | 3%    | 1%   | 0%    | 0%   | 1%   | 25%  | 1%                        | 4%    | 4%   | 0%   | 4%    | 0%   |
| Turn Type                         | Perm  | NA   | Perm  | Perm | NA   |      | Prot                      | NA    | Perm | Prot | NA    |      |
| Protected Phases                  |       | 8    |       |      | 8    |      | 5                         | 5 6   |      | 7    | 6 7   |      |
| Permitted Phases                  | 8     |      | 8     | 8    |      |      |                           |       | 5 6  |      |       |      |
| Actuated Green, G (s)             | 27.0  | 27.0 | 27.0  | 27.0 | 27.0 |      | 27.0                      | 85.0  | 85.0 | 5.0  | 63.0  |      |
| Effective Green, g (s)            | 27.0  | 27.0 | 27.0  | 27.0 | 27.0 |      | 27.0                      | 85.0  | 85.0 | 5.0  | 63.0  |      |
| Actuated g/C Ratio                | 0.20  | 0.20 | 0.20  | 0.20 | 0.20 |      | 0.20                      | 0.63  | 0.63 | 0.04 | 0.47  |      |
| 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  |      | 1.0                       |       |      | 1.0  |       |      |
| Lane Grp Cap (vph)                | 238   | 376  | 316   | 215  | 704  |      | 357                       | 2185  | 954  | 66   | 1604  |      |
| v/s Ratio Prot                    |       | 0.08 |       |      | 0.05 |      | 0.09                      | c0.45 |      | 0.03 | c0.35 |      |
| v/s Ratio Perm                    | c0.15 |      | 0.03  | 0.10 |      |      |                           |       | 0.02 |      |       |      |
| v/c Ratio                         | 0.73  | 0.40 | 0.14  | 0.50 | 0.23 |      | 0.47                      | 0.71  | 0.03 | 0.76 | 0.76  |      |
| Uniform Delay, d1                 | 50.5  | 46.9 | 44.5  | 48.0 | 45.3 |      | 47.7                      | 16.7  | 9.5  | 64.4 | 29.7  |      |
| Progression Factor                | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |      | 1.25                      | 0.17  | 0.00 | 0.65 | 0.25  |      |
| Incremental Delay, d2             | 17.6  | 3.1  | 0.9   | 8.2  | 0.8  |      | 2.3                       | 1.0   | 0.0  | 30.6 | 1.6   |      |
| Delay (s)                         | 68.2  | 50.0 | 45.4  | 56.2 | 46.1 |      | 62.1                      | 3.8   | 0.0  | 72.7 | 8.9   |      |
| Level of Service                  | E     | D    | D     | E    | D    |      | E                         | A     | A    | E    | A     |      |
| Approach Delay (s)                |       | 53.8 |       |      | 50.1 |      |                           | 9.2   |      |      | 11.4  |      |
| Approach LOS                      |       | D    |       |      | D    |      |                           | A     |      |      | B     |      |
| <b>Intersection Summary</b>       |       |      |       |      |      |      |                           |       |      |      |       |      |
| HCM 2000 Control Delay            |       |      | 19.2  |      |      |      | HCM 2000 Level of Service |       |      |      | B     |      |
| HCM 2000 Volume to Capacity ratio |       |      | 0.80  |      |      |      |                           |       |      |      |       |      |
| Actuated Cycle Length (s)         |       |      | 135.0 |      |      |      | Sum of lost time (s)      |       |      |      | 24.0  |      |
| Intersection Capacity Utilization |       |      | 90.0% |      |      |      | ICU Level of Service      |       |      |      | E     |      |
| Analysis Period (min)             |       |      | 15    |      |      |      |                           |       |      |      |       |      |
| c Critical Lane Group             |       |      |       |      |      |      |                           |       |      |      |       |      |



























| Lane Group              | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 99   | 170  | 5    | 229  | 25   | 1844 | 203  | 228   | 1196 |
| v/c Ratio               | 0.30 | 0.64 | 0.01 | 0.49 | 0.10 | 0.92 | 0.21 | 0.99  | 0.48 |
| Control Delay           | 41.0 | 60.8 | 42.7 | 16.0 | 14.1 | 34.4 | 4.7  | 108.7 | 3.1  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  |
| Total Delay             | 41.0 | 60.8 | 42.7 | 16.0 | 14.1 | 34.4 | 4.7  | 108.7 | 3.1  |
| Queue Length 50th (ft)  | 63   | 138  | 4    | 37   | 9    | 718  | 21   | 164   | 48   |
| Queue Length 95th (ft)  | 75   | 148  | 10   | 75   | 18   | 512  | 32   | #237  | 66   |
| Internal Link Dist (ft) | 270  |      | 212  |      |      | 208  |      |       | 469  |
| Turn Bay Length (ft)    |      | 120  |      | 100  | 95   |      |      | 125   |      |
| Base Capacity (vph)     | 330  | 267  | 409  | 464  | 258  | 2044 | 957  | 231   | 2508 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.30 | 0.64 | 0.01 | 0.49 | 0.10 | 0.90 | 0.21 | 0.99  | 0.48 |

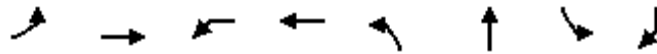
**Intersection Summary**

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

5: S Lamar Blvd & Private Driveway/Panther Trail  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 31  | 8   | 20  | 109   | 3   | 176   | 17   | 1291  | 144   | 173   | 1089  | 19  |
| Future Volume (veh/h)        | 31  | 8   | 20  | 109   | 3   | 176   | 17   | 1291  | 144   | 173   | 1089  | 19  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.99  |   | 0.99  | 0.99  |   | 0.99  | 1.00   |   | 1.00  | 1.00  |   | 0.97  |
| 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  |
| Adj Sat Flow, veh/h/ln       | 1900  | 1854  | 1900  | 1827  | 1900  | 1810  | 1900   | 1863  | 1881  | 1810  | 1843  | 1900  |
| Adj Flow Rate, veh/h         | 55  | 13  | 31  | 170   | 5   | 229   | 25   | 1844  | 203   | 228   | 1171  | 25  |
| Adj No. of Lanes             | 0   | 1   | 0   | 1   | 1   | 1   | 1  | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 0.56  | 0.62  | 0.65  | 0.64  | 0.60  | 0.77  | 0.69   | 0.70  | 0.71  | 0.76  | 0.93  | 0.75  |
| Percent Heavy Veh, %         | 0   | 0   | 8   | 4   | 0   | 5   | 0  | 2   | 1   | 5   | 3   | 8   |
| Cap, veh/h                   | 184   | 48  | 87  | 320   | 394   | 316   | 328  | 2059  | 927   | 251   | 2517  | 54  |
| Arrive On Green              | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.58   | 0.58  | 0.58  | 0.10  | 0.72  | 0.72  |
| Sat Flow, veh/h              | 686   | 231   | 418   | 1321  | 1900  | 1525  | 475  | 3539  | 1594  | 1723  | 3503  | 75  |
| Grp Volume(v), veh/h         | 99  | 0   | 0   | 170   | 5   | 229   | 25   | 1844  | 203   | 228   | 585   | 611   |
| Grp Sat Flow(s),veh/h/ln     | 1335  | 0   | 0   | 1321  | 1900  | 1525  | 475  | 1770  | 1594  | 1723  | 1751  | 1827  |
| Q Serve(g_s), s              | 6.6   | 0.0   | 0.0   | 8.5   | 0.3   | 18.9  | 3.2  | 61.4  | 8.2   | 11.4  | 19.1  | 19.1  |
| Cycle Q Clear(g_c), s        | 8.2   | 0.0   | 0.0   | 16.7  | 0.3   | 18.9  | 3.8  | 61.4  | 8.2   | 11.4  | 19.1  | 19.1  |
| Prop In Lane                 | 0.56  |   | 0.31  | 1.00  |   | 1.00  | 1.00   |   | 1.00  | 1.00  |   | 0.04  |
| Lane Grp Cap(c), veh/h       | 318   | 0   | 0   | 320   | 394   | 316   | 328  | 2059  | 927   | 251   | 1258  | 1313  |
| V/C Ratio(X)                 | 0.31  | 0.00  | 0.00  | 0.53  | 0.01  | 0.72  | 0.08   | 0.90  | 0.22  | 0.91  | 0.47  | 0.47  |
| Avail Cap(c_a), veh/h        | 318   | 0   | 0   | 320   | 394   | 316   | 328  | 2059  | 927   | 257   | 1258  | 1313  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 45.5  | 0.0   | 0.0   | 49.2  | 42.5  | 49.9  | 12.7   | 24.7  | 13.5  | 42.8  | 8.0   | 8.0   |
| Incr Delay (d2), s/veh       | 2.5   | 0.0   | 0.0   | 6.2   | 0.1   | 13.5  | 0.5  | 6.6   | 0.5   | 32.9  | 1.2   | 1.2   |
| 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     | 3.4   | 0.0   | 0.0   | 6.4   | 0.2   | 9.1   | 0.5  | 31.6  | 3.7   | 10.7  | 9.5   | 9.9   |
| LnGrp Delay(d),s/veh         | 48.0  | 0.0   | 0.0   | 55.4  | 42.6  | 63.4  | 13.2   | 31.3  | 14.1  | 75.7  | 9.3   | 9.2   |
| LnGrp LOS                    | D   |   |   | E   | D   | E   | B  | C   | B   | E   | A   | A   |
| Approach Vol, veh/h          |   | 99  |   |   | 404   |   |  | 2072  |   |   | 1424  |   |
| Approach Delay, s/veh        |   | 48.0  |   |   | 59.8  |   |  | 29.4  |   |   | 19.9  |   |
| Approach LOS                 |   | D   |   |   | E   |   |  | C   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 18.5  | 83.5  |   | 33.0  |   | 102.0   |  | 33.0  |   |   |   |   |
| Change Period (Y+Rc), s      | 5.0   | 5.0   |   | 5.0   |   | 5.0   |  | 5.0   |   |   |   |   |
| Max Green Setting (Gmax), s  | 14.0  | 78.0  |   | 28.0  |   | 97.0  |  | 28.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 13.4  | 63.4  |   | 10.2  |   | 21.1  |  | 20.9  |   |   |   |   |
| Green Ext Time (p_c), s      | 0.0   | 5.5   |   | 0.2   |   | 2.7   |  | 0.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 29.5  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |



| Lane Group              | EBL  | EBT  | WBL  | WBT  | NBL  | NBT  | SBL  | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 304  | 204  | 100  | 127  | 284  | 2266 | 119  | 1140 |
| v/c Ratio               | 0.99 | 0.50 | 0.42 | 0.40 | 0.90 | 0.93 | 0.69 | 0.57 |
| Control Delay           | 93.8 | 13.1 | 42.5 | 18.5 | 87.9 | 39.9 | 77.2 | 22.0 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 93.8 | 13.1 | 42.5 | 18.5 | 87.9 | 39.9 | 77.2 | 22.0 |
| Queue Length 50th (ft)  | ~227 | 10   | 65   | 20   | 124  | 640  | 99   | 228  |
| Queue Length 95th (ft)  | 171  | 9    | 84   | 30   | 138  | 508  | 120  | 278  |
| Internal Link Dist (ft) |      | 165  |      | 155  |      | 606  |      |      |
| Turn Bay Length (ft)    |      |      |      |      |      |      | 160  |      |
| Base Capacity (vph)     | 308  | 405  | 249  | 321  | 317  | 2433 | 173  | 1988 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.99 | 0.50 | 0.40 | 0.40 | 0.90 | 0.93 | 0.69 | 0.57 |

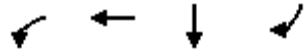
**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Drive/Boys & Girls Center Way  
 HCM Signalized Intersection Capacity Analysis  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | EBL   | EBT  | EBR2   | WBL   | WBT  | WBR  | NBL                       | NBT   | NBR  | SBL  | SBR  | SBR2 |
|-----------------------------------|-------|------|--------|-------|------|------|---------------------------|-------|------|------|------|------|
| Lane Configurations               | ↖     | ↗    |        | ↖     | ↗    |      | ↖↗                        | ↑↑↑   |      | ↖    | ↗↘↙  |      |
| Traffic Volume (vph)              | 161   | 8    | 147    | 68    | 17   | 58   | 207                       | 1608  | 51   | 80   | 915  | 76   |
| Future Volume (vph)               | 161   | 8    | 147    | 68    | 17   | 58   | 207                       | 1608  | 51   | 80   | 915  | 76   |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900   | 1900  | 1900 | 1900 | 1900                      | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 6.5   | 6.5  |        | 6.5   | 6.5  |      | 7.5                       | 5.5   |      | 7.0  | 5.5  |      |
| Lane Util. Factor                 | 1.00  | 1.00 |        | 1.00  | 1.00 |      | 0.97                      | 0.91  |      | 1.00 | 0.64 |      |
| Frpb, ped/bikes                   | 1.00  | 1.00 |        | 1.00  | 0.99 |      | 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 |      |
| Frt                               | 1.00  | 0.86 |        | 1.00  | 0.88 |      | 1.00                      | 0.99  |      | 1.00 | 0.85 |      |
| Flt Protected                     | 0.95  | 1.00 |        | 0.95  | 1.00 |      | 0.95                      | 1.00  |      | 0.95 | 1.00 |      |
| Satd. Flow (prot)                 | 1804  | 1633 |        | 1770  | 1657 |      | 3303                      | 5053  |      | 1736 | 3978 |      |
| Flt Permitted                     | 0.58  | 1.00 |        | 0.40  | 1.00 |      | 0.95                      | 1.00  |      | 0.95 | 1.00 |      |
| Satd. Flow (perm)                 | 1094  | 1633 |        | 746   | 1657 |      | 3303                      | 5053  |      | 1736 | 3978 |      |
| Peak-hour factor, PHF             | 0.53  | 0.62 | 0.77   | 0.68  | 0.62 | 0.58 | 0.73                      | 0.74  | 0.55 | 0.67 | 0.90 | 0.62 |
| Adj. Flow (vph)                   | 304   | 13   | 191    | 100   | 27   | 100  | 284                       | 2173  | 93   | 119  | 1017 | 123  |
| RTOR Reduction (vph)              | 0     | 162  | 0      | 0     | 86   | 0    | 0                         | 4     | 0    | 0    | 76   | 0    |
| Lane Group Flow (vph)             | 304   | 42   | 0      | 100   | 41   | 0    | 284                       | 2262  | 0    | 119  | 1064 | 0    |
| Confl. Peds. (#/hr)               | 1     |      |        |       |      |      | 1                         | 3     |      | 1    | 1    | 3    |
| Confl. Bikes (#/hr)               |       |      |        |       |      |      | 1                         |       |      |      |      | 2    |
| Heavy Vehicles (%)                | 0%    | 0%   | 0%     | 2%    | 0%   | 0%   | 6%                        | 2%    | 0%   | 4%   | 2%   | 20%  |
| Turn Type                         | pm+pt | NA   |        | pm+pt | NA   |      | Prot                      | NA    |      | Prot | Prot |      |
| Protected Phases                  | 7     | 4    |        | 3     | 8    |      | 5                         | 2     |      | 1    | 6    |      |
| Permitted Phases                  | 4     |      |        | 8     |      |      |                           |       |      |      |      |      |
| Actuated Green, G (s)             | 29.9  | 19.4 |        | 28.1  | 18.5 |      | 12.5                      | 62.5  |      | 13.0 | 62.5 |      |
| Effective Green, g (s)            | 29.9  | 19.4 |        | 28.1  | 18.5 |      | 12.5                      | 62.5  |      | 13.0 | 62.5 |      |
| Actuated g/C Ratio                | 0.23  | 0.15 |        | 0.22  | 0.14 |      | 0.10                      | 0.48  |      | 0.10 | 0.48 |      |
| Clearance Time (s)                | 6.5   | 6.5  |        | 6.5   | 6.5  |      | 7.5                       | 5.5   |      | 7.0  | 5.5  |      |
| Vehicle Extension (s)             | 1.0   | 3.0  |        | 3.0   | 3.0  |      | 3.0                       | 3.0   |      | 2.0  | 2.0  |      |
| Lane Grp Cap (vph)                | 308   | 243  |        | 236   | 235  |      | 317                       | 2429  |      | 173  | 1912 |      |
| v/s Ratio Prot                    | c0.08 | 0.03 |        | 0.03  | 0.02 |      | c0.09                     | c0.45 |      | 0.07 | 0.27 |      |
| v/s Ratio Perm                    | c0.15 |      |        | 0.06  |      |      |                           |       |      |      |      |      |
| v/c Ratio                         | 0.99  | 0.17 |        | 0.42  | 0.18 |      | 0.90                      | 0.93  |      | 0.69 | 0.56 |      |
| Uniform Delay, d1                 | 48.7  | 48.3 |        | 42.5  | 49.0 |      | 58.1                      | 31.7  |      | 56.5 | 23.9 |      |
| Progression Factor                | 1.00  | 1.00 |        | 1.00  | 1.00 |      | 1.00                      | 1.00  |      | 1.00 | 1.00 |      |
| Incremental Delay, d2             | 48.1  | 1.5  |        | 1.2   | 1.6  |      | 25.9                      | 8.0   |      | 20.1 | 1.2  |      |
| Delay (s)                         | 96.9  | 49.8 |        | 43.7  | 50.7 |      | 84.0                      | 39.7  |      | 76.6 | 25.1 |      |
| Level of Service                  | F     | D    |        | D     | D    |      | F                         | D     |      | E    | C    |      |
| Approach Delay (s)                |       | 78.0 |        |       | 47.6 |      |                           | 44.7  |      |      |      |      |
| Approach LOS                      |       | E    |        |       | D    |      |                           | D     |      |      |      |      |
| <b>Intersection Summary</b>       |       |      |        |       |      |      |                           |       |      |      |      |      |
| HCM 2000 Control Delay            |       |      | 44.5   |       |      |      | HCM 2000 Level of Service |       |      |      | D    |      |
| HCM 2000 Volume to Capacity ratio |       |      | 0.95   |       |      |      |                           |       |      |      |      |      |
| Actuated Cycle Length (s)         |       |      | 130.0  |       |      |      | Sum of lost time (s)      |       |      | 26.0 |      |      |
| Intersection Capacity Utilization |       |      | 104.3% |       |      |      | ICU Level of Service      |       |      | G    |      |      |
| Analysis Period (min)             |       |      | 15     |       |      |      |                           |       |      |      |      |      |
| c Critical Lane Group             |       |      |        |       |      |      |                           |       |      |      |      |      |



| Lane Group              | WBL  | WBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 533  | 1653 | 697  | 307  |
| v/c Ratio               | 0.51 | 0.77 | 0.59 | 0.20 |
| Control Delay           | 1.2  | 8.1  | 51.9 | 0.3  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 1.2  | 8.1  | 51.9 | 0.3  |
| Queue Length 50th (ft)  | 0    | 719  | 163  | 0    |
| Queue Length 95th (ft)  | m0   | m684 | 191  | 0    |
| Internal Link Dist (ft) |      | 23   | 453  |      |
| Turn Bay Length (ft)    |      |      |      |      |
| Base Capacity (vph)     | 1048 | 2144 | 1187 | 1564 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.51 | 0.77 | 0.59 | 0.20 |

**Intersection Summary**

m Volume for 95th percentile queue is metered by upstream signal.

7: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | EBL  | EBT  | EBR   | WBL     | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR   |  |
|-----------------------------------|------|------|-------|---------|---------------------------|------|------|------|------|------|-------|-------|--|
| Lane Configurations               |      |      |       | ↖       | ↕                         |      |      |      |      |      | ↑↑↑   | ↗     |  |
| Traffic Volume (vph)              | 0    | 0    | 0     | 497     | 1482                      | 0    | 0    | 0    | 0    | 0    | 606   | 270   |  |
| Future Volume (vph)               | 0    | 0    | 0     | 497     | 1482                      | 0    | 0    | 0    | 0    | 0    | 606   | 270   |  |
| 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   | 4.0   |  |
| Lane Util. Factor                 |      |      |       | 0.91    | 0.91                      |      |      |      |      |      | 0.86  | 1.00  |  |
| Frbp, ped/bikes                   |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.99  |  |
| Flpb, ped/bikes                   |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Frt                               |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.85  |  |
| Flt Protected                     |      |      |       | 0.95    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (prot)                 |      |      |       | 1595    | 3383                      |      |      |      |      |      | 6166  | 1564  |  |
| Flt Permitted                     |      |      |       | 0.95    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (perm)                 |      |      |       | 1595    | 3383                      |      |      |      |      |      | 6166  | 1564  |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92  | 0.84    | 0.93                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.87  | 0.88  |  |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 592     | 1594                      | 0    | 0    | 0    | 0    | 0    | 697   | 307   |  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 54      | 38                        | 0    | 0    | 0    | 0    | 0    | 0     | 0     |  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 479     | 1615                      | 0    | 0    | 0    | 0    | 0    | 697   | 307   |  |
| Confl. Peds. (#/hr)               |      |      |       |         |                           |      |      |      |      |      |       | 1     |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%    | 3%      | 2%                        | 2%   | 2%   | 2%   | 2%   | 2%   | 6%    | 2%    |  |
| Turn Type                         |      |      |       | custom  | NA                        |      |      |      |      |      | NA    | Free  |  |
| Protected Phases                  |      |      |       | 1 2 4 8 | 1 2 4 8                   |      |      |      |      |      | 5 6 7 |       |  |
| Permitted Phases                  |      |      |       | 3       | 3                         |      |      |      |      |      |       | Free  |  |
| Actuated Green, G (s)             |      |      |       | 86.0    | 86.0                      |      |      |      |      |      | 33.0  | 135.0 |  |
| Effective Green, g (s)            |      |      |       | 86.0    | 86.0                      |      |      |      |      |      | 33.0  | 135.0 |  |
| Actuated g/C Ratio                |      |      |       | 0.64    | 0.64                      |      |      |      |      |      | 0.24  | 1.00  |  |
| Clearance Time (s)                |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| Vehicle Extension (s)             |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| Lane Grp Cap (vph)                |      |      |       | 1086    | 2305                      |      |      |      |      |      | 1507  | 1564  |  |
| v/s Ratio Prot                    |      |      |       | 0.27    | c0.44                     |      |      |      |      |      | c0.11 |       |  |
| v/s Ratio Perm                    |      |      |       | 0.03    | 0.04                      |      |      |      |      |      |       | 0.20  |  |
| v/c Ratio                         |      |      |       | 0.44    | 0.70                      |      |      |      |      |      | 0.46  | 0.20  |  |
| Uniform Delay, d1                 |      |      |       | 12.4    | 16.1                      |      |      |      |      |      | 43.4  | 0.0   |  |
| Progression Factor                |      |      |       | 0.08    | 0.59                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Incremental Delay, d2             |      |      |       | 0.0     | 0.3                       |      |      |      |      |      | 1.0   | 0.3   |  |
| Delay (s)                         |      |      |       | 1.0     | 9.7                       |      |      |      |      |      | 44.5  | 0.3   |  |
| Level of Service                  |      |      |       | A       | A                         |      |      |      |      |      | D     | A     |  |
| Approach Delay (s)                |      | 0.0  |       |         | 7.6                       |      |      | 0.0  |      |      | 31.0  |       |  |
| Approach LOS                      |      | A    |       |         | A                         |      |      | A    |      |      | C     |       |  |
| <b>Intersection Summary</b>       |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| HCM 2000 Control Delay            |      |      | 14.9  |         | HCM 2000 Level of Service |      |      |      |      |      | B     |       |  |
| HCM 2000 Volume to Capacity ratio |      |      | 0.84  |         |                           |      |      |      |      |      |       |       |  |
| Actuated Cycle Length (s)         |      |      | 135.0 |         | Sum of lost time (s)      |      |      |      |      | 40.0 |       |       |  |
| Intersection Capacity Utilization |      |      | 70.9% |         | ICU Level of Service      |      |      |      |      | C    |       |       |  |
| Analysis Period (min)             |      |      | 15    |         |                           |      |      |      |      |      |       |       |  |
| c Critical Lane Group             |      |      |       |         |                           |      |      |      |      |      |       |       |  |















| Lane Group              | WBT   | WBR   | NBL  | NBT  |
|-------------------------|-------|-------|------|------|
| Lane Group Flow (vph)   | 1723  | 659   | 303  | 941  |
| v/c Ratio               | 1.09  | 1.09  | 0.36 | 0.38 |
| Control Delay           | 92.4  | 89.6  | 2.4  | 3.5  |
| Queue Delay             | 2.9   | 0.0   | 0.4  | 0.2  |
| Total Delay             | 95.4  | 89.6  | 2.8  | 3.6  |
| Queue Length 50th (ft)  | ~613  | ~509  | 6    | 33   |
| Queue Length 95th (ft)  | m#670 | m#550 | m9   | 12   |
| Internal Link Dist (ft) | 133   |       |      | 295  |
| Turn Bay Length (ft)    |       |       |      |      |
| Base Capacity (vph)     | 1582  | 607   | 833  | 2465 |
| Starvation Cap Reductn  | 0     | 0     | 205  | 629  |
| Spillback Cap Reductn   | 10    | 0     | 17   | 25   |
| Storage Cap Reductn     | 0     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.10  | 1.09  | 0.48 | 0.51 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |  |
| Lane Configurations               |   |   |   |   | ↑↑↑   | ↑   | ↑  | ↑↑↑   |   |   |   |   |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 0   | 1637  | 521   | 350  | 647   | 0   | 0   | 0   | 0   |  |
| Future Volume (vph)               | 0   | 0   | 0   | 0   | 1637  | 521   | 350  | 647   | 0   | 0   | 0   | 0   |  |
| 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   |   |   |   |   |  |
| Lane Util. Factor                 |   |   |   |   | 0.91  | 1.00  | 0.86   | 0.86  |   |   |   |   |  |
| Frbp, ped/bikes                   |   |   |   |   | 1.00  | 0.99  | 1.00   | 1.00  |   |   |   |   |  |
| Flpb, ped/bikes                   |   |   |   |   | 1.00  | 1.00  | 1.00   | 1.00  |   |   |   |   |  |
| Frt                               |   |   |   |   | 1.00  | 0.85  | 1.00   | 1.00  |   |   |   |   |  |
| Flt Protected                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (prot)                 |   |   |   |   | 5085  | 1504  | 1552   | 4792  |   |   |   |   |  |
| Flt Permitted                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (perm)                 |   |   |   |   | 5085  | 1504  | 1552   | 4792  |   |   |   |   |  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.92  | 0.95  | 0.79  | 0.89   | 0.76  | 0.92  | 0.92  | 0.92  | 0.92  |  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 0   | 1723  | 659   | 393  | 851   | 0   | 0   | 0   | 0   |  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 138   | 51   | 51  | 0   | 0   | 0   | 0   |  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 0   | 1723  | 521   | 252  | 890   | 0   | 0   | 0   | 0   |  |
| Confl. Peds. (#/hr)               |   |   |   |   |   | 1   |  |   |   |   |   |   |  |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 2%  | 2%  | 6%  | 0%   | 2%  | 2%  | 2%  | 2%  | 2%  |  |
| Turn Type                         |   |   |   |   | NA  | Perm  | custom   | NA  |   |   |   |   |  |
| Protected Phases                  |   |   |   |   | 1 7 8   |   | 2 3 4 5  | 2 3 4 5   |   |   |   |   |  |
| Permitted Phases                  |   |   |   |   |   | 1 7 8   | 6  | 6   |   |   |   |   |  |
| Actuated Green, G (s)             |   |   |   |   | 45.0  | 45.0  | 72.0   | 72.0  |   |   |   |   |  |
| Effective Green, g (s)            |   |   |   |   | 43.0  | 43.0  | 70.0   | 70.0  |   |   |   |   |  |
| Actuated g/C Ratio                |   |   |   |   | 0.32  | 0.32  | 0.52   | 0.52  |   |   |   |   |  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Lane Grp Cap (vph)                |   |   |   |   | 1619  | 479   | 873  | 2697  |   |   |   |   |  |
| v/s Ratio Prot                    |   |   |   |   | 0.34  |   | 0.12   | c0.13   |   |   |   |   |  |
| v/s Ratio Perm                    |   |   |   |   |   | c0.35   | 0.04   | 0.05  |   |   |   |   |  |
| v/c Ratio                         |   |   |   |   | 1.06  | 1.09  | 0.29   | 0.33  |   |   |   |   |  |
| Uniform Delay, d1                 |   |   |   |   | 46.0  | 46.0  | 18.4   | 18.9  |   |   |   |   |  |
| Progression Factor                |   |   |   |   | 0.97  | 0.97  | 0.17   | 0.24  |   |   |   |   |  |
| Incremental Delay, d2             |   |   |   |   | 40.4  | 64.7  | 0.0  | 0.0   |   |   |   |   |  |
| Delay (s)                         |   |   |   |   | 85.1  | 109.1   | 3.1  | 4.5   |   |   |   |   |  |
| Level of Service                  |   |   |   |   | F   | F   | A  | A   |   |   |   |   |  |
| Approach Delay (s)                |   | 0.0   |   |   | 91.8  |   |  | 4.1   |   |   | 0.0   |   |  |
| Approach LOS                      |   | A   |   |   | F   |   |  | A   |   |   | A   |   |  |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |  |
| HCM 2000 Control Delay            |   |   | 61.7  |   | HCM 2000 Level of Service   |   |  |   | E   |   |   |   |  |
| HCM 2000 Volume to Capacity ratio |   |   | 0.76  |   |   |   |  |   |   |   |   |   |  |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |  |   | 40.0  |   |   |   |  |
| Intersection Capacity Utilization |   |   | 68.2%   |   | ICU Level of Service  |   |  |   | C   |   |   |   |  |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |  |

c Critical Lane Group





| Lane Group              | EBT  | SBL  | SBT  |
|-------------------------|------|------|------|
| Lane Group Flow (vph)   | 873  | 320  | 999  |
| v/c Ratio               | 0.88 | 0.34 | 0.34 |
| Control Delay           | 63.2 | 3.9  | 3.7  |
| Queue Delay             | 0.2  | 0.6  | 0.2  |
| Total Delay             | 63.4 | 4.5  | 3.9  |
| Queue Length 50th (ft)  | 274  | 0    | 4    |
| Queue Length 95th (ft)  | #335 | 16   | 23   |
| Internal Link Dist (ft) | 69   |      | 291  |
| Turn Bay Length (ft)    |      |      |      |
| Base Capacity (vph)     | 997  | 936  | 2981 |
| Starvation Cap Reductn  | 0    | 310  | 1115 |
| Spillback Cap Reductn   | 5    | 16   | 26   |
| Storage Cap Reductn     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.88 | 0.51 | 0.54 |

**Intersection Summary**

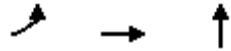
# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

9: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL     | SBT     | SBR  |  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|------|------|------|---------|---------|------|--|
| Lane Configurations               |      | ↑↑↑   |       |      |                           |      |      |      |      | ↘       | ↑↑↑     |      |  |
| Traffic Volume (vph)              | 0    | 794   | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 320     | 827     | 0    |  |
| Future Volume (vph)               | 0    | 794   | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 320     | 827     | 0    |  |
| 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     |      |  |
| Lane Util. Factor                 |      | 0.91  |       |      |                           |      |      |      |      | 0.86    | 0.86    |      |  |
| Frbp, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flpb, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Frt                               |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flt Protected                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 1.00    |      |  |
| Satd. Flow (prot)                 |      | 4988  |       |      |                           |      |      |      |      | 1437    | 4781    |      |  |
| Flt Permitted                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 1.00    |      |  |
| Satd. Flow (perm)                 |      | 4988  |       |      |                           |      |      |      |      | 1437    | 4781    |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.91  | 0.88  | 0.92 | 0.92                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.87    | 0.87    | 0.92 |  |
| Adj. Flow (vph)                   | 0    | 873   | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 368     | 951     | 0    |  |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 52      | 40      | 0    |  |
| Lane Group Flow (vph)             | 0    | 873   | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 268     | 959     | 0    |  |
| Confl. Bikes (#/hr)               |      |       | 1     |      |                           |      |      |      |      |         |         |      |  |
| Heavy Vehicles (%)                | 2%   | 4%    | 2%    | 2%   | 2%                        | 2%   | 2%   | 2%   | 2%   | 8%      | 2%      | 2%   |  |
| Turn Type                         |      | NA    |       |      |                           |      |      |      |      | custom  | NA      |      |  |
| Protected Phases                  |      | 4 5   |       |      |                           |      |      |      |      | 1 2 6 8 | 1 2 6 8 |      |  |
| Permitted Phases                  |      |       |       |      |                           |      |      |      |      | 7       | 7       |      |  |
| Actuated Green, G (s)             |      | 27.0  |       |      |                           |      |      |      |      | 84.0    | 84.0    |      |  |
| Effective Green, g (s)            |      | 27.0  |       |      |                           |      |      |      |      | 84.0    | 84.0    |      |  |
| Actuated g/C Ratio                |      | 0.20  |       |      |                           |      |      |      |      | 0.62    | 0.62    |      |  |
| Clearance Time (s)                |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Vehicle Extension (s)             |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Lane Grp Cap (vph)                |      | 997   |       |      |                           |      |      |      |      | 958     | 3187    |      |  |
| v/s Ratio Prot                    |      | c0.18 |       |      |                           |      |      |      |      | 0.17    | c0.19   |      |  |
| v/s Ratio Perm                    |      |       |       |      |                           |      |      |      |      | 0.01    | 0.02    |      |  |
| v/c Ratio                         |      | 0.88  |       |      |                           |      |      |      |      | 0.28    | 0.30    |      |  |
| Uniform Delay, d1                 |      | 52.4  |       |      |                           |      |      |      |      | 11.7    | 11.9    |      |  |
| Progression Factor                |      | 1.00  |       |      |                           |      |      |      |      | 0.63    | 0.43    |      |  |
| Incremental Delay, d2             |      | 8.5   |       |      |                           |      |      |      |      | 0.0     | 0.0     |      |  |
| Delay (s)                         |      | 60.8  |       |      |                           |      |      |      |      | 7.4     | 5.1     |      |  |
| Level of Service                  |      | E     |       |      |                           |      |      |      |      | A       | A       |      |  |
| Approach Delay (s)                |      | 60.8  |       |      | 0.0                       |      |      | 0.0  |      |         | 5.7     |      |  |
| Approach LOS                      |      | E     |       |      | A                         |      |      | A    |      |         | A       |      |  |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| HCM 2000 Control Delay            |      |       | 27.6  |      | HCM 2000 Level of Service |      |      |      |      |         | C       |      |  |
| HCM 2000 Volume to Capacity ratio |      |       | 0.53  |      |                           |      |      |      |      |         |         |      |  |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      |      |      |      |      | 40.0    |         |      |  |
| Intersection Capacity Utilization |      |       | 55.7% |      | ICU Level of Service      |      |      |      |      | B       |         |      |  |
| Analysis Period (min)             |      |       | 15    |      |                           |      |      |      |      |         |         |      |  |
| c Critical Lane Group             |      |       |       |      |                           |      |      |      |      |         |         |      |  |





















| Lane Group              | EBL  | EBT  | NBT  |
|-------------------------|------|------|------|
| Lane Group Flow (vph)   | 428  | 902  | 1210 |
| v/c Ratio               | 0.44 | 0.47 | 0.77 |
| Control Delay           | 2.3  | 3.5  | 49.1 |
| Queue Delay             | 3.5  | 3.0  | 0.0  |
| Total Delay             | 5.8  | 6.5  | 49.1 |
| Queue Length 50th (ft)  | 6    | 24   | 276  |
| Queue Length 95th (ft)  | 3    | m31  | 320  |
| Internal Link Dist (ft) |      | 38   | 673  |
| Turn Bay Length (ft)    |      |      |      |
| Base Capacity (vph)     | 967  | 1903 | 1574 |
| Starvation Cap Reductn  | 434  | 864  | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.80 | 0.87 | 0.77 |

**Intersection Summary**

m Volume for 95th percentile queue is metered by upstream signal.

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

|                                   |  |   |  |  |  |  |  |    |  |  |  |  |
|-----------------------------------|---|--|---|---|---|---|--|---|---|---|---|---|
| Movement                          | EBL   | EBT  | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |  | <br> |   |   |   |   |  | <br><br> |   |   |   |   |
| Traffic Volume (vph)              | 330   | 773  | 0   | 0   | 0   | 0   | 0  | 839   | 248   | 0   | 0   | 0   |
| Future Volume (vph)               | 330   | 773  | 0   | 0   | 0   | 0   | 0  | 839   | 248   | 0   | 0   | 0   |
| 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   |   |   |   |   |
| Lane Util. Factor                 | 0.91  | 0.91   |   |   |   |   |  | 0.86  |   |   |   |   |
| Frt                               | 1.00  | 1.00   |   |   |   |   |  | 0.96  |   |   |   |   |
| Flt Protected                     | 0.95  | 1.00   |   |   |   |   |  | 1.00  |   |   |   |   |
| Satd. Flow (prot)                 | 1610  | 3258   |   |   |   |   |  | 6273  |   |   |   |   |
| Flt Permitted                     | 0.95  | 1.00   |   |   |   |   |  | 1.00  |   |   |   |   |
| Satd. Flow (perm)                 | 1610  | 3258   |   |   |   |   |  | 6273  |   |   |   |   |
| Peak-hour factor, PHF             | 0.64  | 0.95   | 0.92  | 0.92  | 0.92  | 0.92  | 0.92   | 0.91  | 0.86  | 0.92  | 0.92  | 0.92  |
| Adj. Flow (vph)                   | 516   | 814  | 0   | 0   | 0   | 0   | 0  | 922   | 288   | 0   | 0   | 0   |
| RTOR Reduction (vph)              | 48  | 44   | 0   | 0   | 0   | 0   | 0  | 38  | 0   | 0   | 0   | 0   |
| Lane Group Flow (vph)             | 380   | 858  | 0   | 0   | 0   | 0   | 0  | 1172  | 0   | 0   | 0   | 0   |
| Heavy Vehicles (%)                | 2%  | 6%   | 2%  | 2%  | 2%  | 2%  | 2%   | 0%  | 2%  | 2%  | 2%  | 2%  |
| Turn Type                         | custom  | NA   |   |   |   |   |  | NA  |   |   |   |   |
| Protected Phases                  | 4 5 6 8   | 4 5 6 8  |   |   |   |   |  | 1 2 3   |   |   |   |   |
| Permitted Phases                  | 7   | 7  |   |   |   |   |  |   |   |   |   |   |
| Actuated Green, G (s)             | 78.0  | 78.0   |   |   |   |   |  | 41.0  |   |   |   |   |
| Effective Green, g (s)            | 78.0  | 78.0   |   |   |   |   |  | 41.0  |   |   |   |   |
| Actuated g/C Ratio                | 0.58  | 0.58   |   |   |   |   |  | 0.30  |   |   |   |   |
| Clearance Time (s)                |   |  |   |   |   |   |  |   |   |   |   |   |
| Vehicle Extension (s)             |   |  |   |   |   |   |  |   |   |   |   |   |
| Lane Grp Cap (vph)                | 1001  | 2027   |   |   |   |   |  | 1905  |   |   |   |   |
| v/s Ratio Prot                    | 0.22  | c0.24  |   |   |   |   |  | c0.19   |   |   |   |   |
| v/s Ratio Perm                    | 0.02  | 0.02   |   |   |   |   |  |   |   |   |   |   |
| v/c Ratio                         | 0.38  | 0.42   |   |   |   |   |  | 0.62  |   |   |   |   |
| Uniform Delay, d1                 | 15.4  | 15.9   |   |   |   |   |  | 40.2  |   |   |   |   |
| Progression Factor                | 0.14  | 0.26   |   |   |   |   |  | 1.00  |   |   |   |   |
| Incremental Delay, d2             | 0.1   | 0.0  |   |   |   |   |  | 1.5   |   |   |   |   |
| Delay (s)                         | 2.3   | 4.3  |   |   |   |   |  | 41.7  |   |   |   |   |
| Level of Service                  | A   | A  |   |   |   |   |  | D   |   |   |   |   |
| Approach Delay (s)                |   | 3.6  |   |   | 0.0   |   |  | 41.7  |   |   | 0.0   |   |
| Approach LOS                      |   | A  |   |   | A   |   |  | D   |   |   | A   |   |
| <b>Intersection Summary</b>       |   |  |   |   |   |   |  |   |   |   |   |   |
| HCM 2000 Control Delay            |   |  | 21.8  |   |   |   |  | HCM 2000 Level of Service   |   | C   |   |   |
| HCM 2000 Volume to Capacity ratio |   |  | 0.64  |   |   |   |  |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |  | 135.0   |   |   |   |  | Sum of lost time (s)  |   | 40.0  |   |   |
| Intersection Capacity Utilization |   |  | 57.1%   |   |   |   |  | ICU Level of Service  |   | B   |   |   |
| Analysis Period (min)             |   |  | 15  |   |   |   |  |   |   |   |   |   |
| c Critical Lane Group             |   |  |   |   |   |   |  |   |   |   |   |   |



| Lane Group              | WBL  | WBT  | NBL  | NBT  | SBT  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 554  | 821  | 176  | 262  | 25   |
| v/c Ratio               | 0.83 | 0.81 | 0.23 | 0.16 | 0.02 |
| Control Delay           | 39.0 | 32.1 | 2.8  | 1.2  | 10.9 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 39.0 | 32.1 | 2.8  | 1.2  | 10.9 |
| Queue Length 50th (ft)  | 112  | 109  | 0    | 0    | 1    |
| Queue Length 95th (ft)  | #198 | #155 | 0    | 0    | 6    |
| Internal Link Dist (ft) |      | 364  |      | 236  | 206  |
| Turn Bay Length (ft)    | 300  |      |      |      |      |
| Base Capacity (vph)     | 671  | 1009 | 801  | 1678 | 1445 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.83 | 0.81 | 0.22 | 0.16 | 0.02 |

**Intersection Summary**

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

11: West Gate Blvd & US 290 WBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT                       | WBR  | NBL     | NBT     | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|------|------|-------|-------|---------------------------|------|---------|---------|------|------|------|------|--|
| Lane Configurations               |      |      |       | ↔↔    | ↔↔↔                       |      | ↔       | ↔↔      |      |      | ↔↔↔  |      |  |
| Traffic Volume (vph)              | 0    | 0    | 0     | 521   | 569                       | 79   | 324     | 76      | 0    | 0    | 11   | 9    |  |
| Future Volume (vph)               | 0    | 0    | 0     | 521   | 569                       | 79   | 324     | 76      | 0    | 0    | 11   | 9    |  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900                      | 1900 | 1900    | 1900    | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)               |      |      |       | 5.5   | 5.5                       |      | 6.0     | 6.0     |      |      | 6.0  |      |  |
| Lane Util. Factor                 |      |      |       | 0.97  | 0.91                      |      | 0.91    | 0.91    |      |      | 0.91 |      |  |
| Frbp, ped/bikes                   |      |      |       | 1.00  | 1.00                      |      | 1.00    | 1.00    |      |      | 1.00 |      |  |
| Flpb, ped/bikes                   |      |      |       | 1.00  | 1.00                      |      | 1.00    | 1.00    |      |      | 1.00 |      |  |
| Frt                               |      |      |       | 1.00  | 0.97                      |      | 1.00    | 1.00    |      |      | 0.93 |      |  |
| Flt Protected                     |      |      |       | 0.95  | 1.00                      |      | 0.95    | 0.97    |      |      | 1.00 |      |  |
| Satd. Flow (prot)                 |      |      |       | 3433  | 4900                      |      | 1595    | 3280    |      |      | 4450 |      |  |
| Flt Permitted                     |      |      |       | 0.95  | 1.00                      |      | 0.74    | 0.77    |      |      | 1.00 |      |  |
| Satd. Flow (perm)                 |      |      |       | 3433  | 4900                      |      | 1241    | 2595    |      |      | 4450 |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92  | 0.94  | 0.84                      | 0.55 | 0.92    | 0.88    | 0.92 | 0.92 | 0.88 | 0.75 |  |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 554   | 677                       | 144  | 352     | 86      | 0    | 0    | 12   | 12   |  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0     | 50                        | 0    | 0       | 0       | 0    | 0    | 8    | 0    |  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 554   | 771                       | 0    | 176     | 262     | 0    | 0    | 17   | 0    |  |
| Confl. Peds. (#/hr)               |      |      |       |       |                           | 1    |         |         |      |      |      |      |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%    | 2%    | 3%                        | 2%   | 3%      | 0%      | 2%   | 2%   | 0%   | 17%  |  |
| Turn Type                         |      |      |       | Perm  | NA                        |      | Perm    | NA      |      |      | NA   |      |  |
| Protected Phases                  |      |      |       |       | 4 5                       |      |         | 1 2 6 7 |      |      | 1 2  |      |  |
| Permitted Phases                  |      |      |       | 4 5   |                           |      | 1 2 6 7 |         |      |      |      |      |  |
| Actuated Green, G (s)             |      |      |       | 12.2  | 12.2                      |      | 41.3    | 41.3    |      |      | 20.3 |      |  |
| Effective Green, g (s)            |      |      |       | 12.2  | 12.2                      |      | 30.3    | 30.3    |      |      | 20.3 |      |  |
| Actuated g/C Ratio                |      |      |       | 0.19  | 0.19                      |      | 0.47    | 0.47    |      |      | 0.31 |      |  |
| Clearance Time (s)                |      |      |       |       |                           |      |         |         |      |      |      |      |  |
| Vehicle Extension (s)             |      |      |       |       |                           |      |         |         |      |      |      |      |  |
| Lane Grp Cap (vph)                |      |      |       | 644   | 919                       |      | 578     | 1209    |      |      | 1389 |      |  |
| v/s Ratio Prot                    |      |      |       |       | 0.16                      |      |         |         |      |      | 0.00 |      |  |
| v/s Ratio Perm                    |      |      |       | c0.16 |                           |      | c0.14   | 0.10    |      |      |      |      |  |
| v/c Ratio                         |      |      |       | 0.86  | 0.84                      |      | 0.30    | 0.22    |      |      | 0.01 |      |  |
| Uniform Delay, d1                 |      |      |       | 25.6  | 25.5                      |      | 10.8    | 10.3    |      |      | 15.4 |      |  |
| Progression Factor                |      |      |       | 1.00  | 1.00                      |      | 0.43    | 0.21    |      |      | 1.00 |      |  |
| Incremental Delay, d2             |      |      |       | 14.1  | 9.0                       |      | 0.1     | 0.0     |      |      | 0.0  |      |  |
| Delay (s)                         |      |      |       | 39.6  | 34.5                      |      | 4.8     | 2.2     |      |      | 15.4 |      |  |
| Level of Service                  |      |      |       | D     | C                         |      | A       | A       |      |      | B    |      |  |
| Approach Delay (s)                |      | 0.0  |       |       | 36.6                      |      |         | 3.2     |      |      | 15.4 |      |  |
| Approach LOS                      |      | A    |       |       | D                         |      |         | A       |      |      | B    |      |  |
| <b>Intersection Summary</b>       |      |      |       |       |                           |      |         |         |      |      |      |      |  |
| HCM 2000 Control Delay            |      |      | 28.3  |       | HCM 2000 Level of Service |      |         |         |      |      | C    |      |  |
| HCM 2000 Volume to Capacity ratio |      |      | 0.64  |       |                           |      |         |         |      |      |      |      |  |
| Actuated Cycle Length (s)         |      |      | 65.0  |       | Sum of lost time (s)      |      |         |         |      |      | 34.0 |      |  |
| Intersection Capacity Utilization |      |      | 64.9% |       | ICU Level of Service      |      |         |         |      |      | C    |      |  |
| Analysis Period (min)             |      |      | 15    |       |                           |      |         |         |      |      |      |      |  |
| c Critical Lane Group             |      |      |       |       |                           |      |         |         |      |      |      |      |  |



| Lane Group              | EBL  | EBT  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 56   | 704  | 381  | 673  | 57   | 523  |
| v/c Ratio               | 0.14 | 0.90 | 0.51 | 0.60 | 0.11 | 0.24 |
| Control Delay           | 21.9 | 40.5 | 25.2 | 4.7  | 36.6 | 0.6  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 21.9 | 40.5 | 25.2 | 4.7  | 36.6 | 0.6  |
| Queue Length 50th (ft)  | 18   | 131  | 70   | 0    | 25   | 1    |
| Queue Length 95th (ft)  | 36   | #224 | 109  | 42   | m31  | m1   |
| Internal Link Dist (ft) |      | 52   | 369  |      |      | 236  |
| Turn Bay Length (ft)    |      |      |      | 90   |      |      |
| Base Capacity (vph)     | 388  | 778  | 754  | 1120 | 494  | 2097 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.14 | 0.90 | 0.51 | 0.60 | 0.12 | 0.25 |

**Intersection Summary**

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

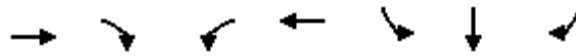
12: West Gate Blvd & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

| Movement                          | EBL   | EBT   | EBR   | WBL  | WBT                       | WBR  | NBL  | NBT   | NBR  | SBL  | SBT     | SBR  |  |
|-----------------------------------|-------|-------|-------|------|---------------------------|------|------|-------|------|------|---------|------|--|
| Lane Configurations               |       |       |       |      |                           |      |      |       |      |      |         |      |  |
| Traffic Volume (vph)              | 40    | 467   | 145   | 0    | 0                         | 0    | 0    | 362   | 612  | 39   | 502     | 0    |  |
| Future Volume (vph)               | 40    | 467   | 145   | 0    | 0                         | 0    | 0    | 362   | 612  | 39   | 502     | 0    |  |
| 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  | 5.5  | 5.5     |      |  |
| Lane Util. Factor                 | 1.00  | 0.95  |       |      |                           |      |      | 0.95  | 0.88 | 1.00 | 0.95    |      |  |
| Frbp, ped/bikes                   | 1.00  | 1.00  |       |      |                           |      |      | 1.00  | 0.98 | 1.00 | 1.00    |      |  |
| Flpb, ped/bikes                   | 1.00  | 1.00  |       |      |                           |      |      | 1.00  | 1.00 | 1.00 | 1.00    |      |  |
| Frt                               | 1.00  | 0.96  |       |      |                           |      |      | 1.00  | 0.85 | 1.00 | 1.00    |      |  |
| Flt Protected                     | 0.95  | 1.00  |       |      |                           |      |      | 1.00  | 1.00 | 0.95 | 1.00    |      |  |
| Satd. Flow (prot)                 | 1805  | 3373  |       |      |                           |      |      | 3505  | 2752 | 1736 | 3539    |      |  |
| Flt Permitted                     | 0.95  | 1.00  |       |      |                           |      |      | 1.00  | 1.00 | 0.95 | 1.00    |      |  |
| Satd. Flow (perm)                 | 1805  | 3373  |       |      |                           |      |      | 3505  | 2752 | 1736 | 3539    |      |  |
| Peak-hour factor, PHF             | 0.72  | 0.89  | 0.81  | 0.92 | 0.92                      | 0.92 | 0.92 | 0.95  | 0.91 | 0.69 | 0.96    | 0.92 |  |
| Adj. Flow (vph)                   | 56    | 525   | 179   | 0    | 0                         | 0    | 0    | 381   | 673  | 57   | 523     | 0    |  |
| RTOR Reduction (vph)              | 0     | 57    | 0     | 0    | 0                         | 0    | 0    | 0     | 523  | 0    | 0       | 0    |  |
| Lane Group Flow (vph)             | 56    | 647   | 0     | 0    | 0                         | 0    | 0    | 381   | 150  | 57   | 523     | 0    |  |
| Confl. Peds. (#/hr)               |       |       | 2     |      |                           |      |      |       | 1    | 1    |         |      |  |
| Heavy Vehicles (%)                | 0%    | 2%    | 4%    | 2%   | 2%                        | 2%   | 2%   | 3%    | 1%   | 4%   | 2%      | 2%   |  |
| Turn Type                         | Split | NA    |       |      |                           |      |      | NA    | Perm | Prot | NA      |      |  |
| Protected Phases                  | 1 7   | 1 7   |       |      |                           |      |      | 5 6   |      | 2 4  | 2 4 5 6 |      |  |
| Permitted Phases                  |       |       |       |      |                           |      |      |       | 5 6  |      |         |      |  |
| Actuated Green, G (s)             | 14.0  | 14.0  |       |      |                           |      |      | 14.5  | 14.5 | 19.5 | 39.5    |      |  |
| Effective Green, g (s)            | 8.5   | 8.5   |       |      |                           |      |      | 14.5  | 14.5 | 19.5 | 33.5    |      |  |
| Actuated g/C Ratio                | 0.13  | 0.13  |       |      |                           |      |      | 0.22  | 0.22 | 0.30 | 0.52    |      |  |
| Clearance Time (s)                |       |       |       |      |                           |      |      |       |      |      |         |      |  |
| Vehicle Extension (s)             |       |       |       |      |                           |      |      |       |      |      |         |      |  |
| Lane Grp Cap (vph)                | 236   | 441   |       |      |                           |      |      | 781   | 613  | 520  | 1823    |      |  |
| v/s Ratio Prot                    | 0.03  | c0.19 |       |      |                           |      |      | c0.11 |      | 0.03 | c0.15   |      |  |
| v/s Ratio Perm                    |       |       |       |      |                           |      |      |       | 0.05 |      |         |      |  |
| v/c Ratio                         | 0.24  | 1.47  |       |      |                           |      |      | 0.49  | 0.24 | 0.11 | 0.29    |      |  |
| Uniform Delay, d1                 | 25.3  | 28.2  |       |      |                           |      |      | 22.0  | 20.8 | 16.5 | 9.0     |      |  |
| Progression Factor                | 1.00  | 1.00  |       |      |                           |      |      | 1.00  | 1.00 | 2.16 | 0.07    |      |  |
| Incremental Delay, d2             | 0.2   | 222.0 |       |      |                           |      |      | 2.2   | 0.9  | 0.3  | 0.2     |      |  |
| Delay (s)                         | 25.5  | 250.2 |       |      |                           |      |      | 24.2  | 21.7 | 35.8 | 0.9     |      |  |
| Level of Service                  | C     | F     |       |      |                           |      |      | C     | C    | D    | A       |      |  |
| Approach Delay (s)                |       | 233.7 |       |      | 0.0                       |      |      | 22.6  |      |      | 4.3     |      |  |
| Approach LOS                      |       | F     |       |      | A                         |      |      | C     |      |      | A       |      |  |
| <b>Intersection Summary</b>       |       |       |       |      |                           |      |      |       |      |      |         |      |  |
| HCM 2000 Control Delay            |       |       | 85.2  |      | HCM 2000 Level of Service |      |      |       |      |      | F       |      |  |
| HCM 2000 Volume to Capacity ratio |       |       | 0.84  |      |                           |      |      |       |      |      |         |      |  |
| Actuated Cycle Length (s)         |       |       | 65.0  |      | Sum of lost time (s)      |      |      |       |      | 34.0 |         |      |  |
| Intersection Capacity Utilization |       |       | 64.9% |      | ICU Level of Service      |      |      |       |      | C    |         |      |  |
| Analysis Period (min)             |       |       | 15    |      |                           |      |      |       |      |      |         |      |  |

c Critical Lane Group





| Lane Group              | EBT  | EBR  | WBL  | WBT   | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Group Flow (vph)   | 1473 | 610  | 164  | 4219  | 130  | 136  | 535  |
| v/c Ratio               | 0.45 | 0.52 | 0.44 | 1.03  | 0.66 | 0.65 | 0.34 |
| Control Delay           | 16.2 | 6.5  | 5.4  | 46.7  | 92.9 | 91.1 | 0.6  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 29.6  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 16.2 | 6.5  | 5.4  | 76.3  | 92.9 | 91.1 | 0.6  |
| Queue Length 50th (ft)  | 303  | 107  | 46   | ~1987 | 157  | 164  | 0    |
| Queue Length 95th (ft)  | 335  | 151  | m37  | m1705 | 207  | 136  | 0    |
| Internal Link Dist (ft) | 834  |      |      | 1419  |      | 192  |      |
| Turn Bay Length (ft)    |      | 515  | 950  |       |      |      |      |
| Base Capacity (vph)     | 3242 | 1165 | 371  | 4096  | 196  | 209  | 1553 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 723   | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0     | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.45 | 0.52 | 0.44 | 1.25  | 0.66 | 0.65 | 0.34 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

13: Capital of Texas Hwy & Mopac SBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | EBL  | EBT   | EBR    | WBL   | WBT   | WBR                       | NBL  | NBT  | NBR  | SBL   | SBT  | SBR   |
|-----------------------------------|------|-------|--------|-------|-------|---------------------------|------|------|------|-------|------|-------|
| Lane Configurations               |      | ↑↑↑   | ↗      | ↖     | ↑↑↑   |                           |      |      |      | ↘     | ↙    | ↗     |
| Traffic Volume (vph)              | 0    | 1414  | 512    | 97    | 3924  | 0                         | 0    | 0    | 0    | 136   | 48   | 487   |
| Future Volume (vph)               | 0    | 1414  | 512    | 97    | 3924  | 0                         | 0    | 0    | 0    | 136   | 48   | 487   |
| Ideal Flow (vphp)                 | 1900 | 1900  | 1900   | 1900  | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  |
| Total Lost time (s)               |      | 7.0   | 7.0    | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5  | 4.0   |
| Lane Util. Factor                 |      | 0.91  | 1.00   | 1.00  | 0.91  |                           |      |      |      | 0.95  | 0.95 | 1.00  |
| Frbp, ped/bikes                   |      | 1.00  | 0.99   | 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  |
| Frt                               |      | 1.00  | 0.85   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00 | 0.85  |
| Flt Protected                     |      | 1.00  | 1.00   | 0.95  | 1.00  |                           |      |      |      | 0.95  | 0.98 | 1.00  |
| Satd. Flow (prot)                 |      | 4988  | 1577   | 1752  | 5085  |                           |      |      |      | 1649  | 1754 | 1553  |
| Flt Permitted                     |      | 1.00  | 1.00   | 0.13  | 1.00  |                           |      |      |      | 0.95  | 0.98 | 1.00  |
| Satd. Flow (perm)                 |      | 4988  | 1577   | 241   | 5085  |                           |      |      |      | 1649  | 1754 | 1553  |
| Peak-hour factor, PHF             | 0.92 | 0.96  | 0.84   | 0.59  | 0.93  | 0.92                      | 0.92 | 0.92 | 0.92 | 0.78  | 0.52 | 0.91  |
| Adj. Flow (vph)                   | 0    | 1473  | 610    | 164   | 4219  | 0                         | 0    | 0    | 0    | 174   | 92   | 535   |
| RTOR Reduction (vph)              | 0    | 0     | 141    | 0     | 0     | 0                         | 0    | 0    | 0    | 0     | 0    | 0     |
| Lane Group Flow (vph)             | 0    | 1473  | 469    | 164   | 4219  | 0                         | 0    | 0    | 0    | 130   | 136  | 535   |
| Confl. Bikes (#/hr)               |      |       | 6      |       |       |                           |      |      |      |       |      |       |
| Heavy Vehicles (%)                | 2%   | 4%    | 1%     | 3%    | 2%    | 2%                        | 2%   | 2%   | 2%   | 4%    | 0%   | 4%    |
| Turn Type                         |      | NA    | Perm   | pm+pt | NA    |                           |      |      |      | Perm  | NA   | Free  |
| Protected Phases                  |      | 2     |        | 1     | 6     |                           |      |      |      |       | 8    |       |
| Permitted Phases                  |      |       | 2      | 6     |       |                           |      |      |      | 8     |      | Free  |
| Actuated Green, G (s)             |      | 117.0 | 117.0  | 145.0 | 145.0 |                           |      |      |      | 21.5  | 21.5 | 180.0 |
| Effective Green, g (s)            |      | 117.0 | 117.0  | 145.0 | 145.0 |                           |      |      |      | 21.5  | 21.5 | 180.0 |
| Actuated g/C Ratio                |      | 0.65  | 0.65   | 0.81  | 0.81  |                           |      |      |      | 0.12  | 0.12 | 1.00  |
| Clearance Time (s)                |      | 7.0   | 7.0    | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5  |       |
| Vehicle Extension (s)             |      | 4.0   | 4.0    | 2.0   | 4.0   |                           |      |      |      | 2.0   | 2.0  |       |
| Lane Grp Cap (vph)                |      | 3242  | 1025   | 370   | 4096  |                           |      |      |      | 196   | 209  | 1553  |
| v/s Ratio Prot                    |      | 0.30  |        | 0.05  | c0.83 |                           |      |      |      |       |      |       |
| v/s Ratio Perm                    |      |       | 0.30   | 0.31  |       |                           |      |      |      | c0.08 | 0.08 | 0.34  |
| v/c Ratio                         |      | 0.45  | 0.46   | 0.44  | 1.03  |                           |      |      |      | 0.66  | 0.65 | 0.34  |
| Uniform Delay, d1                 |      | 15.6  | 15.7   | 8.1   | 17.5  |                           |      |      |      | 75.8  | 75.7 | 0.0   |
| Progression Factor                |      | 1.00  | 1.00   | 1.34  | 1.90  |                           |      |      |      | 1.00  | 1.00 | 1.00  |
| Incremental Delay, d2             |      | 0.5   | 1.5    | 0.3   | 14.8  |                           |      |      |      | 16.3  | 14.7 | 0.6   |
| Delay (s)                         |      | 16.1  | 17.2   | 11.1  | 48.0  |                           |      |      |      | 92.1  | 90.3 | 0.6   |
| Level of Service                  |      | B     | B      | B     | D     |                           |      |      |      | F     | F    | A     |
| Approach Delay (s)                |      | 16.4  |        |       | 46.6  |                           |      | 0.0  |      |       | 30.7 |       |
| Approach LOS                      |      | B     |        |       | D     |                           |      | A    |      |       | C    |       |
| <b>Intersection Summary</b>       |      |       |        |       |       |                           |      |      |      |       |      |       |
| HCM 2000 Control Delay            |      |       | 36.2   |       |       | HCM 2000 Level of Service |      |      |      |       | D    |       |
| HCM 2000 Volume to Capacity ratio |      |       | 1.03   |       |       |                           |      |      |      |       |      |       |
| Actuated Cycle Length (s)         |      |       | 180.0  |       |       | Sum of lost time (s)      |      |      |      | 20.5  |      |       |
| Intersection Capacity Utilization |      |       | 110.6% |       |       | ICU Level of Service      |      |      |      | H     |      |       |
| Analysis Period (min)             |      |       | 15     |       |       |                           |      |      |      |       |      |       |

c Critical Lane Group



| Lane Group              | EBL   | EBT  | WBT  | WBR    | NBL   | NBT  | NBR  |
|-------------------------|-------|------|------|--------|-------|------|------|
| Lane Group Flow (vph)   | 327   | 1363 | 2724 | 2740   | 1559  | 185  | 332  |
| v/c Ratio               | 1.14  | 0.55 | 0.99 | 1.77   | 1.48  | 0.47 | 0.83 |
| Control Delay           | 145.6 | 11.2 | 57.5 | 367.4  | 268.8 | 67.0 | 68.3 |
| Queue Delay             | 0.0   | 0.0  | 40.0 | 0.0    | 0.0   | 0.0  | 0.0  |
| Total Delay             | 145.6 | 11.2 | 97.4 | 367.4  | 268.8 | 67.0 | 68.3 |
| Queue Length 50th (ft)  | ~399  | 285  | 1054 | ~4607  | ~896  | 194  | 289  |
| Queue Length 95th (ft)  | #619  | 298  | m763 | m#2893 | #987  | 246  | 315  |
| Internal Link Dist (ft) |       | 1419 | 756  |        |       | 675  |      |
| Turn Bay Length (ft)    |       |      |      |        | 300   |      |      |
| Base Capacity (vph)     | 286   | 2487 | 2740 | 1549   | 1050  | 395  | 398  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0      | 0     | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 964  | 0      | 0     | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0      | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.14  | 0.55 | 1.53 | 1.77   | 1.48  | 0.47 | 0.83 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Mopac NBFR & Capital of Texas Hwy  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |  |  |  |   |   |   |
| Traffic Volume (veh/h)       | 301   | 1281  | 0   | 0   | 2533  | 2658  | 1465   | 148   | 249   | 0   | 0   | 0   |
| Future Volume (veh/h)        | 301   | 1281  | 0   | 0   | 2533  | 2658  | 1465   | 148   | 249   | 0   | 0   | 0   |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  | 7  | 4   | 14  |   |   |   |
| 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  |   |   |   |
| Adj Sat Flow, veh/h/ln       | 1863  | 1827  | 0   | 0   | 1863  | 1845  | 1881   | 1900  | 1863  |   |   |   |
| Adj Flow Rate, veh/h         | 327   | 1363  | 0   | 0   | 2724  | 0   | 1559   | 185   | 0   |   |   |   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 3   | 1   | 3  | 1   | 1   |   |   |   |
| Peak Hour Factor             | 0.92  | 0.94  | 0.92  | 0.92  | 0.93  | 0.97  | 0.94   | 0.80  | 0.75  |   |   |   |
| Percent Heavy Veh, %         | 2   | 4   | 0   | 0   | 2   | 3   | 1  | 0   | 2   |   |   |   |
| Cap, veh/h                   | 286   | 2488  | 0   | 0   | 2740  | 845   | 1053   | 396   | 330   |   |   |   |
| Arrive On Green              | 0.28  | 1.00  | 0.00  | 0.00  | 0.54  | 0.00  | 0.21   | 0.21  | 0.00  |   |   |   |
| Sat Flow, veh/h              | 1774  | 3563  | 0   | 0   | 5253  | 1568  | 5052   | 1900  | 1583  |   |   |   |
| Grp Volume(v), veh/h         | 327   | 1363  | 0   | 0   | 2724  | 0   | 1559   | 185   | 0   |   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1774  | 1736  | 0   | 0   | 1695  | 1568  | 1684   | 1900  | 1583  |   |   |   |
| Q Serve(g_s), s              | 25.0  | 0.0   | 0.0   | 0.0   | 95.7  | 0.0   | 37.5   | 15.4  | 0.0   |   |   |   |
| Cycle Q Clear(g_c), s        | 25.0  | 0.0   | 0.0   | 0.0   | 95.7  | 0.0   | 37.5   | 15.4  | 0.0   |   |   |   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.00  |   | 1.00  | 1.00   |   | 1.00  |   |   |   |
| Lane Grp Cap(c), veh/h       | 286   | 2488  | 0   | 0   | 2740  | 845   | 1053   | 396   | 330   |   |   |   |
| V/C Ratio(X)                 | 1.14  | 0.55  | 0.00  | 0.00  | 0.99  | 0.00  | 1.48   | 0.47  | 0.00  |   |   |   |
| Avail Cap(c_a), veh/h        | 286   | 2488  | 0   | 0   | 2740  | 845   | 1053   | 396   | 330   |   |   |   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Upstream Filter(I)           | 0.88  | 0.88  | 0.00  | 0.00  | 1.00  | 0.00  | 1.00   | 1.00  | 0.00  |   |   |   |
| Uniform Delay (d), s/veh     | 63.3  | 0.0   | 0.0   | 0.0   | 41.2  | 0.0   | 71.3   | 62.5  | 0.0   |   |   |   |
| Incr Delay (d2), s/veh       | 94.0  | 0.8   | 0.0   | 0.0   | 15.8  | 0.0   | 221.7  | 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     | 21.6  | 0.3   | 0.0   | 0.0   | 48.6  | 0.0   | 39.0   | 8.1   | 0.0   |   |   |   |
| LnGrp Delay(d),s/veh         | 157.2   | 0.8   | 0.0   | 0.0   | 57.0  | 0.0   | 292.9  | 62.8  | 0.0   |   |   |   |
| LnGrp LOS                    | F   | A   |   |   | E   |   | F  | E   |   |   |   |   |
| Approach Vol, veh/h          |   | 1690  |   |   | 2724  |   |  | 1744  |   |   |   |   |
| Approach Delay, s/veh        |   | 31.0  |   |   | 57.0  |   |  | 268.5   |   |   |   |   |
| Approach LOS                 |   | C   |   |   | E   |   |  | F   |   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   | 5   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 136.0   |   | 44.0  | 32.0  | 104.0   |  |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 7.0   |   | 6.5   | 7.0   | 7.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 129.0   |   | 37.5  | 25.0  | 97.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 39.5  | 27.0  | 97.7  |  |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 3.7   |   | 0.0   | 0.0   | 0.0   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 109.8   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | F   |   |   |  |   |   |   |   |   |



| Lane Group              | WBR  | NBT   | NBR  | SBL   | SBT   |
|-------------------------|------|-------|------|-------|-------|
| Lane Group Flow (vph)   | 140  | 5206  | 129  | 382   | 3756  |
| v/c Ratio               | 0.26 | 1.39  | 0.11 | 1.12  | 1.01  |
| Control Delay           | 63.8 | 199.5 | 3.1  | 153.4 | 40.1  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   |
| Total Delay             | 63.8 | 199.5 | 3.1  | 153.4 | 40.1  |
| Queue Length 50th (ft)  | 81   | ~2980 | 17   | ~523  | ~1675 |
| Queue Length 95th (ft)  | 103  | #2941 | 18   | #669  | #1730 |
| Internal Link Dist (ft) |      | 1281  |      |       | 1273  |
| Turn Bay Length (ft)    |      |       | 430  | 550   |       |
| Base Capacity (vph)     | 536  | 3757  | 1212 | 340   | 3721  |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0     | 0     |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0     | 0     |
| Storage Cap Reductn     | 0    | 0     | 0    | 0     | 0     |
| Reduced v/c Ratio       | 0.26 | 1.39  | 0.11 | 1.12  | 1.01  |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

15: Capital of Texas Hwy & Barton Creek Plaza Dwy/Driveway E  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | WBL  | WBR  | NBT    | NBR   | SBL                       | SBT   |
|-----------------------------------|------|------|--------|-------|---------------------------|-------|
| Lane Configurations               |      | ↗↗   | ↕↕↕    | ↘     | ↘                         | ↕↕↕   |
| Traffic Volume (vph)              | 0    | 109  | 5102   | 80    | 321                       | 3568  |
| Future Volume (vph)               | 0    | 109  | 5102   | 80    | 321                       | 3568  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900                      | 1900  |
| Total Lost time (s)               |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Lane Util. Factor                 |      | 0.88 | 0.91   | 1.00  | 1.00                      | 0.91  |
| Frbp, ped/bikes                   |      | 1.00 | 1.00   | 1.00  | 1.00                      | 1.00  |
| Flpb, ped/bikes                   |      | 1.00 | 1.00   | 1.00  | 1.00                      | 1.00  |
| Frt                               |      | 0.85 | 1.00   | 0.85  | 1.00                      | 1.00  |
| Flt Protected                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |      | 2842 | 5085   | 1615  | 1805                      | 5036  |
| Flt Permitted                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |      | 2842 | 5085   | 1615  | 1805                      | 5036  |
| Peak-hour factor, PHF             | 0.92 | 0.78 | 0.98   | 0.62  | 0.84                      | 0.95  |
| Adj. Flow (vph)                   | 0    | 140  | 5206   | 129   | 382                       | 3756  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 19    | 0                         | 0     |
| Lane Group Flow (vph)             | 0    | 140  | 5206   | 110   | 382                       | 3756  |
| Confl. Bikes (#/hr)               |      |      |        | 1     |                           |       |
| Heavy Vehicles (%)                | 2%   | 0%   | 2%     | 0%    | 0%                        | 3%    |
| Turn Type                         |      | Over | NA     | Prot  | Prot                      | NA    |
| Protected Phases                  |      | 5    | 6      | 6     | 5                         | 6     |
| Permitted Phases                  |      |      |        |       |                           |       |
| Actuated Green, G (s)             |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Effective Green, g (s)            |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Actuated g/C Ratio                |      | 0.19 | 0.74   | 0.74  | 0.19                      | 0.74  |
| Clearance Time (s)                |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Vehicle Extension (s)             |      | 2.0  | 4.0    | 4.0   | 2.0                       | 4.0   |
| Lane Grp Cap (vph)                |      | 536  | 3757   | 1193  | 340                       | 3721  |
| v/s Ratio Prot                    |      | 0.05 | c1.02  | 0.07  | c0.21                     | 0.75  |
| v/s Ratio Perm                    |      |      |        |       |                           |       |
| v/c Ratio                         |      | 0.26 | 1.39   | 0.09  | 1.12                      | 1.01  |
| Uniform Delay, d1                 |      | 62.3 | 23.5   | 6.6   | 73.0                      | 23.5  |
| Progression Factor                |      | 1.00 | 1.00   | 1.00  | 1.08                      | 0.99  |
| Incremental Delay, d2             |      | 0.1  | 175.3  | 0.2   | 86.1                      | 17.0  |
| Delay (s)                         |      | 62.4 | 198.8  | 6.7   | 165.2                     | 40.3  |
| Level of Service                  |      | E    | F      | A     | F                         | D     |
| Approach Delay (s)                | 62.4 |      | 194.1  |       |                           | 51.8  |
| Approach LOS                      | E    |      | F      |       |                           | D     |
| <b>Intersection Summary</b>       |      |      |        |       |                           |       |
| HCM 2000 Control Delay            |      |      | 130.9  |       | HCM 2000 Level of Service | F     |
| HCM 2000 Volume to Capacity ratio |      |      | 1.33   |       |                           |       |
| Actuated Cycle Length (s)         |      |      | 180.0  |       | Sum of lost time (s)      | 13.0  |
| Intersection Capacity Utilization |      |      | 127.2% |       | ICU Level of Service      | H     |
| Analysis Period (min)             |      |      | 15     |       |                           |       |
| c Critical Lane Group             |      |      |        |       |                           |       |



| Lane Group              | WBL  | WBT   | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 150  | 1457  | 86   | 319  | 363  | 179  |
| v/c Ratio               | 0.22 | 0.99  | 0.20 | 0.35 | 0.79 | 0.35 |
| Control Delay           | 26.7 | 60.8  | 11.5 | 14.1 | 61.0 | 10.6 |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 4.1  | 0.0  | 0.0  |
| Total Delay             | 26.8 | 60.8  | 11.5 | 18.3 | 61.0 | 10.6 |
| Queue Length 50th (ft)  | 84   | 657   | 35   | 174  | 295  | 11   |
| Queue Length 95th (ft)  | m129 | m#823 | m47  | 142  | #411 | 12   |
| Internal Link Dist (ft) |      | 522   |      | 175  | 200  |      |
| Turn Bay Length (ft)    |      |       | 70   |      |      | 90   |
| Base Capacity (vph)     | 692  | 1471  | 524  | 887  | 458  | 506  |
| Starvation Cap Reductn  | 0    | 0     | 0    | 478  | 0    | 0    |
| Spillback Cap Reductn   | 23   | 0     | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.22 | 0.99  | 0.16 | 0.78 | 0.79 | 0.35 |

**Intersection Summary**



















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: US 290 WBFR & Victory Drive  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |  |
| Lane Configurations               |   |   |   |  |  |   |  |  |   |   |  |  |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 132   | 1183  | 173   | 81  | 198   | 0   | 0   | 276   | 109   |  |
| Future Volume (vph)               | 0   | 0   | 0   | 132   | 1183  | 173   | 81  | 198   | 0   | 0   | 276   | 109   |  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |  |
| Total Lost time (s)               |   |   |   | 5.5   | 5.5   |   | 5.5   | 4.5   |   |   | 4.5   | 4.5   |  |
| Lane Util. Factor                 |   |   |   | 1.00  | 0.95  |   | 1.00  | 1.00  |   |   | 1.00  | 1.00  |  |
| Frbp, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  | 0.98  |  |
| Flpb, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  | 1.00  |  |
| Frt                               |   |   |   | 1.00  | 0.98  |   | 1.00  | 1.00  |   |   | 1.00  | 0.85  |  |
| Flt Protected                     |   |   |   | 0.95  | 1.00  |   | 0.95  | 1.00  |   |   | 1.00  | 1.00  |  |
| Satd. Flow (prot)                 |   |   |   | 1597  | 3369  |   | 1769  | 1827  |   |   | 1759  | 1490  |  |
| Flt Permitted                     |   |   |   | 0.95  | 1.00  |   | 0.18  | 1.00  |   |   | 1.00  | 1.00  |  |
| Satd. Flow (perm)                 |   |   |   | 1597  | 3369  |   | 330   | 1827  |   |   | 1759  | 1490  |  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.88  | 0.96  | 0.77  | 0.94  | 0.62  | 0.92  | 0.92  | 0.76  | 0.61  |  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 150   | 1232  | 225   | 86  | 319   | 0   | 0   | 363   | 179   |  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 11  | 0   | 0   | 0   | 0   | 0   | 0   | 120   |  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 150   | 1446  | 0   | 86  | 319   | 0   | 0   | 363   | 59  |  |
| Confl. Peds. (#/hr)               |   |   |   |   |   | 6   | 6   |   |   |   |   | 6   |  |
| Confl. Bikes (#/hr)               |   |   |   |   |   |   |   |   |   |   |   | 4   |  |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 13%   | 3%  | 11%   | 2%  | 4%  | 2%  | 2%  | 8%  | 6%  |  |
| Turn Type                         |   |   |   | Split   | NA  |   | pm+pt   | NA  |   |   | NA  | Perm  |  |
| Protected Phases                  |   |   |   | 7 8   | 7 8   |   | 2 10 1 2 6 10   |   |   |   | 1 6   |   |  |
| Permitted Phases                  |   |   |   |   |   |   | 1 2 6 10  |   |   |   |   | 1 6   |  |
| Actuated Green, G (s)             |   |   |   | 58.0  | 58.0  |   | 61.0  | 66.5  |   |   | 35.2  | 35.2  |  |
| Effective Green, g (s)            |   |   |   | 58.0  | 58.0  |   | 50.5  | 55.0  |   |   | 35.2  | 35.2  |  |
| Actuated g/C Ratio                |   |   |   | 0.43  | 0.43  |   | 0.37  | 0.41  |   |   | 0.26  | 0.26  |  |
| Clearance Time (s)                |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Vehicle Extension (s)             |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Lane Grp Cap (vph)                |   |   |   | 686   | 1447  |   | 334   | 744   |   |   | 458   | 388   |  |
| v/s Ratio Prot                    |   |   |   | 0.09  | c0.43   |   | 0.04  | c0.17   |   |   | c0.21   |   |  |
| v/s Ratio Perm                    |   |   |   |   |   |   | 0.06  |   |   |   |   | 0.04  |  |
| v/c Ratio                         |   |   |   | 0.22  | 1.00  |   | 0.26  | 0.43  |   |   | 0.79  | 0.15  |  |
| Uniform Delay, d1                 |   |   |   | 24.2  | 38.5  |   | 29.5  | 28.7  |   |   | 46.5  | 38.4  |  |
| Progression Factor                |   |   |   | 1.07  | 1.06  |   | 0.55  | 0.62  |   |   | 1.00  | 1.00  |  |
| Incremental Delay, d2             |   |   |   | 0.1   | 23.2  |   | 0.1   | 0.1   |   |   | 8.5   | 0.1   |  |
| Delay (s)                         |   |   |   | 26.0  | 64.0  |   | 16.5  | 17.9  |   |   | 55.0  | 38.5  |  |
| Level of Service                  |   |   |   | C   | E   |   | B   | B   |   |   | E   | D   |  |
| Approach Delay (s)                |   | 0.0   |   |   | 60.4  |   |   | 17.6  |   |   | 49.6  |   |  |
| Approach LOS                      |   | A   |   |   | E   |   |   | B   |   |   | D   |   |  |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |   |   |   |   |   |   |  |
| HCM 2000 Control Delay            |   |   | 51.3  |   | HCM 2000 Level of Service   |   |   |   |   |   | D   |   |  |
| HCM 2000 Volume to Capacity ratio |   |   | 0.92  |   |   |   |   |   |   |   |   |   |  |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |   |   |   |   | 32.0  |   |  |
| Intersection Capacity Utilization |   |   | 95.9%   |   | ICU Level of Service  |   |   |   |   |   | F   |   |  |
| Analysis Period (min)             |   |   | 15  |   |   |   |   |   |   |   |   |   |  |
| c Critical Lane Group             |   |   |   |   |   |   |   |   |   |   |   |   |  |





| Lane Group              | EBT   | NBT  | NBR  | SBL  | SBT  |
|-------------------------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 1553  | 169  | 173  | 334  | 112  |
| v/c Ratio               | 0.95  | 0.22 | 0.26 | 0.50 | 0.12 |
| Control Delay           | 63.5  | 26.8 | 9.8  | 8.9  | 3.4  |
| Queue Delay             | 5.5   | 0.0  | 0.0  | 0.4  | 1.1  |
| Total Delay             | 69.1  | 26.8 | 9.8  | 9.3  | 4.5  |
| Queue Length 50th (ft)  | 513   | 95   | 29   | 31   | 10   |
| Queue Length 95th (ft)  | m#584 | 141  | 66   | m135 | m13  |
| Internal Link Dist (ft) | 53    | 253  |      |      | 175  |
| Turn Bay Length (ft)    |       |      | 125  | 70   |      |
| Base Capacity (vph)     | 1640  | 746  | 659  | 663  | 922  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 72   | 630  |
| Spillback Cap Reductn   | 72    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.99  | 0.23 | 0.26 | 0.57 | 0.38 |

**Intersection Summary**






















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

17: Pack Saddle Pass & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

|                                   |  |    |  |  |  |  |  |  |    |    |  |  |      |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|------|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |      |
| Lane Configurations               |   |    |   |   |   |   |  |  |   |   |  |   |      |
| Traffic Volume (vph)              | 122   | 1192  | 48  | 0   | 0   | 0   | 0  | 145   | 144   | 291   | 101   | 0   |      |
| Future Volume (vph)               | 122   | 1192  | 48  | 0   | 0   | 0   | 0  | 145   | 144   | 291   | 101   | 0   |      |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900   | 1900  | 1900  | 1900  | 1900  | 1900  |      |
| Total Lost time (s)               |   | 6.0   |   |   |   |   |  | 4.5   | 4.5   | 5.5   | 4.5   |   |      |
| Lane Util. Factor                 |   | 0.91  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |      |
| Frbp, ped/bikes                   |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |      |
| Flpb, ped/bikes                   |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |      |
| Frt                               |   | 0.99  |   |   |   |   |  | 1.00  | 0.85  | 1.00  | 1.00  |   |      |
| Flt Protected                     |   | 0.99  |   |   |   |   |  | 1.00  | 1.00  | 0.95  | 1.00  |   |      |
| Satd. Flow (prot)                 |   | 4912  |   |   |   |   |  | 1845  | 1455  | 1702  | 1583  |   |      |
| Flt Permitted                     |   | 0.99  |   |   |   |   |  | 1.00  | 1.00  | 0.60  | 1.00  |   |      |
| Satd. Flow (perm)                 |   | 4912  |   |   |   |   |  | 1845  | 1455  | 1067  | 1583  |   |      |
| Peak-hour factor, PHF             | 0.54  | 0.94  | 0.81  | 0.92  | 0.92  | 0.92  | 0.92   | 0.86  | 0.83  | 0.87  | 0.90  | 0.92  |      |
| Adj. Flow (vph)                   | 226   | 1268  | 59  | 0   | 0   | 0   | 0  | 169   | 173   | 334   | 112   | 0   |      |
| RTOR Reduction (vph)              | 0   | 3   | 0   | 0   | 0   | 0   | 0  | 0   | 75  | 0   | 0   | 0   |      |
| Lane Group Flow (vph)             | 0   | 1550  | 0   | 0   | 0   | 0   | 0  | 169   | 98  | 334   | 112   | 0   |      |
| Confl. Peds. (#/hr)               |   |   | 3   |   |   |   |  |   | 1   | 1   |   |   |      |
| Confl. Bikes (#/hr)               |   |   | 1   |   |   |   |  |   |   |   |   |   |      |
| Heavy Vehicles (%)                | 6%  | 4%  | 0%  | 2%  | 2%  | 2%  | 2%   | 3%  | 11%   | 6%  | 20%   | 2%  |      |
| Turn Type                         | Split   | NA  |   |   |   |   |  | NA  | Prot  | D.P+P   | NA  |   |      |
| Protected Phases                  | 8 10  | 8 10  |   |   |   |   |  | 1 2 6   | 1 2 6   | 7   | 1 2 6 7   |   |      |
| Permitted Phases                  |   |   |   |   |   |   |  |   |   | 1 2 6   |   |   |      |
| Actuated Green, G (s)             |   | 45.0  |   |   |   |   |  | 55.5  | 55.5  | 74.0  | 78.5  |   |      |
| Effective Green, g (s)            |   | 45.0  |   |   |   |   |  | 50.0  | 50.0  | 69.5  | 73.0  |   |      |
| Actuated g/C Ratio                |   | 0.33  |   |   |   |   |  | 0.37  | 0.37  | 0.51  | 0.54  |   |      |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   | 5.5   |   |   |      |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   | 1.5   |   |   |      |
| Lane Grp Cap (vph)                |   | 1637  |   |   |   |   |  | 683   | 538   | 636   | 855   |   |      |
| v/s Ratio Prot                    |   | c0.32   |   |   |   |   |  | 0.09  | 0.07  | c0.07   | 0.07  |   |      |
| v/s Ratio Perm                    |   |   |   |   |   |   |  |   |   | c0.20   |   |   |      |
| v/c Ratio                         |   | 0.95  |   |   |   |   |  | 0.25  | 0.18  | 0.53  | 0.13  |   |      |
| Uniform Delay, d1                 |   | 43.8  |   |   |   |   |  | 29.5  | 28.7  | 25.3  | 15.3  |   |      |
| Progression Factor                |   | 1.18  |   |   |   |   |  | 1.00  | 1.00  | 0.37  | 0.26  |   |      |
| Incremental Delay, d2             |   | 11.1  |   |   |   |   |  | 0.1   | 0.1   | 0.3   | 0.0   |   |      |
| Delay (s)                         |   | 62.8  |   |   |   |   |  | 29.5  | 28.8  | 9.8   | 3.9   |   |      |
| Level of Service                  |   | E   |   |   |   |   |  | C   | C   | A   | A   |   |      |
| Approach Delay (s)                |   | 62.8  |   |   | 0.0   |   |  | 29.1  |   |   | 8.3   |   |      |
| Approach LOS                      |   | E   |   |   | A   |   |  | C   |   |   | A   |   |      |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |      |
| HCM 2000 Control Delay            |   |   | 47.5  |   |   |   |  |   |   |   |   | HCM 2000 Level of Service   | D    |
| HCM 2000 Volume to Capacity ratio |   |   | 0.77  |   |   |   |  |   |   |   |   |   |      |
| Actuated Cycle Length (s)         |   |   | 135.0   |   |   |   |  |   |   |   |   | Sum of lost time (s)  | 32.0 |
| Intersection Capacity Utilization |   |   | 95.9%   |   |   |   |  |   |   |   |   | ICU Level of Service  | F    |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |      |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |      |



| Lane Group              | WBL   | WBT   | WBR   | NBL   | NBT  | SBT  | SBR  |
|-------------------------|-------|-------|-------|-------|------|------|------|
| Lane Group Flow (vph)   | 459   | 959   | 760   | 589   | 901  | 892  | 191  |
| v/c Ratio               | 1.63  | 1.65  | 1.63  | 1.40  | 0.34 | 0.84 | 0.43 |
| Control Delay           | 332.5 | 335.6 | 319.8 | 214.3 | 1.1  | 58.0 | 13.4 |
| Queue Delay             | 0.4   | 0.2   | 0.0   | 2.0   | 0.3  | 25.6 | 0.0  |
| Total Delay             | 332.9 | 335.8 | 319.8 | 216.3 | 1.5  | 83.6 | 13.4 |
| Queue Length 50th (ft)  | ~612  | ~643  | ~766  | ~647  | 19   | 267  | 22   |
| Queue Length 95th (ft)  | #805  | #782  | #924  | #775  | 18   | 303  | 89   |
| Internal Link Dist (ft) |       | 53    |       |       | 174  | 314  |      |
| Turn Bay Length (ft)    |       |       |       |       |      |      | 100  |
| Base Capacity (vph)     | 282   | 580   | 465   | 422   | 2639 | 1056 | 446  |
| Starvation Cap Reductn  | 0     | 0     | 0     | 76    | 1011 | 0    | 0    |
| Spillback Cap Reductn   | 9     | 18    | 0     | 0     | 0    | 198  | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.68  | 1.71  | 1.63  | 1.70  | 0.55 | 1.04 | 0.43 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

18: US 290 WBFR & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM

| Movement                          | EBL  | EBT  | EBR    | WBL   | WBT   | WBR   | NBL      | NBT      | NBR  | SBL  | SBT  | SBR                       |                      |   |
|-----------------------------------|------|------|--------|-------|-------|-------|----------|----------|------|------|------|---------------------------|----------------------|---|
| Lane Configurations               |      |      |        |       |       |       |          |          |      |      |      |                           |                      |   |
| Traffic Volume (vph)              | 0    | 0    | 0      | 493   | 800   | 646   | 501      | 829      | 0    | 0    | 767  | 170                       |                      |   |
| Future Volume (vph)               | 0    | 0    | 0      | 493   | 800   | 646   | 501      | 829      | 0    | 0    | 767  | 170                       |                      |   |
| 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   | 5.0      | 5.0      |      |      | 5.0  | 5.0                       |                      |   |
| Lane Util. Factor                 |      |      |        | 0.91  | 0.91  | 1.00  | 1.00     | 0.95     |      |      | 0.91 | 1.00                      |                      |   |
| Frbp, ped/bikes                   |      |      |        | 1.00  | 1.00  | 1.00  | 1.00     | 1.00     |      |      | 1.00 | 0.99                      |                      |   |
| Flpb, ped/bikes                   |      |      |        | 1.00  | 1.00  | 1.00  | 1.00     | 1.00     |      |      | 1.00 | 1.00                      |                      |   |
| Frt                               |      |      |        | 1.00  | 1.00  | 0.85  | 1.00     | 1.00     |      |      | 1.00 | 0.85                      |                      |   |
| Flt Protected                     |      |      |        | 0.95  | 0.99  | 1.00  | 0.95     | 1.00     |      |      | 1.00 | 1.00                      |                      |   |
| Satd. Flow (prot)                 |      |      |        | 1595  | 3282  | 1599  | 1769     | 3574     |      |      | 5085 | 1545                      |                      |   |
| Flt Permitted                     |      |      |        | 0.95  | 0.99  | 1.00  | 0.31     | 1.00     |      |      | 1.00 | 1.00                      |                      |   |
| Satd. Flow (perm)                 |      |      |        | 1595  | 3282  | 1599  | 572      | 3574     |      |      | 5085 | 1545                      |                      |   |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92   | 0.87  | 0.94  | 0.85  | 0.85     | 0.92     | 0.92 | 0.92 | 0.86 | 0.89                      |                      |   |
| Adj. Flow (vph)                   | 0    | 0    | 0      | 567   | 851   | 760   | 589      | 901      | 0    | 0    | 892  | 191                       |                      |   |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 0     | 0     | 183   | 0        | 0        | 0    | 0    | 0    | 126                       |                      |   |
| Lane Group Flow (vph)             | 0    | 0    | 0      | 459   | 959   | 577   | 589      | 901      | 0    | 0    | 892  | 65                        |                      |   |
| Confl. Peds. (#/hr)               |      |      |        |       |       |       | 1        |          |      |      |      | 1                         |                      |   |
| Confl. Bikes (#/hr)               |      |      |        |       |       |       |          |          |      |      |      | 1                         |                      |   |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%     | 3%    | 5%    | 1%    | 2%       | 1%       | 2%   | 2%   | 2%   | 3%                        |                      |   |
| Turn Type                         |      |      |        | Perm  | NA    | Perm  | Perm     | NA       |      |      | NA   | Perm                      |                      |   |
| Protected Phases                  |      |      |        |       | 7 8   |       |          | 1 2 6 10 |      |      | 1 6  |                           |                      |   |
| Permitted Phases                  |      |      |        | 7 8   |       | 7 8   | 1 2 6 10 |          |      |      |      | 1 6                       |                      |   |
| Actuated Green, G (s)             |      |      |        | 23.0  | 23.0  | 23.0  | 96.0     | 96.0     |      |      | 27.0 | 27.0                      |                      |   |
| Effective Green, g (s)            |      |      |        | 23.0  | 23.0  | 23.0  | 96.0     | 96.0     |      |      | 27.0 | 27.0                      |                      |   |
| Actuated g/C Ratio                |      |      |        | 0.18  | 0.18  | 0.18  | 0.74     | 0.74     |      |      | 0.21 | 0.21                      |                      |   |
| Clearance Time (s)                |      |      |        |       |       |       |          |          |      |      |      |                           |                      |   |
| Vehicle Extension (s)             |      |      |        |       |       |       |          |          |      |      |      |                           |                      |   |
| Lane Grp Cap (vph)                |      |      |        | 282   | 580   | 282   | 422      | 2639     |      |      | 1056 | 320                       |                      |   |
| v/s Ratio Prot                    |      |      |        |       |       |       |          | 0.25     |      |      | 0.18 |                           |                      |   |
| v/s Ratio Perm                    |      |      |        | 0.29  | 0.29  | c0.36 | c1.03    |          |      |      |      | 0.04                      |                      |   |
| v/c Ratio                         |      |      |        | 1.63  | 1.65  | 2.05  | 1.40     | 0.34     |      |      | 0.84 | 0.20                      |                      |   |
| Uniform Delay, d1                 |      |      |        | 53.5  | 53.5  | 53.5  | 17.0     | 5.9      |      |      | 49.5 | 42.6                      |                      |   |
| Progression Factor                |      |      |        | 1.00  | 1.00  | 1.00  | 1.38     | 0.14     |      |      | 1.00 | 1.00                      |                      |   |
| Incremental Delay, d2             |      |      |        | 298.1 | 301.7 | 483.4 | 190.1    | 0.0      |      |      | 6.1  | 0.1                       |                      |   |
| Delay (s)                         |      |      |        | 351.6 | 355.2 | 536.9 | 213.6    | 0.9      |      |      | 55.6 | 42.7                      |                      |   |
| Level of Service                  |      |      |        | F     | F     | F     | F        | A        |      |      | E    | D                         |                      |   |
| Approach Delay (s)                |      | 0.0  |        |       | 417.8 |       |          | 85.0     |      |      | 53.3 |                           |                      |   |
| Approach LOS                      |      | A    |        |       | F     |       |          | F        |      |      | D    |                           |                      |   |
| <b>Intersection Summary</b>       |      |      |        |       |       |       |          |          |      |      |      |                           |                      |   |
| HCM 2000 Control Delay            |      |      | 230.3  |       |       |       |          |          |      |      |      | HCM 2000 Level of Service | F                    |   |
| HCM 2000 Volume to Capacity ratio |      |      | 1.84   |       |       |       |          |          |      |      |      |                           |                      |   |
| Actuated Cycle Length (s)         |      |      | 130.0  |       |       |       |          |          |      |      | 32.0 |                           |                      |   |
| Intersection Capacity Utilization |      |      | 115.8% |       |       |       |          |          |      |      |      |                           | ICU Level of Service | H |
| Analysis Period (min)             |      |      | 15     |       |       |       |          |          |      |      |      |                           |                      |   |
| c Critical Lane Group             |      |      |        |       |       |       |          |          |      |      |      |                           |                      |   |



| Lane Group              | EBL  | EBT  | EBR  | NBT  | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 244  | 430  | 199  | 1112 | 726  | 678   | 803  |
| v/c Ratio               | 0.59 | 0.53 | 0.39 | 0.59 | 1.06 | 1.37  | 0.33 |
| Control Delay           | 51.4 | 46.7 | 7.8  | 34.6 | 83.7 | 197.8 | 10.0 |
| Queue Delay             | 2.0  | 0.0  | 0.0  | 0.6  | 0.0  | 2.5   | 2.5  |
| Total Delay             | 53.4 | 46.7 | 7.8  | 35.1 | 83.7 | 200.3 | 12.4 |
| Queue Length 50th (ft)  | 185  | 168  | 0    | 274  | ~584 | ~738  | 102  |
| Queue Length 95th (ft)  | 271  | 221  | 62   | 323  | #760 | m#618 | m98  |
| Internal Link Dist (ft) |      | 62   |      | 300  |      |       | 174  |
| Turn Bay Length (ft)    |      |      |      |      | 100  |       |      |
| Base Capacity (vph)     | 412  | 808  | 506  | 1896 | 683  | 494   | 2399 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 116   | 1428 |
| Spillback Cap Reductn   | 71   | 0    | 0    | 385  | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.72 | 0.53 | 0.39 | 0.74 | 1.06 | 1.79  | 0.83 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

19: Menchaca Road & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | EBL   | EBT  | EBR    | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL   | SBT     | SBR                       |                      |   |
|-----------------------------------|-------|------|--------|------|------|------|------|------|-------|-------|---------|---------------------------|----------------------|---|
| Lane Configurations               | ↘     | ↑↑   | ↗      |      |      |      |      | ↑↑↑  | ↗     | ↘     | ↑↑      |                           |                      |   |
| Traffic Volume (vph)              | 217   | 383  | 193    | 0    | 0    | 0    | 0    | 1056 | 624   | 549   | 787     | 0                         |                      |   |
| Future Volume (vph)               | 217   | 383  | 193    | 0    | 0    | 0    | 0    | 1056 | 624   | 549   | 787     | 0                         |                      |   |
| 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    |      |      |      |      | 5.0  | 5.0   | 5.0   | 5.0     |                           |                      |   |
| Lane Util. Factor                 | 1.00  | 0.95 | 1.00   |      |      |      |      | 0.91 | 1.00  | 1.00  | 0.95    |                           |                      |   |
| Frpb, ped/bikes                   | 1.00  | 1.00 | 0.99   |      |      |      |      | 1.00 | 0.99  | 1.00  | 1.00    |                           |                      |   |
| Flpb, ped/bikes                   | 1.00  | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 1.00  | 1.00    |                           |                      |   |
| Frt                               | 1.00  | 1.00 | 0.85   |      |      |      |      | 1.00 | 0.85  | 1.00  | 1.00    |                           |                      |   |
| Flt Protected                     | 0.95  | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.95  | 1.00    |                           |                      |   |
| Satd. Flow (prot)                 | 1787  | 3505 | 1533   |      |      |      |      | 5136 | 1579  | 1787  | 3505    |                           |                      |   |
| Flt Permitted                     | 0.95  | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.95  | 1.00    |                           |                      |   |
| Satd. Flow (perm)                 | 1787  | 3505 | 1533   |      |      |      |      | 5136 | 1579  | 1787  | 3505    |                           |                      |   |
| Peak-hour factor, PHF             | 0.89  | 0.89 | 0.97   | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.86  | 0.81  | 0.98    | 0.92                      |                      |   |
| Adj. Flow (vph)                   | 244   | 430  | 199    | 0    | 0    | 0    | 0    | 1112 | 726   | 678   | 803     | 0                         |                      |   |
| RTOR Reduction (vph)              | 0     | 0    | 152    | 0    | 0    | 0    | 0    | 0    | 100   | 0     | 0       | 0                         |                      |   |
| Lane Group Flow (vph)             | 244   | 430  | 47     | 0    | 0    | 0    | 0    | 1112 | 626   | 678   | 803     | 0                         |                      |   |
| Confl. Peds. (#/hr)               |       |      |        |      |      |      |      |      | 1     | 1     |         |                           |                      |   |
| Confl. Bikes (#/hr)               |       |      | 1      |      |      |      |      |      |       |       |         |                           |                      |   |
| Heavy Vehicles (%)                | 1%    | 3%   | 4%     | 2%   | 2%   | 2%   | 2%   | 1%   | 1%    | 1%    | 3%      | 2%                        |                      |   |
| Turn Type                         | Perm  | NA   | Perm   |      |      |      |      | NA   | Perm  | Prot  | NA      |                           |                      |   |
| Protected Phases                  |       | 8 10 |        |      |      |      |      | 1 2  |       | 6 7   | 1 2 6 7 |                           |                      |   |
| Permitted Phases                  | 8 10  |      | 8 10   |      |      |      |      |      | 1 2   |       |         |                           |                      |   |
| Actuated Green, G (s)             | 31.0  | 31.0 | 31.0   |      |      |      |      | 48.0 | 48.0  | 35.0  | 88.0    |                           |                      |   |
| Effective Green, g (s)            | 31.0  | 31.0 | 31.0   |      |      |      |      | 48.0 | 48.0  | 35.0  | 88.0    |                           |                      |   |
| Actuated g/C Ratio                | 0.24  | 0.24 | 0.24   |      |      |      |      | 0.37 | 0.37  | 0.27  | 0.68    |                           |                      |   |
| Clearance Time (s)                |       |      |        |      |      |      |      |      |       |       |         |                           |                      |   |
| Vehicle Extension (s)             |       |      |        |      |      |      |      |      |       |       |         |                           |                      |   |
| Lane Grp Cap (vph)                | 426   | 835  | 365    |      |      |      |      | 1896 | 583   | 481   | 2372    |                           |                      |   |
| v/s Ratio Prot                    |       | 0.12 |        |      |      |      |      | 0.22 |       | c0.38 | 0.23    |                           |                      |   |
| v/s Ratio Perm                    | c0.14 |      | 0.03   |      |      |      |      |      | c0.40 |       |         |                           |                      |   |
| v/c Ratio                         | 0.57  | 0.51 | 0.13   |      |      |      |      | 0.59 | 1.07  | 1.41  | 0.34    |                           |                      |   |
| Uniform Delay, d1                 | 43.7  | 43.0 | 38.9   |      |      |      |      | 33.0 | 41.0  | 47.5  | 8.8     |                           |                      |   |
| Progression Factor                | 1.00  | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.69  | 1.18    |                           |                      |   |
| Incremental Delay, d2             | 1.2   | 0.2  | 0.1    |      |      |      |      | 0.3  | 58.5  | 185.5 | 0.0     |                           |                      |   |
| Delay (s)                         | 44.8  | 43.2 | 39.0   |      |      |      |      | 33.3 | 99.5  | 218.1 | 10.4    |                           |                      |   |
| Level of Service                  | D     | D    | D      |      |      |      |      | C    | F     | F     | B       |                           |                      |   |
| Approach Delay (s)                |       | 42.7 |        |      | 0.0  |      |      | 59.4 |       |       | 105.5   |                           |                      |   |
| Approach LOS                      |       | D    |        |      | A    |      |      | E    |       |       | F       |                           |                      |   |
| <b>Intersection Summary</b>       |       |      |        |      |      |      |      |      |       |       |         |                           |                      |   |
| HCM 2000 Control Delay            |       |      | 72.2   |      |      |      |      |      |       |       |         | HCM 2000 Level of Service | E                    |   |
| HCM 2000 Volume to Capacity ratio |       |      | 1.21   |      |      |      |      |      |       |       |         |                           |                      |   |
| Actuated Cycle Length (s)         |       |      | 130.0  |      |      |      |      |      |       | 32.0  |         |                           |                      |   |
| Intersection Capacity Utilization |       |      | 115.8% |      |      |      |      |      |       |       |         |                           | ICU Level of Service | H |
| Analysis Period (min)             |       |      | 15     |      |      |      |      |      |       |       |         |                           |                      |   |
| c Critical Lane Group             |       |      |        |      |      |      |      |      |       |       |         |                           |                      |   |

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 8.9  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 12   | 147  | 147  | 13   | 128  | 3    | 143  | 9    | 96   | 2    | 19   | 28   |
| Future Vol, veh/h        | 12   | 147  | 147  | 13   | 128  | 3    | 143  | 9    | 96   | 2    | 19   | 28   |
| Conflicting Peds, #/hr   | 15   | 0    | 4    | 4    | 0    | 15   | 9    | 0    | 15   | 15   | 0    | 9    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 50   | 66   | 74   | 95   | 58   | 60   | 76   | 75   | 60   | 60   | 60   | 75   |
| Heavy Vehicles, %        | 0    | 0    | 6    | 0    | 0    | 0    | 11   | 17   | 2    | 0    | 0    | 0    |
| Mvmt Flow                | 24   | 223  | 199  | 14   | 221  | 5    | 188  | 12   | 160  | 3    | 32   | 37   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |       | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-----|-----|
| Conflicting Flow All | 241    | 0 | 0 | 426    | 0 | 0 | 670    | 644   | 342   | 739    | 741 | 248 |
| Stage 1              | -      | - | - | -      | - | - | 375    | 375   | -     | 267    | 267 | -   |
| Stage 2              | -      | - | - | -      | - | - | 295    | 269   | -     | 472    | 474 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.21   | 6.67  | 6.22  | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.21   | 5.67  | -     | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.21   | 5.67  | -     | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.599  | 4.153 | 3.318 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1337   | - | - | 1144   | - | - | 359    | 373   | 701   | 336    | 347 | 796 |
| Stage 1              | -      | - | - | -      | - | - | 628    | 592   | -     | 743    | 692 | -   |
| Stage 2              | -      | - | - | -      | - | - | 694    | 660   | -     | 576    | 561 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -     | -     | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1318   | - | - | 1140   | - | - | 304    | 352   | 688   | 237    | 328 | 778 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 304    | 352   | -     | 237    | 328 | -   |
| Stage 1              | -      | - | - | -      | - | - | 610    | 575   | -     | 715    | 673 | -   |
| Stage 2              | -      | - | - | -      | - | - | 615    | 642   | -     | 416    | 545 | -   |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 0.4 |  |  | 0.5 |  |  | 23.9 |  |  | 14.4 |  |  |
| HCM LOS              |     |  |  |     |  |  | C    |  |  | B    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 304   | 645   | 1318  | -   | -   | 1140  | -   | -   | 456   |
| HCM Lane V/C Ratio    | 0.619 | 0.267 | 0.018 | -   | -   | 0.012 | -   | -   | 0.159 |
| HCM Control Delay (s) | 34.3  | 12.6  | 7.8   | 0   | -   | 8.2   | 0   | -   | 14.4  |
| HCM Lane LOS          | D     | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 3.8   | 1.1   | 0.1   | -   | -   | 0     | -   | -   | 0.6   |

21: S Lamar Blvd & Driveway A  
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted AM



| Movement                          | EBL   | EBR  | NBL  | NBT                  | SBT  | SBR  |      |      |      |  |
|-----------------------------------|-------|------|------|----------------------|------|------|------|------|------|--|
| Lane Configurations               |       |      |      |                      |      |      |      |      |      |  |
| Traffic Volume (veh/h)            | 0     | 0    | 0    | 1827                 | 1071 | 84   |      |      |      |  |
| Future Volume (Veh/h)             | 0     | 0    | 0    | 1827                 | 1071 | 84   |      |      |      |  |
| Sign Control                      | Stop  |      |      | Free                 |      | Free |      |      |      |  |
| Grade                             | 0%    |      |      | 0%                   | 0%   |      |      |      |      |  |
| Peak Hour Factor                  | 0.92  | 0.92 | 0.92 | 0.92                 | 0.92 | 0.92 |      |      |      |  |
| Hourly flow rate (vph)            | 0     | 0    | 0    | 1986                 | 1164 | 91   |      |      |      |  |
| <b>Pedestrians</b>                |       |      |      |                      |      |      |      |      |      |  |
| Lane Width (ft)                   |       |      |      |                      |      |      |      |      |      |  |
| Walking Speed (ft/s)              |       |      |      |                      |      |      |      |      |      |  |
| Percent Blockage                  |       |      |      |                      |      |      |      |      |      |  |
| Right turn flare (veh)            |       |      |      |                      |      |      |      |      |      |  |
| Median type                       |       |      |      | None                 | None |      |      |      |      |  |
| Median storage (veh)              |       |      |      |                      |      |      |      |      |      |  |
| Upstream signal (ft)              |       |      |      | 408                  | 941  |      |      |      |      |  |
| pX, platoon unblocked             |       |      |      |                      |      |      |      |      |      |  |
| vC, conflicting volume            | 1706  | 336  | 1255 |                      |      |      |      |      |      |  |
| vC1, stage 1 conf vol             |       |      |      |                      |      |      |      |      |      |  |
| vC2, stage 2 conf vol             |       |      |      |                      |      |      |      |      |      |  |
| vCu, unblocked vol                | 1706  | 336  | 1255 |                      |      |      |      |      |      |  |
| tC, single (s)                    | 6.8   | 6.9  | 4.1  |                      |      |      |      |      |      |  |
| tC, 2 stage (s)                   |       |      |      |                      |      |      |      |      |      |  |
| tF (s)                            | 3.5   | 3.3  | 2.2  |                      |      |      |      |      |      |  |
| p0 queue free %                   | 100   | 100  | 100  |                      |      |      |      |      |      |  |
| cM capacity (veh/h)               | 82    | 659  | 550  |                      |      |      |      |      |      |  |
| Direction, Lane #                 | EB 1  | NB 1 | NB 2 | NB 3                 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |  |
| Volume Total                      | 0     | 496  | 496  | 496                  | 496  | 333  | 333  | 333  | 257  |  |
| Volume Left                       | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |
| Volume Right                      | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 91   |  |
| cSH                               | 1700  | 1700 | 1700 | 1700                 | 1700 | 1700 | 1700 | 1700 | 1700 |  |
| Volume to Capacity                | 0.00  | 0.29 | 0.29 | 0.29                 | 0.29 | 0.20 | 0.20 | 0.20 | 0.15 |  |
| Queue Length 95th (ft)            | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |
| Control Delay (s)                 | 0.0   | 0.0  | 0.0  | 0.0                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| Lane LOS                          | A     |      |      |                      |      |      |      |      |      |  |
| Approach Delay (s)                | 0.0   | 0.0  |      |                      |      |      | 0.0  |      |      |  |
| Approach LOS                      | A     |      |      |                      |      |      |      |      |      |  |
| <b>Intersection Summary</b>       |       |      |      |                      |      |      |      |      |      |  |
| Average Delay                     | 0.0   |      |      |                      |      |      |      |      |      |  |
| Intersection Capacity Utilization | 29.8% |      |      | ICU Level of Service |      |      |      | A    |      |  |
| Analysis Period (min)             | 15    |      |      |                      |      |      |      |      |      |  |



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.1  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    |      |      | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 70   | 0    | 0    | 805  | 17   |
| Future Vol, veh/h        | 0    | 70   | 0    | 0    | 805  | 17   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | -    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 76   | 0    | 0    | 875  | 18   |

| Major/Minor          | Minor2 |      | Major2 |   |
|----------------------|--------|------|--------|---|
| Conflicting Flow All | -      | 447  | -      | 0 |
| Stage 1              | -      | -    | -      | - |
| Stage 2              | -      | -    | -      | - |
| Critical Hdwy        | -      | 7.14 | -      | - |
| Critical Hdwy Stg 1  | -      | -    | -      | - |
| Critical Hdwy Stg 2  | -      | -    | -      | - |
| Follow-up Hdwy       | -      | 3.92 | -      | - |
| Pot Cap-1 Maneuver   | 0      | 478  | -      | - |
| Stage 1              | 0      | -    | -      | - |
| Stage 2              | 0      | -    | -      | - |
| Platoon blocked, %   |        |      | -      | - |
| Mov Cap-1 Maneuver   | -      | 478  | -      | - |
| Mov Cap-2 Maneuver   | -      | -    | -      | - |
| Stage 1              | -      | -    | -      | - |
| Stage 2              | -      | -    | -      | - |

| Approach             | EB | SB |
|----------------------|----|----|
| HCM Control Delay, s | 14 | 0  |
| HCM LOS              | B  |    |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-----|
| Capacity (veh/h)      | 478   | -   | -   |
| HCM Lane V/C Ratio    | 0.159 | -   | -   |
| HCM Control Delay (s) | 14    | -   | -   |
| HCM Lane LOS          | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.6   | -   | -   |

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.9  |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↗    | ↗↗↗  | ↗    |      |      |
| Traffic Vol, veh/h       | 0    | 61   | 1660 | 92   | 0    | 0    |
| Future Vol, veh/h        | 0    | 61   | 1660 | 92   | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 0    | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | -    |
| Grade, %                 | 0    | -    | 0    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 66   | 1804 | 100  | 0    | 0    |

| Major/Minor          | Minor1 | Major1 |   |
|----------------------|--------|--------|---|
| Conflicting Flow All | -      | 902    | 0 |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |
| Critical Hdwy        | -      | 7.14   | - |
| Critical Hdwy Stg 1  | -      | -      | - |
| Critical Hdwy Stg 2  | -      | -      | - |
| Follow-up Hdwy       | -      | 3.92   | - |
| Pot Cap-1 Maneuver   | 0      | 241    | - |
| Stage 1              | 0      | -      | - |
| Stage 2              | 0      | -      | - |
| Platoon blocked, %   |        | -      | - |
| Mov Cap-1 Maneuver   | -      | 241    | - |
| Mov Cap-2 Maneuver   | -      | -      | - |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |

| Approach             | WB   | NB |
|----------------------|------|----|
| HCM Control Delay, s | 25.5 | 0  |
| HCM LOS              | D    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 |
|-----------------------|-----|----------|
| Capacity (veh/h)      | -   | - 241    |
| HCM Lane V/C Ratio    | -   | - 0.275  |
| HCM Control Delay (s) | -   | - 25.5   |
| HCM Lane LOS          | -   | - D      |
| HCM 95th %tile Q(veh) | -   | - 1.1    |



| Lane Group              | WBL  | WBR  | NBT   | NBR  | SBL  | SBT  |
|-------------------------|------|------|-------|------|------|------|
| Lane Group Flow (vph)   | 533  | 453  | 1766  | 701  | 433  | 2108 |
| v/c Ratio               | 0.68 | 0.59 | 1.09  | 0.76 | 0.60 | 0.85 |
| Control Delay           | 52.4 | 29.5 | 77.8  | 9.8  | 52.5 | 19.5 |
| Queue Delay             | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  |
| Total Delay             | 52.4 | 29.5 | 77.8  | 9.8  | 52.5 | 19.5 |
| Queue Length 50th (ft)  | 221  | 281  | ~937  | 42   | 178  | 657  |
| Queue Length 95th (ft)  | 269  | 395  | #1051 | 121  | 211  | 775  |
| Internal Link Dist (ft) | 497  |      | 121   |      |      | 322  |
| Turn Bay Length (ft)    |      | 125  |       |      | 150  |      |
| Base Capacity (vph)     | 788  | 768  | 1614  | 918  | 719  | 2488 |
| Starvation Cap Reductn  | 0    | 0    | 0     | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0     | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.68 | 0.59 | 1.09  | 0.76 | 0.60 | 0.85 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

1: S Lamar Blvd & W Oltorf Street  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement                          | WBL   | WBR   | NBT   | NBR  | SBL                       | SBT   |
|-----------------------------------|-------|-------|-------|------|---------------------------|-------|
| Lane Configurations               |       |       |       |      |                           |       |
| Traffic Volume (vph)              | 458   | 426   | 1660  | 596  | 355                       | 1960  |
| Future Volume (vph)               | 458   | 426   | 1660  | 596  | 355                       | 1960  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900 | 1900                      | 1900  |
| Total Lost time (s)               | 5.0   | 5.0   | 5.0   | 5.0  | 5.0                       | 5.0   |
| Lane Util. Factor                 | 0.97  | 1.00  | 0.95  | 1.00 | 0.97                      | 0.95  |
| Frpb, ped/bikes                   | 1.00  | 1.00  | 1.00  | 0.97 | 1.00                      | 1.00  |
| Flpb, ped/bikes                   | 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  |
| Flt Protected                     | 0.95  | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (prot)                 | 3433  | 1615  | 3574  | 1543 | 3467                      | 3574  |
| Flt Permitted                     | 0.95  | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (perm)                 | 3433  | 1615  | 3574  | 1543 | 3467                      | 3574  |
| Peak-hour factor, PHF             | 0.86  | 0.94  | 0.94  | 0.85 | 0.82                      | 0.93  |
| Adj. Flow (vph)                   | 533   | 453   | 1766  | 701  | 433                       | 2108  |
| RTOR Reduction (vph)              | 0     | 3     | 0     | 221  | 0                         | 0     |
| Lane Group Flow (vph)             | 533   | 450   | 1766  | 480  | 433                       | 2108  |
| Confl. Peds. (#/hr)               |       | 10    |       | 6    | 6                         |       |
| Confl. Bikes (#/hr)               |       |       |       | 5    |                           |       |
| Heavy Vehicles (%)                | 2%    | 0%    | 1%    | 2%   | 1%                        | 1%    |
| Turn Type                         | Prot  | pt+ov | NA    | Perm | Prot                      | NA    |
| Protected Phases                  | 4     | 1 4   | 2     |      | 1                         | 6     |
| Permitted Phases                  |       | 4     |       | 2    |                           |       |
| Actuated Green, G (s)             | 31.0  | 64.0  | 61.0  | 61.0 | 28.0                      | 94.0  |
| Effective Green, g (s)            | 31.0  | 64.0  | 61.0  | 61.0 | 28.0                      | 94.0  |
| Actuated g/C Ratio                | 0.23  | 0.47  | 0.45  | 0.45 | 0.21                      | 0.70  |
| Clearance Time (s)                | 5.0   |       | 5.0   | 5.0  | 5.0                       | 5.0   |
| Vehicle Extension (s)             | 1.0   |       | 1.0   | 1.0  | 1.0                       | 1.0   |
| Lane Grp Cap (vph)                | 788   | 765   | 1614  | 697  | 719                       | 2488  |
| v/s Ratio Prot                    | c0.16 | 0.28  | c0.49 |      | 0.12                      | c0.59 |
| v/s Ratio Perm                    |       |       |       | 0.31 |                           |       |
| v/c Ratio                         | 0.68  | 0.59  | 1.09  | 0.69 | 0.60                      | 0.85  |
| Uniform Delay, d1                 | 47.4  | 25.9  | 37.0  | 29.4 | 48.5                      | 15.2  |
| Progression Factor                | 1.00  | 1.00  | 0.74  | 0.44 | 1.00                      | 1.00  |
| Incremental Delay, d2             | 4.6   | 3.3   | 50.1  | 3.9  | 3.7                       | 3.8   |
| Delay (s)                         | 52.1  | 29.2  | 77.5  | 16.8 | 52.2                      | 19.0  |
| Level of Service                  | D     | C     | E     | B    | D                         | B     |
| Approach Delay (s)                | 41.6  |       | 60.2  |      |                           | 24.6  |
| Approach LOS                      | D     |       | E     |      |                           | C     |
| <b>Intersection Summary</b>       |       |       |       |      |                           |       |
| HCM 2000 Control Delay            |       |       | 42.1  |      | HCM 2000 Level of Service | D     |
| HCM 2000 Volume to Capacity ratio |       |       | 0.95  |      |                           |       |
| Actuated Cycle Length (s)         |       |       | 135.0 |      | Sum of lost time (s)      | 15.0  |
| Intersection Capacity Utilization |       |       | 81.6% |      | ICU Level of Service      | D     |
| Analysis Period (min)             |       |       | 15    |      |                           |       |
| c Critical Lane Group             |       |       |       |      |                           |       |



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NBL   | NBT  | NBR  | SBL  | SBT   |
|-------------------------|------|------|------|------|-------|------|------|------|-------|
| Lane Group Flow (vph)   | 133  | 91   | 242  | 122  | 206   | 2024 | 158  | 49   | 2203  |
| v/c Ratio               | 0.58 | 0.23 | 0.63 | 0.69 | 0.84  | 0.80 | 0.14 | 0.82 | 1.11  |
| Control Delay           | 54.9 | 44.2 | 40.6 | 64.3 | 47.4  | 22.9 | 6.7  | 79.2 | 79.6  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   |
| Total Delay             | 54.9 | 44.2 | 40.6 | 64.3 | 47.4  | 22.9 | 6.7  | 79.2 | 79.6  |
| Queue Length 50th (ft)  | 100  | 67   | 137  | 80   | 133   | 708  | 39   | 28   | ~1148 |
| Queue Length 95th (ft)  | 128  | 56   | 204  | 112  | m#238 | 872  | m48  | m#49 | #1288 |
| Internal Link Dist (ft) |      | 215  |      | 74   |       | 201  |      |      | 588   |
| Turn Bay Length (ft)    | 75   |      | 50   |      | 50    |      | 125  | 50   |       |
| Base Capacity (vph)     | 229  | 534  | 485  | 295  | 244   | 2522 | 1100 | 60   | 1992  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0     |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0     |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0     |
| Reduced v/c Ratio       | 0.58 | 0.17 | 0.50 | 0.41 | 0.84  | 0.80 | 0.14 | 0.82 | 1.11  |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

2: S Lamar Blvd & Bluebonnet Lane  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement               | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL   | NBT   | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|------|-------|------|------|------|-------|-------|------|------|-------|------|
| Lane Configurations    | ↖     | ↑    | ↗     |      | ↖    |      | ↖     | ↑↑    | ↗    | ↖    | ↑↗    |      |
| Traffic Volume (vph)   | 101   | 43   | 208   | 0    | 48   | 53   | 173   | 1822  | 120  | 35   | 2113  | 1    |
| Future Volume (vph)    | 101   | 43   | 208   | 0    | 48   | 53   | 173   | 1822  | 120  | 35   | 2113  | 1    |
| 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  |      | 5.0   | 5.0   | 5.0  | 5.0  | 5.0   |      |
| Lane Util. Factor      | 1.00  | 1.00 | 1.00  |      | 1.00 |      | 1.00  | 0.95  | 1.00 | 1.00 | 0.95  |      |
| Frpb, ped/bikes        | 1.00  | 1.00 | 0.96  |      | 0.97 |      | 1.00  | 1.00  | 0.95 | 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  |      |
| Frt                    | 1.00  | 1.00 | 0.85  |      | 0.94 |      | 1.00  | 1.00  | 0.85 | 1.00 | 1.00  |      |
| Flt Protected          | 0.95  | 1.00 | 1.00  |      | 1.00 |      | 0.95  | 1.00  | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (prot)      | 1798  | 1900 | 1540  |      | 1723 |      | 1787  | 3574  | 1529 | 1805 | 3539  |      |
| Flt Permitted          | 0.33  | 1.00 | 1.00  |      | 1.00 |      | 0.05  | 1.00  | 1.00 | 0.06 | 1.00  |      |
| Satd. Flow (perm)      | 634   | 1900 | 1540  |      | 1723 |      | 93    | 3574  | 1529 | 108  | 3539  |      |
| Peak-hour factor, PHF  | 0.76  | 0.47 | 0.86  | 0.69 | 0.75 | 0.91 | 0.84  | 0.90  | 0.76 | 0.72 | 0.96  | 0.60 |
| Adj. Flow (vph)        | 133   | 91   | 242   | 0    | 64   | 58   | 206   | 2024  | 158  | 49   | 2201  | 2    |
| RTOR Reduction (vph)   | 0     | 0    | 57    | 0    | 26   | 0    | 0     | 0     | 21   | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 133   | 91   | 185   | 0    | 96   | 0    | 206   | 2024  | 137  | 49   | 2203  | 0    |
| Confl. Peds. (#/hr)    | 12    |      | 12    | 12   |      |      | 12    | 8     | 9    | 9    |       | 8    |
| Confl. Bikes (#/hr)    |       |      | 6     |      |      |      | 5     |       | 12   |      |       | 4    |
| Heavy Vehicles (%)     | 0%    | 0%   | 1%    | 0%   | 0%   | 0%   | 1%    | 1%    | 0%   | 0%   | 2%    | 0%   |
| Turn Type              | pm+pt | NA   | Perm  |      | NA   |      | pm+pt | NA    | Perm | Perm | NA    |      |
| Protected Phases       | 7     | 4    |       |      | 8    |      | 5     | 2     |      |      | 6     |      |
| Permitted Phases       | 4     |      | 4     |      |      |      | 2     |       | 2    | 6    |       |      |
| Actuated Green, G (s)  | 28.7  | 28.7 | 28.7  |      | 11.7 |      | 95.3  | 95.3  | 95.3 | 76.0 | 76.0  |      |
| Effective Green, g (s) | 28.7  | 28.7 | 28.7  |      | 11.7 |      | 95.3  | 95.3  | 95.3 | 76.0 | 76.0  |      |
| Actuated g/C Ratio     | 0.21  | 0.21 | 0.21  |      | 0.09 |      | 0.71  | 0.71  | 0.71 | 0.56 | 0.56  |      |
| Clearance Time (s)     | 6.0   | 6.0  | 6.0   |      | 6.0  |      | 5.0   | 5.0   | 5.0  | 5.0  | 5.0   |      |
| Vehicle Extension (s)  | 2.0   | 2.0  | 2.0   |      | 2.0  |      | 1.0   | 1.0   | 1.0  | 1.0  | 1.0   |      |
| Lane Grp Cap (vph)     | 229   | 403  | 327   |      | 149  |      | 245   | 2522  | 1079 | 60   | 1992  |      |
| v/s Ratio Prot         | 0.05  | 0.05 |       |      | 0.06 |      | 0.09  | c0.57 |      |      | c0.62 |      |
| v/s Ratio Perm         | c0.08 |      | c0.12 |      |      |      | 0.50  |       | 0.09 | 0.45 |       |      |
| v/c Ratio              | 0.58  | 0.23 | 0.57  |      | 0.64 |      | 0.84  | 0.80  | 0.13 | 0.82 | 1.11  |      |
| Uniform Delay, d1      | 45.5  | 44.0 | 47.6  |      | 59.6 |      | 46.1  | 13.5  | 6.4  | 23.9 | 29.5  |      |
| Progression Factor     | 1.00  | 1.00 | 1.00  |      | 1.00 |      | 0.82  | 1.47  | 1.67 | 1.02 | 0.91  |      |
| Incremental Delay, d2  | 2.4   | 0.1  | 1.3   |      | 6.9  |      | 15.7  | 1.4   | 0.1  | 47.2 | 52.4  |      |
| Delay (s)              | 47.9  | 44.1 | 48.9  |      | 66.5 |      | 53.6  | 21.2  | 10.8 | 71.5 | 79.3  |      |
| Level of Service       | D     | D    | D     |      | E    |      | D     | C     | B    | E    | E     |      |
| Approach Delay (s)     |       | 47.7 |       |      | 66.5 |      |       | 23.3  |      |      | 79.2  |      |
| Approach LOS           |       | D    |       |      | E    |      |       | C     |      |      | E     |      |

Intersection Summary

|                                   |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 50.5   | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio | 1.01   |                           |      |
| Actuated Cycle Length (s)         | 135.0  | Sum of lost time (s)      | 22.0 |
| Intersection Capacity Utilization | 102.2% | ICU Level of Service      | G    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |



| Lane Group              | WBR  | NBT  | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 762  | 1806 | 32   | 708   | 2080 |
| v/c Ratio               | 0.80 | 0.88 | 0.03 | 1.19  | 0.90 |
| Control Delay           | 46.8 | 23.2 | 1.2  | 147.1 | 8.1  |
| Queue Delay             | 0.0  | 1.6  | 0.0  | 0.0   | 7.6  |
| Total Delay             | 46.8 | 24.8 | 1.2  | 147.1 | 15.6 |
| Queue Length 50th (ft)  | 333  | 865  | 2    | ~762  | 146  |
| Queue Length 95th (ft)  | 422  | 920  | m1   | m#698 | m141 |
| Internal Link Dist (ft) |      | 324  |      |       | 498  |
| Turn Bay Length (ft)    |      |      |      | 100   |      |
| Base Capacity (vph)     | 955  | 2064 | 922  | 595   | 2306 |
| Starvation Cap Reductn  | 0    | 124  | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0     | 215  |
| Storage Cap Reductn     | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.80 | 0.93 | 0.03 | 1.19  | 0.99 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

3: S Lamar Blvd & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

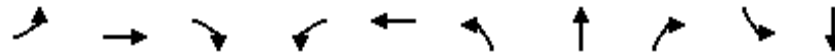


| Movement                          | WBL  | WBR   | NBT    | NBR  | SBL                       | SBT   |
|-----------------------------------|------|-------|--------|------|---------------------------|-------|
| Lane Configurations               |      | ↗↗    | ↕↕     | ↗    | ↘                         | ↕↕    |
| Traffic Volume (vph)              | 0    | 701   | 1625   | 24   | 609                       | 1914  |
| Future Volume (vph)               | 0    | 701   | 1625   | 24   | 609                       | 1914  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900   | 1900 | 1900                      | 1900  |
| Total Lost time (s)               |      | 6.0   | 6.0    | 6.0  | 6.0                       | 6.0   |
| Lane Util. Factor                 |      | 0.88  | 0.95   | 1.00 | 1.00                      | 0.95  |
| Frbp, ped/bikes                   |      | 1.00  | 1.00   | 0.98 | 1.00                      | 1.00  |
| Flpb, ped/bikes                   |      | 1.00  | 1.00   | 1.00 | 1.00                      | 1.00  |
| Frt                               |      | 0.85  | 1.00   | 0.85 | 1.00                      | 1.00  |
| Flt Protected                     |      | 1.00  | 1.00   | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |      | 2814  | 3574   | 1580 | 1787                      | 3539  |
| Flt Permitted                     |      | 1.00  | 1.00   | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |      | 2814  | 3574   | 1580 | 1787                      | 3539  |
| Peak-hour factor, PHF             | 0.92 | 0.92  | 0.90   | 0.75 | 0.86                      | 0.92  |
| Adj. Flow (vph)                   | 0    | 762   | 1806   | 32   | 708                       | 2080  |
| RTOR Reduction (vph)              | 0    | 17    | 0      | 10   | 0                         | 0     |
| Lane Group Flow (vph)             | 0    | 745   | 1806   | 22   | 708                       | 2080  |
| Confl. Peds. (#/hr)               |      | 7     |        | 6    | 6                         |       |
| Confl. Bikes (#/hr)               |      | 1     |        | 9    |                           |       |
| Heavy Vehicles (%)                | 2%   | 1%    | 1%     | 0%   | 1%                        | 2%    |
| Turn Type                         |      | pt+ov | NA     | Perm | Prot                      | NA    |
| Protected Phases                  |      | 1 4   | 2 3    |      | 1 4                       | 1 2   |
| Permitted Phases                  |      |       |        | 2 3  |                           |       |
| Actuated Green, G (s)             |      | 45.0  | 78.0   | 78.0 | 45.0                      | 88.0  |
| Effective Green, g (s)            |      | 45.0  | 78.0   | 78.0 | 45.0                      | 88.0  |
| Actuated g/C Ratio                |      | 0.33  | 0.58   | 0.58 | 0.33                      | 0.65  |
| Clearance Time (s)                |      |       |        |      |                           |       |
| Vehicle Extension (s)             |      |       |        |      |                           |       |
| Lane Grp Cap (vph)                |      | 938   | 2064   | 912  | 595                       | 2306  |
| v/s Ratio Prot                    |      | 0.26  | c0.51  |      | c0.40                     | c0.59 |
| v/s Ratio Perm                    |      |       |        | 0.01 |                           |       |
| v/c Ratio                         |      | 0.79  | 0.88   | 0.02 | 1.19                      | 0.90  |
| Uniform Delay, d1                 |      | 40.8  | 24.3   | 12.2 | 45.0                      | 19.9  |
| Progression Factor                |      | 1.00  | 0.77   | 0.19 | 1.49                      | 0.25  |
| Incremental Delay, d2             |      | 4.4   | 3.2    | 0.0  | 92.2                      | 2.6   |
| Delay (s)                         |      | 45.2  | 21.8   | 2.4  | 159.3                     | 7.6   |
| Level of Service                  |      | D     | C      | A    | F                         | A     |
| Approach Delay (s)                | 45.2 |       | 21.5   |      |                           | 46.1  |
| Approach LOS                      | D    |       | C      |      |                           | D     |
| <b>Intersection Summary</b>       |      |       |        |      |                           |       |
| HCM 2000 Control Delay            |      |       | 37.6   |      | HCM 2000 Level of Service | D     |
| HCM 2000 Volume to Capacity ratio |      |       | 1.13   |      |                           |       |
| Actuated Cycle Length (s)         |      |       | 135.0  |      | Sum of lost time (s)      | 24.0  |
| Intersection Capacity Utilization |      |       | 105.3% |      | ICU Level of Service      | G     |
| Analysis Period (min)             |      |       | 15     |      |                           |       |
| c Critical Lane Group             |      |       |        |      |                           |       |



4: S Lamar Blvd & Barton Skyway/Lightsey Road  
Queues

Brodie Oaks Center TIA  
Imps-Phase 1-2026 Site+Forecasted PM



| Lane Group              | EBL  | EBT  | EBR  | WBL  | WBT  | NBL   | NBT  | NBR  | SBL   | SBT   |
|-------------------------|------|------|------|------|------|-------|------|------|-------|-------|
| Lane Group Flow (vph)   | 117  | 176  | 220  | 96   | 176  | 226   | 1670 | 76   | 101   | 2041  |
| v/c Ratio               | 0.50 | 0.48 | 0.51 | 0.53 | 0.26 | 1.54  | 0.72 | 0.07 | 2.66  | 0.98  |
| Control Delay           | 57.2 | 53.6 | 19.4 | 60.8 | 43.6 | 305.4 | 4.0  | 0.1  | 799.8 | 16.1  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.8  | 0.0  | 0.0   | 9.8   |
| Total Delay             | 57.2 | 53.6 | 19.4 | 60.8 | 43.6 | 305.4 | 4.8  | 0.1  | 799.8 | 25.9  |
| Queue Length 50th (ft)  | 93   | 139  | 46   | 76   | 63   | ~273  | 33   | 1    | ~151  | 413   |
| Queue Length 95th (ft)  | 151  | 183  | 92   | 139  | 93   | m#328 | 34   | m0   | m#174 | #1101 |
| Internal Link Dist (ft) |      | 257  |      |      | 238  |       | 436  |      |       | 324   |
| Turn Bay Length (ft)    | 90   |      |      | 100  |      | 125   |      | 160  | 100   |       |
| Base Capacity (vph)     | 233  | 365  | 431  | 182  | 688  | 147   | 2329 | 1039 | 38    | 2086  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 86    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0     | 331  | 0    | 0     | 0     |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0     |
| Reduced v/c Ratio       | 0.50 | 0.48 | 0.51 | 0.53 | 0.26 | 1.54  | 0.84 | 0.07 | 2.66  | 1.02  |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

| Movement                          | EBL  | EBT  | EBR    | WBL   | WBT  | WBR  | NBL                       | NBT   | NBR  | SBL   | SBT   | SBR  |
|-----------------------------------|------|------|--------|-------|------|------|---------------------------|-------|------|-------|-------|------|
| Lane Configurations               |      |      |        |       |      |      |                           |       |      |       |       |      |
| Traffic Volume (vph)              | 101  | 137  | 174    | 87    | 127  | 16   | 199                       | 1503  | 67   | 76    | 1765  | 60   |
| Future Volume (vph)               | 101  | 137  | 174    | 87    | 127  | 16   | 199                       | 1503  | 67   | 76    | 1765  | 60   |
| 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   | 6.0  | 6.0   | 6.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00 | 1.00   | 1.00  | 0.95 |      | 1.00                      | 0.95  | 1.00 | 1.00  | 0.95  |      |
| Frpb, ped/bikes                   | 1.00 | 1.00 | 0.98   | 1.00  | 1.00 |      | 1.00                      | 1.00  | 0.96 | 1.00  | 1.00  |      |
| Flpb, ped/bikes                   | 1.00 | 1.00 | 1.00   | 0.99  | 1.00 |      | 1.00                      | 1.00  | 1.00 | 1.00  | 1.00  |      |
| Frt                               | 1.00 | 1.00 | 0.85   | 1.00  | 0.98 |      | 1.00                      | 1.00  | 0.85 | 1.00  | 0.99  |      |
| Flt Protected                     | 0.95 | 1.00 | 1.00   | 0.95  | 1.00 |      | 0.95                      | 1.00  | 1.00 | 0.95  | 1.00  |      |
| Satd. Flow (prot)                 | 1798 | 1900 | 1579   | 1795  | 3518 |      | 1805                      | 3574  | 1555 | 1736  | 3518  |      |
| Flt Permitted                     | 0.64 | 1.00 | 1.00   | 0.50  | 1.00 |      | 0.95                      | 1.00  | 1.00 | 0.95  | 1.00  |      |
| Satd. Flow (perm)                 | 1213 | 1900 | 1579   | 948   | 3518 |      | 1805                      | 3574  | 1555 | 1736  | 3518  |      |
| Peak-hour factor, PHF             | 0.86 | 0.78 | 0.79   | 0.91  | 0.85 | 0.60 | 0.88                      | 0.90  | 0.88 | 0.75  | 0.90  | 0.75 |
| Adj. Flow (vph)                   | 117  | 176  | 220    | 96    | 149  | 27   | 226                       | 1670  | 76   | 101   | 1961  | 80   |
| RTOR Reduction (vph)              | 0    | 0    | 128    | 0     | 11   | 0    | 0                         | 0     | 25   | 0     | 2     | 0    |
| Lane Group Flow (vph)             | 117  | 176  | 92     | 96    | 165  | 0    | 226                       | 1670  | 51   | 101   | 2039  | 0    |
| Confl. Peds. (#/hr)               | 3    |      | 5      | 5     |      | 3    | 5                         |       | 18   | 18    |       | 5    |
| Confl. Bikes (#/hr)               |      |      | 2      |       |      |      |                           |       | 7    |       |       | 8    |
| Heavy Vehicles (%)                | 0%   | 0%   | 0%     | 0%    | 0%   | 0%   | 0%                        | 1%    | 0%   | 4%    | 2%    | 0%   |
| Turn Type                         | Perm | NA   | Perm   | Perm  | NA   |      | Prot                      | NA    | Perm | Prot  | NA    |      |
| Protected Phases                  |      | 8    |        |       | 8    |      | 5                         | 5 6   |      | 7     | 6 7   |      |
| Permitted Phases                  | 8    |      | 8      | 8     |      |      |                           |       | 5 6  |       |       |      |
| Actuated Green, G (s)             | 26.0 | 26.0 | 26.0   | 26.0  | 26.0 |      | 11.0                      | 88.0  | 88.0 | 3.0   | 80.0  |      |
| Effective Green, g (s)            | 26.0 | 26.0 | 26.0   | 26.0  | 26.0 |      | 11.0                      | 88.0  | 88.0 | 3.0   | 80.0  |      |
| Actuated g/C Ratio                | 0.19 | 0.19 | 0.19   | 0.19  | 0.19 |      | 0.08                      | 0.65  | 0.65 | 0.02  | 0.59  |      |
| 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  |      | 1.0                       |       |      | 1.0   |       |      |
| Lane Grp Cap (vph)                | 233  | 365  | 304    | 182   | 677  |      | 147                       | 2329  | 1013 | 38    | 2084  |      |
| v/s Ratio Prot                    |      | 0.09 |        |       | 0.05 |      | c0.13                     | c0.47 |      | c0.06 | c0.58 |      |
| v/s Ratio Perm                    | 0.10 |      | 0.06   | c0.10 |      |      |                           |       | 0.03 |       |       |      |
| v/c Ratio                         | 0.50 | 0.48 | 0.30   | 0.53  | 0.24 |      | 1.54                      | 0.72  | 0.05 | 2.66  | 0.98  |      |
| Uniform Delay, d1                 | 48.7 | 48.5 | 46.7   | 49.0  | 46.2 |      | 62.0                      | 15.4  | 8.5  | 66.0  | 26.7  |      |
| Progression Factor                | 1.00 | 1.00 | 1.00   | 1.00  | 1.00 |      | 1.29                      | 0.20  | 0.01 | 0.69  | 0.20  |      |
| Incremental Delay, d2             | 7.5  | 4.5  | 2.6    | 10.5  | 0.9  |      | 258.3                     | 1.0   | 0.0  | 779.2 | 8.8   |      |
| Delay (s)                         | 56.3 | 53.0 | 49.3   | 59.5  | 47.0 |      | 338.1                     | 4.0   | 0.1  | 824.7 | 14.1  |      |
| Level of Service                  | E    | D    | D      | E     | D    |      | F                         | A     | A    | F     | B     |      |
| Approach Delay (s)                |      | 52.2 |        |       | 51.4 |      |                           | 42.1  |      |       | 52.3  |      |
| Approach LOS                      |      | D    |        |       | D    |      |                           | D     |      |       | D     |      |
| <b>Intersection Summary</b>       |      |      |        |       |      |      |                           |       |      |       |       |      |
| HCM 2000 Control Delay            |      |      | 48.2   |       |      |      | HCM 2000 Level of Service |       |      | D     |       |      |
| HCM 2000 Volume to Capacity ratio |      |      | 1.02   |       |      |      |                           |       |      |       |       |      |
| Actuated Cycle Length (s)         |      |      | 135.0  |       |      |      | Sum of lost time (s)      |       |      | 24.0  |       |      |
| Intersection Capacity Utilization |      |      | 114.2% |       |      |      | ICU Level of Service      |       |      | H     |       |      |
| Analysis Period (min)             |      |      | 15     |       |      |      |                           |       |      |       |       |      |
| c Critical Lane Group             |      |      |        |       |      |      |                           |       |      |       |       |      |



| Lane Group              | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 115  | 155  | 13   | 224  | 37   | 1713 | 155  | 246  | 1848 |
| v/c Ratio               | 0.31 | 0.53 | 0.03 | 0.43 | 0.45 | 0.92 | 0.19 | 0.88 | 0.75 |
| Control Delay           | 39.6 | 54.6 | 43.0 | 8.3  | 41.4 | 38.8 | 7.1  | 71.1 | 4.3  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 39.6 | 54.6 | 43.0 | 8.3  | 41.4 | 38.8 | 7.1  | 71.1 | 4.3  |
| Queue Length 50th (ft)  | 72   | 124  | 9    | 0    | 18   | 657  | 22   | 167  | 81   |
| Queue Length 95th (ft)  | 79   | 166  | 19   | 42   | 53   | #931 | 58   | m168 | m98  |
| Internal Link Dist (ft) | 270  |      | 212  |      |      | 208  |      |      | 469  |
| Turn Bay Length (ft)    |      | 120  |      | 100  | 95   |      |      | 125  |      |
| Base Capacity (vph)     | 376  | 291  | 448  | 521  | 83   | 1865 | 831  | 370  | 2562 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.31 | 0.53 | 0.03 | 0.43 | 0.45 | 0.92 | 0.19 | 0.66 | 0.72 |

**Intersection Summary**























# 95th percentile volume exceeds capacity, queue may be longer.

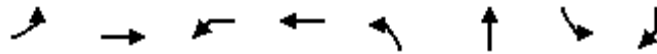
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

5: S Lamar Blvd & Private Driveway/Panther Trail  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 37  | 12  | 33  | 118   | 8   | 179   | 29   | 1627  | 133   | 214   | 1753  | 15  |
| Future Volume (veh/h)        | 37  | 12  | 33  | 118   | 8   | 179   | 29   | 1627  | 133   | 214   | 1753  | 15  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.99  |   | 0.97  | 0.99  |   | 0.97  | 1.00   |   | 0.97  | 1.00  |   | 0.97  |
| 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  |
| Adj Sat Flow, veh/h/ln       | 1900  | 1900  | 1900  | 1900  | 1900  | 1810  | 1900   | 1881  | 1863  | 1827  | 1881  | 1900  |
| Adj Flow Rate, veh/h         | 53  | 20  | 42  | 155   | 13  | 224   | 37   | 1713  | 155   | 246   | 1826  | 22  |
| Adj No. of Lanes             | 0   | 1   | 0   | 1   | 1   | 1   | 1  | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 0.70  | 0.60  | 0.78  | 0.76  | 0.60  | 0.80  | 0.79   | 0.95  | 0.86  | 0.87  | 0.96  | 0.69  |
| Percent Heavy Veh, %         | 0   | 0   | 0   | 0   | 0   | 5   | 0  | 1   | 2   | 4   | 1   | 0   |
| Cap, veh/h                   | 160   | 65  | 107   | 316   | 394   | 308   | 162  | 2093  | 898   | 269   | 2598  | 31  |
| Arrive On Green              | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.59   | 0.59  | 0.59  | 0.10  | 0.72  | 0.72  |
| Sat Flow, veh/h              | 582   | 313   | 515   | 1345  | 1900  | 1484  | 254  | 3574  | 1533  | 1740  | 3616  | 43  |
| Grp Volume(v), veh/h         | 115   | 0   | 0   | 155   | 13  | 224   | 37   | 1713  | 155   | 246   | 901   | 947   |
| Grp Sat Flow(s),veh/h/ln     | 1410  | 0   | 0   | 1345  | 1900  | 1484  | 254  | 1787  | 1533  | 1740  | 1787  | 1872  |
| Q Serve(g_s), s              | 6.7   | 0.0   | 0.0   | 6.8   | 0.7   | 19.0  | 13.1   | 51.5  | 6.3   | 10.9  | 38.6  | 38.9  |
| Cycle Q Clear(g_c), s        | 9.0   | 0.0   | 0.0   | 15.8  | 0.7   | 19.0  | 34.1   | 51.5  | 6.3   | 10.9  | 38.6  | 38.9  |
| Prop In Lane                 | 0.46  |   | 0.37  | 1.00  |   | 1.00  | 1.00   |   | 1.00  | 1.00  |   | 0.02  |
| Lane Grp Cap(c), veh/h       | 331   | 0   | 0   | 316   | 394   | 308   | 162  | 2093  | 898   | 269   | 1284  | 1345  |
| V/C Ratio(X)                 | 0.35  | 0.00  | 0.00  | 0.49  | 0.03  | 0.73  | 0.23   | 0.82  | 0.17  | 0.91  | 0.70  | 0.70  |
| Avail Cap(c_a), veh/h        | 331   | 0   | 0   | 316   | 394   | 308   | 162  | 2093  | 898   | 424   | 1284  | 1345  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 45.8  | 0.0   | 0.0   | 49.0  | 42.7  | 49.9  | 25.7   | 22.3  | 12.9  | 38.1  | 10.8  | 10.8  |
| Incr Delay (d2), s/veh       | 2.9   | 0.0   | 0.0   | 5.4   | 0.2   | 14.0  | 3.2  | 3.7   | 0.4   | 12.3  | 3.2   | 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   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 3.9   | 0.0   | 0.0   | 5.7   | 0.4   | 9.0   | 1.1  | 26.3  | 2.8   | 9.9   | 19.9  | 20.9  |
| LnGrp Delay(d),s/veh         | 48.6  | 0.0   | 0.0   | 54.4  | 42.9  | 64.0  | 28.9   | 26.0  | 13.3  | 50.3  | 14.0  | 13.9  |
| LnGrp LOS                    | D   |   |   | D   | D   | E   | C  | C   | B   | D   | B   | B   |
| Approach Vol, veh/h          |   | 115   |   |   | 392   |   |  | 1905  |   |   | 2094  |   |
| Approach Delay, s/veh        |   | 48.6  |   |   | 59.5  |   |  | 25.0  |   |   | 18.2  |   |
| Approach LOS                 |   | D   |   |   | E   |   |  | C   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 17.9  | 84.1  |   | 33.0  |   | 102.0   |  | 33.0  |   |   |   |   |
| Change Period (Y+Rc), s      | 5.0   | 5.0   |   | 5.0   |   | 5.0   |  | 5.0   |   |   |   |   |
| Max Green Setting (Gmax), s  | 25.0  | 67.0  |   | 28.0  |   | 97.0  |  | 28.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 12.9  | 53.5  |   | 11.0  |   | 40.9  |  | 21.0  |   |   |   |   |
| Green Ext Time (p_c), s      | 0.1   | 5.3   |   | 0.2   |   | 4.9   |  | 0.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          | 25.5  |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 | C   |   |   |   |   |   |  |   |   |   |   |   |



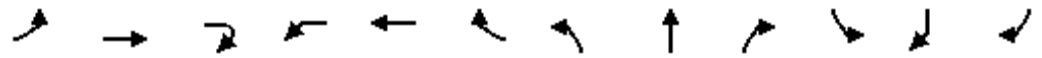
| Lane Group              | EBL   | EBT  | WBL  | WBT  | NBL   | NBT   | SBL  | SBR  |
|-------------------------|-------|------|------|------|-------|-------|------|------|
| Lane Group Flow (vph)   | 352   | 355  | 165  | 159  | 534   | 1984  | 187  | 1737 |
| v/c Ratio               | 1.25  | 0.84 | 0.95 | 0.46 | 2.34  | 1.18  | 0.41 | 0.80 |
| Control Delay           | 177.5 | 41.6 | 97.9 | 17.3 | 643.2 | 126.8 | 43.6 | 27.4 |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  |
| Total Delay             | 177.5 | 41.6 | 97.9 | 17.3 | 643.2 | 126.8 | 43.6 | 27.4 |
| Queue Length 50th (ft)  | ~249  | 135  | 112  | 20   | ~378  | ~734  | 132  | 426  |
| Queue Length 95th (ft)  | #369  | 153  | #229 | 11   | #307  | #769  | 194  | 499  |
| Internal Link Dist (ft) |       | 165  |      | 155  |       | 606   |      |      |
| Turn Bay Length (ft)    |       |      |      |      |       |       | 160  |      |
| Base Capacity (vph)     | 281   | 423  | 174  | 342  | 228   | 1680  | 458  | 2167 |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.25  | 0.84 | 0.95 | 0.46 | 2.34  | 1.18  | 0.41 | 0.80 |

**Intersection Summary**

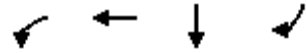
~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Drive/Boys Center Way  
 HCM Signalized Intersection Capacity Analysis  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement                          | EBL   | EBT   | EBR2   | WBL   | WBT  | WBR  | NBL                       | NBT   | NBR  | SBL  | SBR   | SBR2 |
|-----------------------------------|-------|-------|--------|-------|------|------|---------------------------|-------|------|------|-------|------|
| Lane Configurations               | ↖     | ↗     |        | ↖     | ↗    |      | ↖↗                        | ↑↑↑   |      | ↖    | ↗↗↗   |      |
| Traffic Volume (vph)              | 289   | 36    | 265    | 157   | 15   | 90   | 331                       | 1566  | 98   | 161  | 1517  | 71   |
| Future Volume (vph)               | 289   | 36    | 265    | 157   | 15   | 90   | 331                       | 1566  | 98   | 161  | 1517  | 71   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900   | 1900  | 1900 | 1900 | 1900                      | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 6.5   | 6.5   |        | 6.5   | 6.5  |      | 7.5                       | 5.5   |      | 7.0  | 5.5   |      |
| Lane Util. Factor                 | 1.00  | 1.00  |        | 1.00  | 1.00 |      | 0.97                      | 0.91  |      | 1.00 | 0.64  |      |
| Frbp, ped/bikes                   | 1.00  | 0.99  |        | 1.00  | 0.99 |      | 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  |      |
| Frt                               | 1.00  | 0.87  |        | 1.00  | 0.88 |      | 1.00                      | 0.99  |      | 1.00 | 0.85  |      |
| Flt Protected                     | 0.95  | 1.00  |        | 0.95  | 1.00 |      | 0.95                      | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 1804  | 1633  |        | 1787  | 1613 |      | 3502                      | 5114  |      | 1805 | 4096  |      |
| Flt Permitted                     | 0.45  | 1.00  |        | 0.22  | 1.00 |      | 0.95                      | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 | 863   | 1633  |        | 407   | 1613 |      | 3502                      | 5114  |      | 1805 | 4096  |      |
| Peak-hour factor, PHF             | 0.82  | 0.72  | 0.87   | 0.95  | 0.55 | 0.68 | 0.62                      | 0.86  | 0.60 | 0.86 | 0.93  | 0.67 |
| Adj. Flow (vph)                   | 352   | 50    | 305    | 165   | 27   | 132  | 534                       | 1821  | 163  | 187  | 1631  | 106  |
| RTOR Reduction (vph)              | 0     | 166   | 0      | 0     | 113  | 0    | 0                         | 8     | 0    | 0    | 72    | 0    |
| Lane Group Flow (vph)             | 352   | 189   | 0      | 165   | 46   | 0    | 534                       | 1976  | 0    | 187  | 1665  | 0    |
| Confl. Peds. (#/hr)               | 2     |       | 1      | 1     |      | 2    | 10                        |       |      |      |       | 10   |
| Confl. Bikes (#/hr)               |       |       | 1      |       |      | 2    |                           |       | 2    |      |       | 1    |
| Heavy Vehicles (%)                | 0%    | 0%    | 0%     | 1%    | 0%   | 2%   | 0%                        | 0%    | 0%   | 0%   | 1%    | 0%   |
| Turn Type                         | pm+pt | NA    |        | pm+pt | NA   |      | Prot                      | NA    |      | Prot | Prot  |      |
| Protected Phases                  | 7     | 4     |        | 3     | 8    |      | 5                         | 2     |      | 1    | 6     |      |
| Permitted Phases                  | 4     |       |        | 8     |      |      |                           |       |      |      |       |      |
| Actuated Green, G (s)             | 31.0  | 20.5  |        | 27.0  | 18.5 |      | 8.5                       | 42.5  |      | 33.0 | 66.5  |      |
| Effective Green, g (s)            | 31.0  | 20.5  |        | 27.0  | 18.5 |      | 8.5                       | 42.5  |      | 33.0 | 66.5  |      |
| Actuated g/C Ratio                | 0.24  | 0.16  |        | 0.21  | 0.14 |      | 0.07                      | 0.33  |      | 0.25 | 0.51  |      |
| Clearance Time (s)                | 6.5   | 6.5   |        | 6.5   | 6.5  |      | 7.5                       | 5.5   |      | 7.0  | 5.5   |      |
| Vehicle Extension (s)             | 1.0   | 3.0   |        | 3.0   | 3.0  |      | 3.0                       | 3.0   |      | 2.0  | 2.0   |      |
| Lane Grp Cap (vph)                | 281   | 257   |        | 174   | 229  |      | 228                       | 1671  |      | 458  | 2095  |      |
| v/s Ratio Prot                    | c0.10 | 0.12  |        | 0.06  | 0.03 |      | c0.15                     | c0.39 |      | 0.10 | c0.41 |      |
| v/s Ratio Perm                    | c0.20 |       |        | 0.13  |      |      |                           |       |      |      |       |      |
| v/c Ratio                         | 1.25  | 0.74  |        | 0.95  | 0.20 |      | 2.34                      | 1.18  |      | 0.41 | 0.79  |      |
| Uniform Delay, d1                 | 48.2  | 52.2  |        | 48.2  | 49.2 |      | 60.8                      | 43.8  |      | 40.4 | 26.1  |      |
| Progression Factor                | 1.00  | 1.00  |        | 1.00  | 1.00 |      | 1.00                      | 1.00  |      | 1.00 | 1.00  |      |
| Incremental Delay, d2             | 139.6 | 17.0  |        | 52.6  | 2.0  |      | 617.4                     | 88.6  |      | 2.7  | 3.2   |      |
| Delay (s)                         | 187.8 | 69.2  |        | 100.8 | 51.2 |      | 678.2                     | 132.3 |      | 43.1 | 29.4  |      |
| Level of Service                  | F     | E     |        | F     | D    |      | F                         | F     |      | D    | C     |      |
| Approach Delay (s)                |       | 128.2 |        |       | 76.4 |      |                           | 248.1 |      |      |       |      |
| Approach LOS                      |       | F     |        |       | E    |      |                           | F     |      |      |       |      |
| <b>Intersection Summary</b>       |       |       |        |       |      |      |                           |       |      |      |       |      |
| HCM 2000 Control Delay            |       |       | 146.0  |       |      |      | HCM 2000 Level of Service |       |      |      | F     |      |
| HCM 2000 Volume to Capacity ratio |       |       | 1.18   |       |      |      |                           |       |      |      |       |      |
| Actuated Cycle Length (s)         |       |       | 130.0  |       |      |      | Sum of lost time (s)      |       |      | 26.0 |       |      |
| Intersection Capacity Utilization |       |       | 116.1% |       |      |      | ICU Level of Service      |       |      | H    |       |      |
| Analysis Period (min)             |       |       | 15     |       |      |      |                           |       |      |      |       |      |
| c Critical Lane Group             |       |       |        |       |      |      |                           |       |      |      |       |      |



| Lane Group              | WBL  | WBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 618  | 1286 | 1440 | 340  |
| v/c Ratio               | 0.65 | 0.66 | 0.65 | 0.21 |
| Control Delay           | 8.0  | 9.0  | 38.6 | 0.3  |
| Queue Delay             | 0.0  | 0.0  | 1.0  | 0.0  |
| Total Delay             | 8.0  | 9.0  | 39.6 | 0.3  |
| Queue Length 50th (ft)  | 8    | 540  | 307  | 0    |
| Queue Length 95th (ft)  | m524 | 554  | 338  | 0    |
| Internal Link Dist (ft) |      | 23   | 453  |      |
| Turn Bay Length (ft)    |      |      |      |      |
| Base Capacity (vph)     | 954  | 1938 | 2230 | 1595 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 6    | 4    | 487  | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.65 | 0.66 | 0.83 | 0.21 |

**Intersection Summary**

m Volume for 95th percentile queue is metered by upstream signal.

7: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement                          | EBL  | EBT  | EBR   | WBL     | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR   |  |
|-----------------------------------|------|------|-------|---------|---------------------------|------|------|------|------|------|-------|-------|--|
| Lane Configurations               |      |      |       | ↖       | ↕                         |      |      |      |      |      | ↑↑↑   | ↗     |  |
| Traffic Volume (vph)              | 0    | 0    | 0     | 626     | 947                       | 0    | 0    | 0    | 0    | 0    | 1267  | 309   |  |
| Future Volume (vph)               | 0    | 0    | 0     | 626     | 947                       | 0    | 0    | 0    | 0    | 0    | 1267  | 309   |  |
| 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   | 4.0   |  |
| Lane Util. Factor                 |      |      |       | 0.91    | 0.91                      |      |      |      |      |      | 0.86  | 1.00  |  |
| Frbp, ped/bikes                   |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.99  |  |
| Flpb, ped/bikes                   |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Frt                               |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.85  |  |
| Flt Protected                     |      |      |       | 0.95    | 0.99                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (prot)                 |      |      |       | 1626    | 3375                      |      |      |      |      |      | 6408  | 1595  |  |
| Flt Permitted                     |      |      |       | 0.95    | 0.99                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (perm)                 |      |      |       | 1626    | 3375                      |      |      |      |      |      | 6408  | 1595  |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92  | 0.82    | 0.83                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.88  | 0.91  |  |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 763     | 1141                      | 0    | 0    | 0    | 0    | 0    | 1440  | 340   |  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 44      | 44                        | 0    | 0    | 0    | 0    | 0    | 0     | 0     |  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 574     | 1242                      | 0    | 0    | 0    | 0    | 0    | 1440  | 340   |  |
| Confl. Bikes (#/hr)               |      |      |       |         |                           |      |      |      |      |      |       | 1     |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%    | 1%      | 2%                        | 0%   | 2%   | 2%   | 2%   | 2%   | 2%    | 0%    |  |
| Turn Type                         |      |      |       | custom  | NA                        |      |      |      |      |      | NA    | Free  |  |
| Protected Phases                  |      |      |       | 1 2 4 8 | 1 2 4 8                   |      |      |      |      |      | 5 6 7 |       |  |
| Permitted Phases                  |      |      |       | 3       | 3                         |      |      |      |      |      |       | Free  |  |
| Actuated Green, G (s)             |      |      |       | 68.0    | 68.0                      |      |      |      |      |      | 51.0  | 135.0 |  |
| Effective Green, g (s)            |      |      |       | 68.0    | 68.0                      |      |      |      |      |      | 51.0  | 135.0 |  |
| Actuated g/C Ratio                |      |      |       | 0.50    | 0.50                      |      |      |      |      |      | 0.38  | 1.00  |  |
| Clearance Time (s)                |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| Vehicle Extension (s)             |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| Lane Grp Cap (vph)                |      |      |       | 891     | 1850                      |      |      |      |      |      | 2420  | 1595  |  |
| v/s Ratio Prot                    |      |      |       | 0.27    | c0.28                     |      |      |      |      |      | c0.22 |       |  |
| v/s Ratio Perm                    |      |      |       | 0.08    | 0.08                      |      |      |      |      |      |       | 0.21  |  |
| v/c Ratio                         |      |      |       | 0.64    | 0.67                      |      |      |      |      |      | 0.60  | 0.21  |  |
| Uniform Delay, d1                 |      |      |       | 24.6    | 25.1                      |      |      |      |      |      | 33.7  | 0.0   |  |
| Progression Factor                |      |      |       | 0.35    | 0.42                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Incremental Delay, d2             |      |      |       | 0.6     | 0.4                       |      |      |      |      |      | 1.1   | 0.3   |  |
| Delay (s)                         |      |      |       | 9.3     | 10.9                      |      |      |      |      |      | 34.8  | 0.3   |  |
| Level of Service                  |      |      |       | A       | B                         |      |      |      |      |      | C     | A     |  |
| Approach Delay (s)                |      | 0.0  |       |         | 10.4                      |      |      | 0.0  |      |      | 28.2  |       |  |
| Approach LOS                      |      | A    |       |         | B                         |      |      | A    |      |      | C     |       |  |
| <b>Intersection Summary</b>       |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| HCM 2000 Control Delay            |      |      | 19.0  |         | HCM 2000 Level of Service |      |      |      |      |      |       | B     |  |
| HCM 2000 Volume to Capacity ratio |      |      | 0.84  |         |                           |      |      |      |      |      |       |       |  |
| Actuated Cycle Length (s)         |      |      | 135.0 |         | Sum of lost time (s)      |      |      |      |      |      | 40.0  |       |  |
| Intersection Capacity Utilization |      |      | 86.9% |         | ICU Level of Service      |      |      |      |      |      | E     |       |  |
| Analysis Period (min)             |      |      | 15    |         |                           |      |      |      |      |      |       |       |  |
| c Critical Lane Group             |      |      |       |         |                           |      |      |      |      |      |       |       |  |

















| Lane Group              | WBT  | WBR  | NBL  | NBT  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 1493 | 646  | 332  | 1049 |
| v/c Ratio               | 0.97 | 1.06 | 0.34 | 0.35 |
| Control Delay           | 54.1 | 77.5 | 1.9  | 3.4  |
| Queue Delay             | 35.1 | 0.0  | 2.8  | 1.4  |
| Total Delay             | 89.2 | 77.5 | 4.7  | 4.8  |
| Queue Length 50th (ft)  | 474  | ~503 | 8    | 44   |
| Queue Length 95th (ft)  | #558 | #712 | m8   | m25  |
| Internal Link Dist (ft) | 133  |      |      | 295  |
| Turn Bay Length (ft)    |      |      |      |      |
| Base Capacity (vph)     | 1544 | 610  | 968  | 2994 |
| Starvation Cap Reductn  | 0    | 0    | 512  | 1662 |
| Spillback Cap Reductn   | 166  | 0    | 14   | 18   |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.08 | 1.06 | 0.73 | 0.79 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |  |
| Lane Configurations               |   |   |   |   | ↑↑↑   | ↑   | ↑  | ↑↑↑   |   |   |   |   |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 0   | 1329  | 575   | 358  | 859   | 0   | 0   | 0   | 0   |  |
| Future Volume (vph)               | 0   | 0   | 0   | 0   | 1329  | 575   | 358  | 859   | 0   | 0   | 0   | 0   |  |
| 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   |   |   |   |   |  |
| Lane Util. Factor                 |   |   |   |   | 0.91  | 1.00  | 0.86   | 0.86  |   |   |   |   |  |
| Frt                               |   |   |   |   | 1.00  | 0.85  | 1.00   | 1.00  |   |   |   |   |  |
| Flt Protected                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (prot)                 |   |   |   |   | 5085  | 1583  | 1537   | 4873  |   |   |   |   |  |
| Flt Permitted                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (perm)                 |   |   |   |   | 5085  | 1583  | 1537   | 4873  |   |   |   |   |  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.93  | 0.89  | 0.89  | 0.82   | 0.91  | 0.92  | 0.92  | 0.92  | 0.92  |  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 0   | 1493  | 646   | 437  | 944   | 0   | 0   | 0   | 0   |  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 132   | 40   | 40  | 0   | 0   | 0   | 0   |  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 0   | 1493  | 514   | 292  | 1009  | 0   | 0   | 0   | 0   |  |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 2%  | 2%  | 2%  | 1%   | 0%  | 2%  | 2%  | 2%  | 2%  |  |
| Turn Type                         |   |   |   |   | NA  | Perm  | custom   | NA  |   |   |   |   |  |
| Protected Phases                  |   |   |   |   | 1 7 8   |   | 2 3 4 5  | 2 3 4 5   |   |   |   |   |  |
| Permitted Phases                  |   |   |   |   |   | 1 7 8   | 6  | 6   |   |   |   |   |  |
| Actuated Green, G (s)             |   |   |   |   | 41.0  | 41.0  | 76.0   | 76.0  |   |   |   |   |  |
| Effective Green, g (s)            |   |   |   |   | 39.0  | 39.0  | 74.0   | 74.0  |   |   |   |   |  |
| Actuated g/C Ratio                |   |   |   |   | 0.29  | 0.29  | 0.55   | 0.55  |   |   |   |   |  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Lane Grp Cap (vph)                |   |   |   |   | 1469  | 457   | 910  | 2887  |   |   |   |   |  |
| v/s Ratio Prot                    |   |   |   |   | 0.29  |   | 0.12   | c0.13   |   |   |   |   |  |
| v/s Ratio Perm                    |   |   |   |   |   | c0.32   | 0.07   | 0.07  |   |   |   |   |  |
| v/c Ratio                         |   |   |   |   | 1.02  | 1.12  | 0.32   | 0.35  |   |   |   |   |  |
| Uniform Delay, d1                 |   |   |   |   | 48.0  | 48.0  | 16.7   | 17.0  |   |   |   |   |  |
| Progression Factor                |   |   |   |   | 0.82  | 0.73  | 0.17   | 0.27  |   |   |   |   |  |
| Incremental Delay, d2             |   |   |   |   | 27.1  | 79.7  | 0.0  | 0.0   |   |   |   |   |  |
| Delay (s)                         |   |   |   |   | 66.4  | 114.9   | 2.8  | 4.7   |   |   |   |   |  |
| Level of Service                  |   |   |   |   | E   | F   | A  | A   |   |   |   |   |  |
| Approach Delay (s)                |   | 0.0   |   |   | 81.1  |   |  | 4.2   |   |   | 0.0   |   |  |
| Approach LOS                      |   | A   |   |   | F   |   |  | A   |   |   | A   |   |  |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |  |
| HCM 2000 Control Delay            |   |   | 50.9  |   | HCM 2000 Level of Service   |   |  |   | D   |   |   |   |  |
| HCM 2000 Volume to Capacity ratio |   |   | 0.76  |   |   |   |  |   |   |   |   |   |  |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |  |   | 40.0  |   |   |   |  |
| Intersection Capacity Utilization |   |   | 84.2%   |   | ICU Level of Service  |   |  |   | E   |   |   |   |  |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |  |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |  |



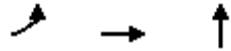
| Lane Group                  | EBT  | SBL  | SBT  |
|-----------------------------|------|------|------|
| Lane Group Flow (vph)       | 1369 | 510  | 1586 |
| v/c Ratio                   | 0.79 | 0.53 | 0.53 |
| Control Delay               | 44.8 | 10.7 | 11.4 |
| Queue Delay                 | 4.8  | 6.3  | 3.3  |
| Total Delay                 | 49.6 | 17.0 | 14.6 |
| Queue Length 50th (ft)      | 397  | 322  | 366  |
| Queue Length 95th (ft)      | 450  | 479  | 457  |
| Internal Link Dist (ft)     | 69   |      | 291  |
| Turn Bay Length (ft)        |      |      |      |
| Base Capacity (vph)         | 1729 | 959  | 2979 |
| Starvation Cap Reductn      | 0    | 388  | 1262 |
| Spillback Cap Reductn       | 293  | 59   | 88   |
| Storage Cap Reductn         | 0    | 0    | 0    |
| Reduced v/c Ratio           | 0.95 | 0.89 | 0.92 |
| <b>Intersection Summary</b> |      |      |      |

9: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL     | SBT     | SBR  |  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|------|------|------|---------|---------|------|--|
| Lane Configurations               |      | ↑↑↑   |       |      |                           |      |      |      |      | ↘       | ↑↑↑     |      |  |
| Traffic Volume (vph)              | 0    | 1218  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 680     | 1204    | 0    |  |
| Future Volume (vph)               | 0    | 1218  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 680     | 1204    | 0    |  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900    | 1900    | 1900 |  |
| Total Lost time (s)               |      | 2.0   |       |      |                           |      |      |      |      | 6.0     | 6.0     |      |  |
| Lane Util. Factor                 |      | 0.91  |       |      |                           |      |      |      |      | 0.86    | 0.86    |      |  |
| Frbp, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flpb, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Frt                               |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flt Protected                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 0.99    |      |  |
| Satd. Flow (prot)                 |      | 5187  |       |      |                           |      |      |      |      | 1522    | 4846    |      |  |
| Flt Permitted                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 0.99    |      |  |
| Satd. Flow (perm)                 |      | 5187  |       |      |                           |      |      |      |      | 1522    | 4846    |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.89  | 0.86  | 0.92 | 0.92                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.88    | 0.91    | 0.92 |  |
| Adj. Flow (vph)                   | 0    | 1369  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 773     | 1323    | 0    |  |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 40      | 40      | 0    |  |
| Lane Group Flow (vph)             | 0    | 1369  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 470     | 1546    | 0    |  |
| Confl. Bikes (#/hr)               |      |       | 1     |      |                           |      |      |      |      |         |         |      |  |
| Heavy Vehicles (%)                | 2%   | 0%    | 0%    | 2%   | 2%                        | 2%   | 2%   | 2%   | 2%   | 2%      | 0%      | 0%   |  |
| Turn Type                         |      | NA    |       |      |                           |      |      |      |      | custom  | NA      |      |  |
| Protected Phases                  |      | 3 4 5 |       |      |                           |      |      |      |      | 1 2 6 8 | 1 2 6 8 |      |  |
| Permitted Phases                  |      |       |       |      |                           |      |      |      |      | 7       | 7       |      |  |
| Actuated Green, G (s)             |      | 41.0  |       |      |                           |      |      |      |      | 74.0    | 74.0    |      |  |
| Effective Green, g (s)            |      | 35.0  |       |      |                           |      |      |      |      | 74.0    | 74.0    |      |  |
| Actuated g/C Ratio                |      | 0.26  |       |      |                           |      |      |      |      | 0.55    | 0.55    |      |  |
| Clearance Time (s)                |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Vehicle Extension (s)             |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Lane Grp Cap (vph)                |      | 1344  |       |      |                           |      |      |      |      | 901     | 2871    |      |  |
| v/s Ratio Prot                    |      | c0.26 |       |      |                           |      |      |      |      | 0.27    | c0.28   |      |  |
| v/s Ratio Perm                    |      |       |       |      |                           |      |      |      |      | 0.04    | 0.04    |      |  |
| v/c Ratio                         |      | 1.02  |       |      |                           |      |      |      |      | 0.52    | 0.54    |      |  |
| Uniform Delay, d1                 |      | 50.0  |       |      |                           |      |      |      |      | 19.3    | 19.6    |      |  |
| Progression Factor                |      | 1.00  |       |      |                           |      |      |      |      | 0.73    | 0.75    |      |  |
| Incremental Delay, d2             |      | 29.3  |       |      |                           |      |      |      |      | 0.2     | 0.1     |      |  |
| Delay (s)                         |      | 79.3  |       |      |                           |      |      |      |      | 14.2    | 14.7    |      |  |
| Level of Service                  |      | E     |       |      |                           |      |      |      |      | B       | B       |      |  |
| Approach Delay (s)                |      | 79.3  |       |      | 0.0                       |      |      | 0.0  |      |         | 14.6    |      |  |
| Approach LOS                      |      | E     |       |      | A                         |      |      | A    |      |         | B       |      |  |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| HCM 2000 Control Delay            |      |       | 40.2  |      | HCM 2000 Level of Service |      |      |      |      |         | D       |      |  |
| HCM 2000 Volume to Capacity ratio |      |       | 0.83  |      |                           |      |      |      |      |         |         |      |  |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      |      |      |      |      | 40.0    |         |      |  |
| Intersection Capacity Utilization |      |       | 59.7% |      | ICU Level of Service      |      |      |      |      | B       |         |      |  |
| Analysis Period (min)             |      |       | 15    |      |                           |      |      |      |      |         |         |      |  |
| c Critical Lane Group             |      |       |       |      |                           |      |      |      |      |         |         |      |  |



| Lane Group              | EBL  | EBT  | NBT  |
|-------------------------|------|------|------|
| Lane Group Flow (vph)   | 508  | 1458 | 1465 |
| v/c Ratio               | 0.45 | 0.63 | 0.93 |
| Control Delay           | 6.3  | 12.1 | 58.9 |
| Queue Delay             | 5.5  | 6.7  | 0.0  |
| Total Delay             | 11.8 | 18.7 | 58.9 |
| Queue Length 50th (ft)  | 236  | 529  | 354  |
| Queue Length 95th (ft)  | 275  | 587  | 361  |
| Internal Link Dist (ft) |      | 38   | 673  |
| Turn Bay Length (ft)    |      |      |      |
| Base Capacity (vph)     | 1125 | 2308 | 1577 |
| Starvation Cap Reductn  | 544  | 800  | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.87 | 0.97 | 0.93 |
| Intersection Summary    |      |      |      |

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

| Movement                          | EBL     | EBT     | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                       | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|---------|---------|-------|------|------|------|------|---------------------------|------|------|------|------|--|
| Lane Configurations               |         |         |       |      |      |      |      |                           |      |      |      |      |  |
| Traffic Volume (vph)              | 502     | 1360    | 0     | 0    | 0    | 0    | 0    | 906                       | 310  | 0    | 0    | 0    |  |
| Future Volume (vph)               | 502     | 1360    | 0     | 0    | 0    | 0    | 0    | 906                       | 310  | 0    | 0    | 0    |  |
| 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                       |      |      |      |      |  |
| Lane Util. Factor                 | 0.91    | 0.91    |       |      |      |      |      | 0.86                      |      |      |      |      |  |
| Frpb, ped/bikes                   | 1.00    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |  |
| Flpb, ped/bikes                   | 1.00    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |  |
| Frt                               | 1.00    | 1.00    |       |      |      |      |      | 0.96                      |      |      |      |      |  |
| Flt Protected                     | 0.95    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |  |
| Satd. Flow (prot)                 | 1643    | 3418    |       |      |      |      |      | 6265                      |      |      |      |      |  |
| Flt Permitted                     | 0.95    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |  |
| Satd. Flow (perm)                 | 1643    | 3418    |       |      |      |      |      | 6265                      |      |      |      |      |  |
| Peak-hour factor, PHF             | 0.89    | 0.97    | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 | 0.83                      | 0.83 | 0.92 | 0.92 | 0.92 |  |
| Adj. Flow (vph)                   | 564     | 1402    | 0     | 0    | 0    | 0    | 0    | 1092                      | 373  | 0    | 0    | 0    |  |
| RTOR Reduction (vph)              | 35      | 35      | 0     | 0    | 0    | 0    | 0    | 44                        | 0    | 0    | 0    | 0    |  |
| Lane Group Flow (vph)             | 473     | 1423    | 0     | 0    | 0    | 0    | 0    | 1421                      | 0    | 0    | 0    | 0    |  |
| Confl. Bikes (#/hr)               |         |         |       |      |      |      |      |                           | 2    |      |      |      |  |
| Heavy Vehicles (%)                | 0%      | 1%      | 2%    | 2%   | 2%   | 2%   | 2%   | 0%                        | 0%   | 2%   | 2%   | 2%   |  |
| Turn Type                         | custom  | NA      |       |      |      |      |      | NA                        |      |      |      |      |  |
| Protected Phases                  | 4 5 6 8 | 4 5 6 8 |       |      |      |      |      | 1 2 3                     |      |      |      |      |  |
| Permitted Phases                  | 7       | 7       |       |      |      |      |      |                           |      |      |      |      |  |
| Actuated Green, G (s)             | 82.0    | 82.0    |       |      |      |      |      | 37.0                      |      |      |      |      |  |
| Effective Green, g (s)            | 82.0    | 82.0    |       |      |      |      |      | 37.0                      |      |      |      |      |  |
| Actuated g/C Ratio                | 0.61    | 0.61    |       |      |      |      |      | 0.27                      |      |      |      |      |  |
| Clearance Time (s)                |         |         |       |      |      |      |      |                           |      |      |      |      |  |
| Vehicle Extension (s)             |         |         |       |      |      |      |      |                           |      |      |      |      |  |
| Lane Grp Cap (vph)                | 1070    | 2228    |       |      |      |      |      | 1717                      |      |      |      |      |  |
| v/s Ratio Prot                    | 0.25    | c0.36   |       |      |      |      |      | c0.23                     |      |      |      |      |  |
| v/s Ratio Perm                    | 0.04    | 0.05    |       |      |      |      |      |                           |      |      |      |      |  |
| v/c Ratio                         | 0.44    | 0.64    |       |      |      |      |      | 0.83                      |      |      |      |      |  |
| Uniform Delay, d1                 | 14.2    | 17.0    |       |      |      |      |      | 46.0                      |      |      |      |      |  |
| Progression Factor                | 0.61    | 0.91    |       |      |      |      |      | 1.00                      |      |      |      |      |  |
| Incremental Delay, d2             | 0.1     | 0.3     |       |      |      |      |      | 4.8                       |      |      |      |      |  |
| Delay (s)                         | 8.8     | 15.8    |       |      |      |      |      | 50.8                      |      |      |      |      |  |
| Level of Service                  | A       | B       |       |      |      |      |      | D                         |      |      |      |      |  |
| Approach Delay (s)                |         | 14.0    |       |      | 0.0  |      |      | 50.8                      |      |      | 0.0  |      |  |
| Approach LOS                      |         | B       |       |      | A    |      |      | D                         |      |      | A    |      |  |
| <b>Intersection Summary</b>       |         |         |       |      |      |      |      |                           |      |      |      |      |  |
| HCM 2000 Control Delay            |         |         | 29.7  |      |      |      |      | HCM 2000 Level of Service |      | C    |      |      |  |
| HCM 2000 Volume to Capacity ratio |         |         | 0.91  |      |      |      |      |                           |      |      |      |      |  |
| Actuated Cycle Length (s)         |         |         | 135.0 |      |      |      |      | Sum of lost time (s)      |      | 40.0 |      |      |  |
| Intersection Capacity Utilization |         |         | 63.5% |      |      |      |      | ICU Level of Service      |      | B    |      |      |  |
| Analysis Period (min)             |         |         | 15    |      |      |      |      |                           |      |      |      |      |  |
| c Critical Lane Group             |         |         |       |      |      |      |      |                           |      |      |      |      |  |



| Lane Group              | WBL   | WBT  | NBL  | NBT  | SBT  |
|-------------------------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 1351  | 951  | 158  | 190  | 176  |
| v/c Ratio               | 2.13  | 1.03 | 0.20 | 0.12 | 0.15 |
| Control Delay           | 542.3 | 88.6 | 4.9  | 1.1  | 26.2 |
| Queue Delay             | 0.7   | 0.0  | 3.1  | 0.0  | 0.0  |
| Total Delay             | 543.0 | 88.6 | 8.0  | 1.1  | 26.2 |
| Queue Length 50th (ft)  | ~933  | ~312 | 129  | 0    | 27   |
| Queue Length 95th (ft)  | #1040 | #407 | 213  | 0    | 38   |
| Internal Link Dist (ft) |       | 364  |      | 236  | 206  |
| Turn Bay Length (ft)    | 300   |      |      |      |      |
| Base Capacity (vph)     | 633   | 925  | 778  | 1600 | 1195 |
| Starvation Cap Reductn  | 0     | 0    | 521  | 0    | 0    |
| Spillback Cap Reductn   | 56    | 0    | 0    | 0    | 166  |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 2.34  | 1.03 | 0.61 | 0.12 | 0.17 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.
























Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

11: West Gate Blvd & US 290 WBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

|                                   |  |  |  |    |    |  |   |    |  |  |    |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |   |   |   |   |    |   |  |   |   |   |    |   |
| Traffic Volume (vph)              | 0   | 0   | 0   | 1189  | 869   | 19  | 284   | 25  | 0   | 0   | 83  | 44  |
| Future Volume (vph)               | 0   | 0   | 0   | 1189  | 869   | 19  | 284   | 25  | 0   | 0   | 83  | 44  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               |   |   |   | 5.5   | 5.5   |   | 6.0   | 6.0   |   |   | 6.0   |   |
| Lane Util. Factor                 |   |   |   | 0.97  | 0.91  |   | 0.91  | 0.91  |   |   | 0.91  |   |
| Frbp, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 0.99  |   |
| Flpb, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  |   |
| Frt                               |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 0.95  |   |
| Flt Protected                     |   |   |   | 0.95  | 1.00  |   | 0.95  | 0.96  |   |   | 1.00  |   |
| Satd. Flow (prot)                 |   |   |   | 3502  | 5103  |   | 1625  | 3263  |   |   | 4774  |   |
| Flt Permitted                     |   |   |   | 0.95  | 1.00  |   | 0.64  | 0.66  |   |   | 1.00  |   |
| Satd. Flow (perm)                 |   |   |   | 3502  | 5103  |   | 1088  | 2238  |   |   | 4774  |   |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.88  | 0.94  | 0.70  | 0.90  | 0.79  | 0.92  | 0.92  | 0.74  | 0.69  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 1351  | 924   | 27  | 316   | 32  | 0   | 0   | 112   | 64  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 48  | 0   |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 1351  | 949   | 0   | 158   | 190   | 0   | 0   | 128   | 0   |
| Confl. Peds. (#/hr)               |   |   |   |   |   |   | 2   |   |   |   |   | 2   |
| Confl. Bikes (#/hr)               |   |   |   |   |   | 2   |   |   |   |   |   |   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 0%  | 1%  | 7%  | 1%  | 5%  | 2%  | 2%  | 0%  | 6%  |
| Turn Type                         |   |   |   | Perm  | NA  |   | Perm  | NA  |   |   | NA  |   |
| Protected Phases                  |   |   |   |   | 4 5   |   |   | 1 2 6 7   |   |   | 1 2   |   |
| Permitted Phases                  |   |   |   | 4 5   |   |   | 1 2 6 7   |   |   |   |   |   |
| Actuated Green, G (s)             |   |   |   | 23.0  | 23.0  |   | 95.5  | 95.5  |   |   | 31.8  |   |
| Effective Green, g (s)            |   |   |   | 23.0  | 23.0  |   | 84.5  | 84.5  |   |   | 31.8  |   |
| Actuated g/C Ratio                |   |   |   | 0.18  | 0.18  |   | 0.65  | 0.65  |   |   | 0.24  |   |
| Clearance Time (s)                |   |   |   |   |   |   |   |   |   |   |   |   |
| Vehicle Extension (s)             |   |   |   |   |   |   |   |   |   |   |   |   |
| Lane Grp Cap (vph)                |   |   |   | 619   | 902   |   | 707   | 1454  |   |   | 1167  |   |
| v/s Ratio Prot                    |   |   |   |   | 0.19  |   |   |   |   |   | 0.03  |   |
| v/s Ratio Perm                    |   |   |   | c0.39   |   |   | c0.15   | 0.08  |   |   |   |   |
| v/c Ratio                         |   |   |   | 2.18  | 1.05  |   | 0.22  | 0.13  |   |   | 0.11  |   |
| Uniform Delay, d1                 |   |   |   | 53.5  | 53.5  |   | 9.3   | 8.7   |   |   | 38.1  |   |
| Progression Factor                |   |   |   | 1.00  | 1.00  |   | 0.77  | 0.18  |   |   | 1.00  |   |
| Incremental Delay, d2             |   |   |   | 537.5   | 44.5  |   | 0.1   | 0.0   |   |   | 0.0   |   |
| Delay (s)                         |   |   |   | 591.0   | 98.0  |   | 7.3   | 1.6   |   |   | 38.1  |   |
| Level of Service                  |   |   |   | F   | F   |   | A   | A   |   |   | D   |   |
| Approach Delay (s)                |   | 0.0   |   |   | 387.3   |   |   | 4.2   |   |   | 38.1  |   |
| Approach LOS                      |   | A   |   |   | F   |   |   | A   |   |   | D   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 318.4   |   | HCM 2000 Level of Service   |   |   |   |   |   | F   |   |
| HCM 2000 Volume to Capacity ratio |   |   | 0.72  |   |   |   |   |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 130.0   |   | Sum of lost time (s)  |   |   |   |   |   | 34.0  |   |
| Intersection Capacity Utilization |   |   | 84.1%   |   | ICU Level of Service  |   |   |   |   |   | E   |   |
| Analysis Period (min)             |   |   | 15  |   |   |   |   |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |   |   |   |   |   |   |





| Lane Group              | EBL  | EBT  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 31   | 904  | 326  | 571  | 117  | 1368 |
| v/c Ratio               | 0.05 | 0.71 | 0.49 | 0.59 | 0.21 | 0.70 |
| Control Delay           | 24.8 | 37.0 | 50.5 | 6.3  | 56.2 | 22.4 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 48.8 |
| Total Delay             | 24.8 | 37.0 | 50.5 | 6.3  | 56.2 | 71.2 |
| Queue Length 50th (ft)  | 16   | 320  | 131  | 0    | 74   | 291  |
| Queue Length 95th (ft)  | 27   | 343  | 180  | 30   | m39  | m5   |
| Internal Link Dist (ft) |      | 52   | 369  |      |      | 236  |
| Turn Bay Length (ft)    |      |      |      | 90   |      |      |
| Base Capacity (vph)     | 654  | 1251 | 659  | 972  | 563  | 1960 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 744  |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.05 | 0.72 | 0.49 | 0.59 | 0.21 | 1.13 |

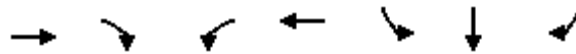
**Intersection Summary**

m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

| Movement                          | EBL   | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT     | SBR                       |      |
|-----------------------------------|-------|-------|-------|------|------|------|------|------|------|------|---------|---------------------------|------|
| Lane Configurations               |       |       |       |      |      |      |      |      |      |      |         |                           |      |
| Traffic Volume (vph)              | 21    | 524   | 251   | 0    | 0    | 0    | 0    | 297  | 474  | 96   | 1204    | 0                         |      |
| Future Volume (vph)               | 21    | 524   | 251   | 0    | 0    | 0    | 0    | 297  | 474  | 96   | 1204    | 0                         |      |
| 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  | 5.5  | 5.5     |                           |      |
| Lane Util. Factor                 | 1.00  | 0.95  |       |      |      |      |      | 0.95 | 0.88 | 1.00 | 0.95    |                           |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  |       |      |      |      |      | 1.00 | 0.98 | 1.00 | 1.00    |                           |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  |       |      |      |      |      | 1.00 | 1.00 | 1.00 | 1.00    |                           |      |
| Frt                               | 1.00  | 0.95  |       |      |      |      |      | 1.00 | 0.85 | 1.00 | 1.00    |                           |      |
| Flt Protected                     | 0.95  | 1.00  |       |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00    |                           |      |
| Satd. Flow (prot)                 | 1805  | 3398  |       |      |      |      |      | 3574 | 2745 | 1805 | 3610    |                           |      |
| Flt Permitted                     | 0.95  | 1.00  |       |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00    |                           |      |
| Satd. Flow (perm)                 | 1805  | 3398  |       |      |      |      |      | 3574 | 2745 | 1805 | 3610    |                           |      |
| Peak-hour factor, PHF             | 0.67  | 0.83  | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 | 0.91 | 0.83 | 0.82 | 0.88    | 0.92                      |      |
| Adj. Flow (vph)                   | 31    | 631   | 273   | 0    | 0    | 0    | 0    | 326  | 571  | 117  | 1368    | 0                         |      |
| RTOR Reduction (vph)              | 0     | 20    | 0     | 0    | 0    | 0    | 0    | 0    | 463  | 0    | 0       | 0                         |      |
| Lane Group Flow (vph)             | 31    | 884   | 0     | 0    | 0    | 0    | 0    | 326  | 108  | 117  | 1368    | 0                         |      |
| Confl. Peds. (#/hr)               |       |       | 1     |      |      |      |      |      | 1    | 1    |         |                           |      |
| Confl. Bikes (#/hr)               |       |       | 1     |      |      |      |      |      | 1    |      |         |                           |      |
| Heavy Vehicles (%)                | 0%    | 1%    | 1%    | 2%   | 2%   | 2%   | 2%   | 1%   | 1%   | 0%   | 0%      | 0%                        |      |
| Turn Type                         | Split | NA    |       |      |      |      |      | NA   | Perm | Prot | NA      |                           |      |
| Protected Phases                  | 1 7   | 1 7   |       |      |      |      |      | 5 6  |      | 2 4  | 2 4 5 6 |                           |      |
| Permitted Phases                  |       |       |       |      |      |      |      |      | 5 6  |      |         |                           |      |
| Actuated Green, G (s)             | 47.9  | 47.9  |       |      |      |      |      | 24.5 | 24.5 | 40.6 | 70.6    |                           |      |
| Effective Green, g (s)            | 42.4  | 42.4  |       |      |      |      |      | 24.5 | 24.5 | 40.6 | 64.6    |                           |      |
| Actuated g/C Ratio                | 0.33  | 0.33  |       |      |      |      |      | 0.19 | 0.19 | 0.31 | 0.50    |                           |      |
| Clearance Time (s)                |       |       |       |      |      |      |      |      |      |      |         |                           |      |
| Vehicle Extension (s)             |       |       |       |      |      |      |      |      |      |      |         |                           |      |
| Lane Grp Cap (vph)                | 588   | 1108  |       |      |      |      |      | 673  | 517  | 563  | 1793    |                           |      |
| v/s Ratio Prot                    | 0.02  | c0.26 |       |      |      |      |      | 0.09 |      | 0.06 | c0.38   |                           |      |
| v/s Ratio Perm                    |       |       |       |      |      |      |      |      | 0.04 |      |         |                           |      |
| v/c Ratio                         | 0.05  | 0.80  |       |      |      |      |      | 0.48 | 0.21 | 0.21 | 0.76    |                           |      |
| Uniform Delay, d1                 | 30.0  | 39.9  |       |      |      |      |      | 47.1 | 44.6 | 32.9 | 26.5    |                           |      |
| Progression Factor                | 1.00  | 1.00  |       |      |      |      |      | 1.00 | 1.00 | 1.61 | 0.97    |                           |      |
| Incremental Delay, d2             | 0.0   | 3.8   |       |      |      |      |      | 2.5  | 0.9  | 0.1  | 0.3     |                           |      |
| Delay (s)                         | 30.0  | 43.7  |       |      |      |      |      | 49.6 | 45.5 | 53.1 | 25.9    |                           |      |
| Level of Service                  | C     | D     |       |      |      |      |      | D    | D    | D    | C       |                           |      |
| Approach Delay (s)                |       | 43.3  |       |      | 0.0  |      |      | 47.0 |      |      | 28.1    |                           |      |
| Approach LOS                      |       | D     |       |      | A    |      |      | D    |      |      | C       |                           |      |
| <b>Intersection Summary</b>       |       |       |       |      |      |      |      |      |      |      |         |                           |      |
| HCM 2000 Control Delay            |       |       | 37.5  |      |      |      |      |      |      |      |         | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio |       |       | 0.87  |      |      |      |      |      |      |      |         |                           |      |
| Actuated Cycle Length (s)         |       |       | 130.0 |      |      |      |      |      |      |      |         | Sum of lost time (s)      | 34.0 |
| Intersection Capacity Utilization |       |       | 84.1% |      |      |      |      |      |      |      |         | ICU Level of Service      | E    |
| Analysis Period (min)             |       |       | 15    |      |      |      |      |      |      |      |         |                           |      |
| c Critical Lane Group             |       |       |       |      |      |      |      |      |      |      |         |                           |      |



| Lane Group              | EBT  | EBR   | WBL   | WBT   | SBL   | SBT   | SBR  |
|-------------------------|------|-------|-------|-------|-------|-------|------|
| Lane Group Flow (vph)   | 2906 | 1509  | 249   | 2791  | 312   | 327   | 321  |
| v/c Ratio               | 0.89 | 1.44  | 1.13  | 0.70  | 1.19  | 1.21  | 0.20 |
| Control Delay           | 32.6 | 231.9 | 145.3 | 16.2  | 178.3 | 182.6 | 0.3  |
| Queue Delay             | 1.2  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Delay             | 33.8 | 231.9 | 145.3 | 16.2  | 178.3 | 182.6 | 0.3  |
| Queue Length 50th (ft)  | 1022 | ~2382 | ~295  | 1189  | ~466  | ~492  | 0    |
| Queue Length 95th (ft)  | 1078 | #2646 | m#360 | m1041 | #641  | #693  | 0    |
| Internal Link Dist (ft) | 834  |       |       | 1419  |       | 192   |      |
| Turn Bay Length (ft)    |      | 515   | 950   |       |       |       |      |
| Base Capacity (vph)     | 3252 | 1046  | 220   | 3966  | 262   | 271   | 1595 |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     | 0     | 0    |
| Spillback Cap Reductn   | 168  | 0     | 0     | 0     | 0     | 0     | 0    |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     | 0     | 0    |
| Reduced v/c Ratio       | 0.94 | 1.44  | 1.13  | 0.70  | 1.19  | 1.21  | 0.20 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

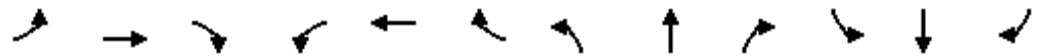
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

13: Capital of Texas Hwy & Mopac SBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement                          | EBL  | EBT   | EBR    | WBL   | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-----------------------------------|------|-------|--------|-------|---------------------------|------|------|------|------|-------|-------|-------|
| Lane Configurations               |      | ↑↑↑   | ↑      | ↑     | ↑↑↑                       |      |      |      |      | ↑     | ↑     | ↑     |
| Traffic Volume (vph)              | 0    | 2790  | 1418   | 197   | 2679                      | 0    | 0    | 0    | 0    | 316   | 239   | 247   |
| Future Volume (vph)               | 0    | 2790  | 1418   | 197   | 2679                      | 0    | 0    | 0    | 0    | 316   | 239   | 247   |
| Ideal Flow (vphp)                 | 1900 | 1900  | 1900   | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  |
| Total Lost time (s)               |      | 7.0   | 7.0    | 7.0   | 7.0                       |      |      |      |      | 6.5   | 6.5   | 4.0   |
| Lane Util. Factor                 |      | 0.91  | 1.00   | 1.00  | 0.91                      |      |      |      |      | 0.95  | 0.95  | 1.00  |
| Frbp, ped/bikes                   |      | 1.00  | 1.00   | 1.00  | 1.00                      |      |      |      |      | 1.00  | 1.00  | 0.99  |
| Flpb, ped/bikes                   |      | 1.00  | 1.00   | 1.00  | 1.00                      |      |      |      |      | 1.00  | 1.00  | 1.00  |
| Frt                               |      | 1.00  | 0.85   | 1.00  | 1.00                      |      |      |      |      | 1.00  | 1.00  | 0.85  |
| Flt Protected                     |      | 1.00  | 1.00   | 0.95  | 1.00                      |      |      |      |      | 0.95  | 0.99  | 1.00  |
| Satd. Flow (prot)                 |      | 5136  | 1599   | 1787  | 5136                      |      |      |      |      | 1715  | 1775  | 1595  |
| Flt Permitted                     |      | 1.00  | 1.00   | 0.03  | 1.00                      |      |      |      |      | 0.95  | 0.99  | 1.00  |
| Satd. Flow (perm)                 |      | 5136  | 1599   | 62    | 5136                      |      |      |      |      | 1715  | 1775  | 1595  |
| Peak-hour factor, PHF             | 0.92 | 0.96  | 0.94   | 0.79  | 0.96                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.86  | 0.88  | 0.77  |
| Adj. Flow (vph)                   | 0    | 2906  | 1509   | 249   | 2791                      | 0    | 0    | 0    | 0    | 367   | 272   | 321   |
| RTOR Reduction (vph)              | 0    | 0     | 33     | 0     | 0                         | 0    | 0    | 0    | 0    | 0     | 0     | 0     |
| Lane Group Flow (vph)             | 0    | 2906  | 1476   | 249   | 2791                      | 0    | 0    | 0    | 0    | 312   | 327   | 321   |
| Confl. Bikes (#/hr)               |      |       |        |       |                           |      |      |      |      |       |       | 1     |
| Heavy Vehicles (%)                | 2%   | 1%    | 1%     | 1%    | 1%                        | 2%   | 2%   | 2%   | 2%   | 0%    | 1%    | 0%    |
| Turn Type                         |      | NA    | Perm   | pm+pt | NA                        |      |      |      |      | Perm  | NA    | Free  |
| Protected Phases                  |      | 2     |        | 1     | 6                         |      |      |      |      |       | 8     |       |
| Permitted Phases                  |      |       | 2      | 6     |                           |      |      |      |      | 8     |       | Free  |
| Actuated Green, G (s)             |      | 114.0 | 114.0  | 139.0 | 139.0                     |      |      |      |      | 27.5  | 27.5  | 180.0 |
| Effective Green, g (s)            |      | 114.0 | 114.0  | 139.0 | 139.0                     |      |      |      |      | 27.5  | 27.5  | 180.0 |
| Actuated g/C Ratio                |      | 0.63  | 0.63   | 0.77  | 0.77                      |      |      |      |      | 0.15  | 0.15  | 1.00  |
| Clearance Time (s)                |      | 7.0   | 7.0    | 7.0   | 7.0                       |      |      |      |      | 6.5   | 6.5   |       |
| Vehicle Extension (s)             |      | 4.0   | 4.0    | 2.0   | 4.0                       |      |      |      |      | 2.0   | 2.0   |       |
| Lane Grp Cap (vph)                |      | 3252  | 1012   | 220   | 3966                      |      |      |      |      | 262   | 271   | 1595  |
| v/s Ratio Prot                    |      | 0.57  |        | c0.11 | 0.54                      |      |      |      |      |       |       |       |
| v/s Ratio Perm                    |      |       | c0.92  | 0.76  |                           |      |      |      |      | 0.18  | 0.18  | 0.20  |
| v/c Ratio                         |      | 0.89  | 1.46   | 1.13  | 0.70                      |      |      |      |      | 1.19  | 1.21  | 0.20  |
| Uniform Delay, d1                 |      | 27.9  | 33.0   | 69.1  | 10.2                      |      |      |      |      | 76.2  | 76.2  | 0.0   |
| Progression Factor                |      | 1.00  | 1.00   | 1.22  | 1.51                      |      |      |      |      | 1.00  | 1.00  | 1.00  |
| Incremental Delay, d2             |      | 4.3   | 211.7  | 84.1  | 0.5                       |      |      |      |      | 117.3 | 122.4 | 0.3   |
| Delay (s)                         |      | 32.1  | 244.7  | 168.4 | 16.0                      |      |      |      |      | 193.5 | 198.7 | 0.3   |
| Level of Service                  |      | C     | F      | F     | B                         |      |      |      |      | F     | F     | A     |
| Approach Delay (s)                |      | 104.8 |        |       | 28.5                      |      |      | 0.0  |      |       | 130.7 |       |
| Approach LOS                      |      | F     |        |       | C                         |      |      | A    |      |       | F     |       |
| <b>Intersection Summary</b>       |      |       |        |       |                           |      |      |      |      |       |       |       |
| HCM 2000 Control Delay            |      |       | 80.2   |       | HCM 2000 Level of Service |      |      |      |      | F     |       |       |
| HCM 2000 Volume to Capacity ratio |      |       | 1.38   |       |                           |      |      |      |      |       |       |       |
| Actuated Cycle Length (s)         |      |       | 180.0  |       | Sum of lost time (s)      |      |      |      | 20.5 |       |       |       |
| Intersection Capacity Utilization |      |       | 130.8% |       | ICU Level of Service      |      |      |      | H    |       |       |       |
| Analysis Period (min)             |      |       | 15     |       |                           |      |      |      |      |       |       |       |

c Critical Lane Group



| Lane Group              | EBL   | EBT    | WBT  | WBR    | NBL  | NBT  | NBR   |
|-------------------------|-------|--------|------|--------|------|------|-------|
| Lane Group Flow (vph)   | 373   | 3039   | 2007 | 2314   | 1052 | 113  | 390   |
| v/c Ratio               | 0.85  | 1.19   | 0.86 | 1.45   | 0.99 | 0.29 | 1.02  |
| Control Delay           | 56.5  | 109.8  | 38.1 | 222.4  | 95.8 | 62.3 | 107.9 |
| Queue Delay             | 0.0   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0  | 0.0   |
| Total Delay             | 56.5  | 109.8  | 38.1 | 222.4  | 95.8 | 62.3 | 107.9 |
| Queue Length 50th (ft)  | 341   | ~2247  | 705  | ~1838  | 446  | 114  | ~421  |
| Queue Length 95th (ft)  | m#510 | m#2256 | m512 | m#1489 | #502 | 175  | #542  |
| Internal Link Dist (ft) |       | 1419   | 756  |        |      | 675  |       |
| Turn Bay Length (ft)    |       |        |      |        | 300  |      |       |
| Base Capacity (vph)     | 437   | 2561   | 2596 | 1599   | 1060 | 395  | 381   |
| Starvation Cap Reductn  | 0     | 0      | 0    | 0      | 0    | 0    | 0     |
| Spillback Cap Reductn   | 0     | 0      | 0    | 0      | 0    | 0    | 0     |
| Storage Cap Reductn     | 0     | 0      | 0    | 0      | 0    | 0    | 0     |
| Reduced v/c Ratio       | 0.85  | 1.19   | 0.77 | 1.45   | 0.99 | 0.29 | 1.02  |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Mopac NBFR & Capital of Texas Hwy  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

| Movement                     | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL | SBT | SBR |
|------------------------------|------|-------|------|------|------|------|------|------|------|-----|-----|-----|
| Lane Configurations          |      |       |      |      |      |      |      |      |      |     |     |     |
| Traffic Volume (veh/h)       | 328  | 2857  | 0    | 0    | 1967 | 2129 | 905  | 99   | 320  | 0   | 0   | 0   |
| Future Volume (veh/h)        | 328  | 2857  | 0    | 0    | 1967 | 2129 | 905  | 99   | 320  | 0   | 0   | 0   |
| Number                       | 5    | 2     | 12   | 1    | 6    | 16   | 7    | 4    | 14   |     |     |     |
| 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 |     |     |     |
| Adj Sat Flow, veh/h/ln       | 1863 | 1881  | 0    | 0    | 1881 | 1881 | 1900 | 1900 | 1881 |     |     |     |
| Adj Flow Rate, veh/h         | 373  | 3039  | 0    | 0    | 2007 | 0    | 1052 | 112  | 0    |     |     |     |
| Adj No. of Lanes             | 1    | 2     | 0    | 0    | 3    | 1    | 3    | 1    | 1    |     |     |     |
| Peak Hour Factor             | 0.88 | 0.94  | 0.92 | 0.92 | 0.98 | 0.92 | 0.86 | 0.88 | 0.82 |     |     |     |
| Percent Heavy Veh, %         | 2    | 1     | 0    | 0    | 1    | 1    | 0    | 0    | 1    |     |     |     |
| Cap, veh/h                   | 508  | 2562  | 0    | 0    | 2147 | 668  | 1063 | 396  | 333  |     |     |     |
| Arrive On Green              | 0.52 | 1.00  | 0.00 | 0.00 | 0.42 | 0.00 | 0.21 | 0.21 | 0.00 |     |     |     |
| Sat Flow, veh/h              | 1774 | 3668  | 0    | 0    | 5305 | 1599 | 5103 | 1900 | 1599 |     |     |     |
| Grp Volume(v), veh/h         | 373  | 3039  | 0    | 0    | 2007 | 0    | 1052 | 112  | 0    |     |     |     |
| Grp Sat Flow(s),veh/h/ln     | 1774 | 1787  | 0    | 0    | 1712 | 1599 | 1701 | 1900 | 1599 |     |     |     |
| Q Serve(g_s), s              | 23.1 | 0.0   | 0.0  | 0.0  | 67.2 | 0.0  | 37.0 | 8.9  | 0.0  |     |     |     |
| Cycle Q Clear(g_c), s        | 23.1 | 0.0   | 0.0  | 0.0  | 67.2 | 0.0  | 37.0 | 8.9  | 0.0  |     |     |     |
| Prop In Lane                 | 1.00 |       | 0.00 | 0.00 |      | 1.00 | 1.00 |      | 1.00 |     |     |     |
| Lane Grp Cap(c), veh/h       | 508  | 2562  | 0    | 0    | 2147 | 668  | 1063 | 396  | 333  |     |     |     |
| V/C Ratio(X)                 | 0.73 | 1.19  | 0.00 | 0.00 | 0.93 | 0.00 | 0.99 | 0.28 | 0.00 |     |     |     |
| Avail Cap(c_a), veh/h        | 508  | 2562  | 0    | 0    | 2596 | 808  | 1063 | 396  | 333  |     |     |     |
| HCM Platoon Ratio            | 2.00 | 2.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |     |     |     |
| Upstream Filter(I)           | 0.27 | 0.27  | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |     |     |     |
| Uniform Delay (d), s/veh     | 36.0 | 0.0   | 0.0  | 0.0  | 50.0 | 0.0  | 71.1 | 59.9 | 0.0  |     |     |     |
| Incr Delay (d2), s/veh       | 2.6  | 85.1  | 0.0  | 0.0  | 5.8  | 0.0  | 24.9 | 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     | 13.8 | 30.3  | 0.0  | 0.0  | 32.9 | 0.0  | 19.9 | 4.7  | 0.0  |     |     |     |
| LnGrp Delay(d),s/veh         | 38.6 | 85.1  | 0.0  | 0.0  | 55.9 | 0.0  | 96.0 | 60.1 | 0.0  |     |     |     |
| LnGrp LOS                    | D    | F     |      |      | E    |      | F    | E    |      |     |     |     |
| Approach Vol, veh/h          |      | 3412  |      |      | 2007 |      |      | 1164 |      |     |     |     |
| Approach Delay, s/veh        |      | 80.0  |      |      | 55.9 |      |      | 92.5 |      |     |     |     |
| Approach LOS                 |      | E     |      |      | E    |      |      | F    |      |     |     |     |
| Timer                        | 1    | 2     | 3    | 4    | 5    | 6    | 7    | 8    |      |     |     |     |
| Assigned Phs                 |      | 2     |      | 4    | 5    | 6    |      |      |      |     |     |     |
| Phs Duration (G+Y+Rc), s     |      | 136.0 |      | 44.0 | 53.8 | 82.2 |      |      |      |     |     |     |
| Change Period (Y+Rc), s      |      | 7.0   |      | 6.5  | 7.0  | 7.0  |      |      |      |     |     |     |
| Max Green Setting (Gmax), s  |      | 129.0 |      | 37.5 | 31.0 | 91.0 |      |      |      |     |     |     |
| Max Q Clear Time (g_c+I1), s |      | 2.0   |      | 39.0 | 25.1 | 69.2 |      |      |      |     |     |     |
| Green Ext Time (p_c), s      |      | 22.5  |      | 0.0  | 0.1  | 6.0  |      |      |      |     |     |     |
| <b>Intersection Summary</b>  |      |       |      |      |      |      |      |      |      |     |     |     |
| HCM 2010 Ctrl Delay          |      |       |      | 74.9 |      |      |      |      |      |     |     |     |
| HCM 2010 LOS                 |      |       |      | E    |      |      |      |      |      |     |     |     |



| Lane Group              | WBR  | NBT   | NBR  | SBL  | SBT    |
|-------------------------|------|-------|------|------|--------|
| Lane Group Flow (vph)   | 274  | 4204  | 58   | 261  | 5585   |
| v/c Ratio               | 0.59 | 1.07  | 0.05 | 0.89 | 1.42   |
| Control Delay           | 74.3 | 59.8  | 1.7  | 92.5 | 214.7  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0  | 0.0    |
| Total Delay             | 74.3 | 59.8  | 1.7  | 92.5 | 214.7  |
| Queue Length 50th (ft)  | 171  | ~2022 | 1    | 299  | ~3269  |
| Queue Length 95th (ft)  | 188  | #2073 | 6    | m283 | m#2877 |
| Internal Link Dist (ft) |      | 1281  |      |      | 1273   |
| Turn Bay Length (ft)    |      |       | 430  | 550  |        |
| Base Capacity (vph)     | 537  | 3925  | 1199 | 340  | 3925   |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0    | 0      |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0    | 0      |
| Storage Cap Reductn     | 0    | 0     | 0    | 0    | 0      |
| Reduced v/c Ratio       | 0.51 | 1.07  | 0.05 | 0.77 | 1.42   |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

15: Capital of Texas Hwy & Barton Creek Plaza Dwy/Driveway E  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement                          | WBL  | WBR  | NBT    | NBR   | SBL                       | SBT   |
|-----------------------------------|------|------|--------|-------|---------------------------|-------|
| Lane Configurations               |      | ↔↔   | ↕↕↕    | ↗     | ↘                         | ↕↕↕   |
| Traffic Volume (vph)              | 0    | 211  | 3910   | 37    | 201                       | 5306  |
| Future Volume (vph)               | 0    | 211  | 3910   | 37    | 201                       | 5306  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900                      | 1900  |
| Total Lost time (s)               |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Lane Util. Factor                 |      | 0.88 | 0.91   | 1.00  | 1.00                      | 0.91  |
| Frt                               |      | 0.85 | 1.00   | 0.85  | 1.00                      | 1.00  |
| Flt Protected                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |      | 2842 | 5136   | 1553  | 1805                      | 5136  |
| Flt Permitted                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |      | 2842 | 5136   | 1553  | 1805                      | 5136  |
| Peak-hour factor, PHF             | 0.92 | 0.77 | 0.93   | 0.64  | 0.77                      | 0.95  |
| Adj. Flow (vph)                   | 0    | 274  | 4204   | 58    | 261                       | 5585  |
| RTOR Reduction (vph)              | 0    | 1    | 0      | 12    | 0                         | 0     |
| Lane Group Flow (vph)             | 0    | 273  | 4204   | 46    | 261                       | 5585  |
| Heavy Vehicles (%)                | 2%   | 0%   | 1%     | 4%    | 0%                        | 1%    |
| Turn Type                         |      | Over | NA     | Prot  | Prot                      | NA    |
| Protected Phases                  |      | 5    | 6      | 6     | 5                         | 6     |
| Permitted Phases                  |      |      |        |       |                           |       |
| Actuated Green, G (s)             |      | 29.4 | 137.6  | 137.6 | 29.4                      | 137.6 |
| Effective Green, g (s)            |      | 29.4 | 137.6  | 137.6 | 29.4                      | 137.6 |
| Actuated g/C Ratio                |      | 0.16 | 0.76   | 0.76  | 0.16                      | 0.76  |
| Clearance Time (s)                |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Vehicle Extension (s)             |      | 2.0  | 4.0    | 4.0   | 2.0                       | 4.0   |
| Lane Grp Cap (vph)                |      | 464  | 3926   | 1187  | 294                       | 3926  |
| v/s Ratio Prot                    |      | 0.10 | 0.82   | 0.03  | c0.14                     | c1.09 |
| v/s Ratio Perm                    |      |      |        |       |                           |       |
| v/c Ratio                         |      | 0.59 | 1.07   | 0.04  | 0.89                      | 1.42  |
| Uniform Delay, d1                 |      | 69.7 | 21.2   | 5.1   | 73.7                      | 21.2  |
| Progression Factor                |      | 1.00 | 1.00   | 1.00  | 0.94                      | 1.04  |
| Incremental Delay, d2             |      | 1.2  | 37.7   | 0.1   | 20.0                      | 191.3 |
| Delay (s)                         |      | 70.9 | 58.9   | 5.2   | 89.0                      | 213.3 |
| Level of Service                  |      | E    | E      | A     | F                         | F     |
| Approach Delay (s)                | 70.9 |      | 58.2   |       |                           | 207.7 |
| Approach LOS                      | E    |      | E      |       |                           | F     |
| <b>Intersection Summary</b>       |      |      |        |       |                           |       |
| HCM 2000 Control Delay            |      |      | 142.7  |       | HCM 2000 Level of Service | F     |
| HCM 2000 Volume to Capacity ratio |      |      | 1.33   |       |                           |       |
| Actuated Cycle Length (s)         |      |      | 180.0  |       | Sum of lost time (s)      | 13.0  |
| Intersection Capacity Utilization |      |      | 108.4% |       | ICU Level of Service      | G     |
| Analysis Period (min)             |      |      | 15     |       |                           |       |
| c Critical Lane Group             |      |      |        |       |                           |       |





| Lane Group              | WBL  | WBT  | NBL  | NBT  | SBT   | SBR  |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 145  | 1290 | 125  | 149  | 522   | 97   |
| v/c Ratio               | 0.16 | 0.65 | 0.68 | 0.23 | 1.19  | 0.22 |
| Control Delay           | 14.9 | 22.1 | 41.3 | 16.0 | 152.3 | 6.1  |
| Queue Delay             | 0.1  | 0.0  | 0.0  | 1.4  | 1.1   | 0.0  |
| Total Delay             | 15.1 | 22.1 | 41.3 | 17.4 | 153.3 | 6.1  |
| Queue Length 50th (ft)  | 59   | 385  | 47   | 56   | ~558  | 0    |
| Queue Length 95th (ft)  | m92  | m451 | m45  | m69  | #767  | 16   |
| Internal Link Dist (ft) |      | 522  |      | 175  | 200   |      |
| Turn Bay Length (ft)    |      |      | 70   |      |       | 90   |
| Base Capacity (vph)     | 925  | 1986 | 190  | 636  | 437   | 445  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 329  | 0     | 0    |
| Spillback Cap Reductn   | 287  | 0    | 0    | 0    | 46    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.23 | 0.65 | 0.66 | 0.49 | 1.34  | 0.22 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: US 290 WBFR & Victory Drive  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

| Movement                          | EBL  | EBT  | EBR    | WBL   | WBT                       | WBR  | NBL   | NBT   | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|--------|-------|---------------------------|------|-------|-------|------|------|-------|------|
| Lane Configurations               |      |      |        |       |                           |      |       |       |      |      |       |      |
| Traffic Volume (vph)              | 0    | 0    | 0      | 141   | 1083                      | 129  | 71    | 118   | 0    | 0    | 465   | 73   |
| Future Volume (vph)               | 0    | 0    | 0      | 141   | 1083                      | 129  | 71    | 118   | 0    | 0    | 465   | 73   |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900                      | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      |        | 5.5   | 5.5                       |      | 5.5   | 4.5   |      |      | 4.5   | 4.5  |
| Lane Util. Factor                 |      |      |        | 1.00  | 0.95                      |      | 1.00  | 1.00  |      |      | 1.00  | 1.00 |
| Frbp, ped/bikes                   |      |      |        | 1.00  | 1.00                      |      | 1.00  | 1.00  |      |      | 1.00  | 0.98 |
| Flpb, ped/bikes                   |      |      |        | 1.00  | 1.00                      |      | 1.00  | 1.00  |      |      | 1.00  | 1.00 |
| Frt                               |      |      |        | 1.00  | 0.98                      |      | 1.00  | 1.00  |      |      | 1.00  | 0.85 |
| Flt Protected                     |      |      |        | 0.95  | 1.00                      |      | 0.95  | 1.00  |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 |      |      |        | 1612  | 3445                      |      | 1805  | 1827  |      |      | 1792  | 1476 |
| Flt Permitted                     |      |      |        | 0.95  | 1.00                      |      | 0.14  | 1.00  |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |      |      |        | 1612  | 3445                      |      | 268   | 1827  |      |      | 1792  | 1476 |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92   | 0.97  | 0.95                      | 0.86 | 0.57  | 0.79  | 0.92 | 0.92 | 0.89  | 0.75 |
| Adj. Flow (vph)                   | 0    | 0    | 0      | 145   | 1140                      | 150  | 125   | 149   | 0    | 0    | 522   | 97   |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 0     | 8                         | 0    | 0     | 0     | 0    | 0    | 0     | 73   |
| Lane Group Flow (vph)             | 0    | 0    | 0      | 145   | 1282                      | 0    | 125   | 149   | 0    | 0    | 522   | 24   |
| Confl. Peds. (#/hr)               |      |      |        |       |                           | 1    | 6     |       |      |      |       | 6    |
| Confl. Bikes (#/hr)               |      |      |        |       |                           |      |       |       |      |      |       | 3    |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%     | 12%   | 2%                        | 8%   | 0%    | 4%    | 2%   | 2%   | 6%    | 7%   |
| Turn Type                         |      |      |        | Split | NA                        |      | pm+pt | NA    |      |      | NA    | Perm |
| Protected Phases                  |      |      |        | 7 8   | 7 8                       |      | 2     | 1 2 6 |      |      | 1 6   |      |
| Permitted Phases                  |      |      |        |       |                           |      | 1 2 6 |       |      |      |       | 1 6  |
| Actuated Green, G (s)             |      |      |        | 77.0  | 77.0                      |      | 42.0  | 47.5  |      |      | 32.9  | 32.9 |
| Effective Green, g (s)            |      |      |        | 77.0  | 77.0                      |      | 37.5  | 42.0  |      |      | 32.9  | 32.9 |
| Actuated g/C Ratio                |      |      |        | 0.57  | 0.57                      |      | 0.28  | 0.31  |      |      | 0.24  | 0.24 |
| Clearance Time (s)                |      |      |        |       |                           |      | 5.5   |       |      |      |       |      |
| Vehicle Extension (s)             |      |      |        |       |                           |      | 1.5   |       |      |      |       |      |
| Lane Grp Cap (vph)                |      |      |        | 919   | 1964                      |      | 178   | 568   |      |      | 436   | 359  |
| v/s Ratio Prot                    |      |      |        | 0.09  | c0.37                     |      | c0.05 | 0.08  |      |      | c0.29 |      |
| v/s Ratio Perm                    |      |      |        |       |                           |      | 0.15  |       |      |      |       | 0.02 |
| v/c Ratio                         |      |      |        | 0.16  | 0.65                      |      | 0.70  | 0.26  |      |      | 1.20  | 0.07 |
| Uniform Delay, d1                 |      |      |        | 13.7  | 19.9                      |      | 40.2  | 34.9  |      |      | 51.0  | 39.2 |
| Progression Factor                |      |      |        | 1.07  | 1.05                      |      | 0.74  | 0.49  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2             |      |      |        | 0.0   | 0.6                       |      | 8.9   | 0.1   |      |      | 109.1 | 0.0  |
| Delay (s)                         |      |      |        | 14.6  | 21.4                      |      | 38.9  | 17.1  |      |      | 160.2 | 39.3 |
| Level of Service                  |      |      |        | B     | C                         |      | D     | B     |      |      | F     | D    |
| Approach Delay (s)                |      | 0.0  |        |       | 20.7                      |      |       | 27.0  |      |      | 141.2 |      |
| Approach LOS                      |      | A    |        |       | C                         |      |       | C     |      |      | F     |      |
| <b>Intersection Summary</b>       |      |      |        |       |                           |      |       |       |      |      |       |      |
| HCM 2000 Control Delay            |      |      | 53.5   |       | HCM 2000 Level of Service |      |       |       |      |      | D     |      |
| HCM 2000 Volume to Capacity ratio |      |      | 0.88   |       |                           |      |       |       |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 135.0  |       | Sum of lost time (s)      |      |       |       |      |      | 26.0  |      |
| Intersection Capacity Utilization |      |      | 112.7% |       | ICU Level of Service      |      |       |       |      |      | H     |      |
| Analysis Period (min)             |      |      | 15     |       |                           |      |       |       |      |      |       |      |
| c Critical Lane Group             |      |      |        |       |                           |      |       |       |      |      |       |      |



| Lane Group              | EBT   | NBT  | NBR  | SBL  | SBT  |
|-------------------------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 2226  | 155  | 129  | 521  | 155  |
| v/c Ratio               | 1.10  | 0.23 | 0.23 | 0.88 | 0.17 |
| Control Delay           | 89.4  | 32.1 | 15.8 | 26.6 | 3.6  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 3.0  | 1.8  |
| Total Delay             | 89.4  | 32.1 | 15.8 | 29.6 | 5.5  |
| Queue Length 50th (ft)  | ~820  | 96   | 35   | 240  | 14   |
| Queue Length 95th (ft)  | m#867 | 133  | 72   | m168 | m14  |
| Internal Link Dist (ft) | 53    | 253  |      |      | 175  |
| Turn Bay Length (ft)    |       |      | 125  | 70   |      |
| Base Capacity (vph)     | 2031  | 661  | 556  | 592  | 912  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 27   | 615  |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.10  | 0.23 | 0.23 | 0.92 | 0.52 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

17: Pack Saddle Pass & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement                          | EBL   | EBT   | EBR    | WBL  | WBT  | WBR  | NBL  | NBT   | NBR   | SBL   | SBT     | SBR                       |      |
|-----------------------------------|-------|-------|--------|------|------|------|------|-------|-------|-------|---------|---------------------------|------|
| Lane Configurations               |       | ↔↕↔   |        |      |      |      |      | ↑     | ↗     | ↘     | ↑       |                           |      |
| Traffic Volume (vph)              | 65    | 1920  | 81     | 0    | 0    | 0    | 0    | 124   | 106   | 453   | 138     | 0                         |      |
| Future Volume (vph)               | 65    | 1920  | 81     | 0    | 0    | 0    | 0    | 124   | 106   | 453   | 138     | 0                         |      |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900   | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  | 1900    | 1900                      |      |
| Total Lost time (s)               |       | 6.0   |        |      |      |      |      | 4.5   | 4.5   | 5.5   | 4.5     |                           |      |
| Lane Util. Factor                 |       | 0.91  |        |      |      |      |      | 1.00  | 1.00  | 1.00  | 1.00    |                           |      |
| Frbp, ped/bikes                   |       | 1.00  |        |      |      |      |      | 1.00  | 1.00  | 1.00  | 1.00    |                           |      |
| Flpb, ped/bikes                   |       | 1.00  |        |      |      |      |      | 1.00  | 1.00  | 1.00  | 1.00    |                           |      |
| Frt                               |       | 0.99  |        |      |      |      |      | 1.00  | 0.85  | 1.00  | 1.00    |                           |      |
| Flt Protected                     |       | 1.00  |        |      |      |      |      | 1.00  | 1.00  | 0.95  | 1.00    |                           |      |
| Satd. Flow (prot)                 |       | 5072  |        |      |      |      |      | 1900  | 1468  | 1719  | 1759    |                           |      |
| Flt Permitted                     |       | 1.00  |        |      |      |      |      | 1.00  | 1.00  | 0.59  | 1.00    |                           |      |
| Satd. Flow (perm)                 |       | 5072  |        |      |      |      |      | 1900  | 1468  | 1074  | 1759    |                           |      |
| Peak-hour factor, PHF             | 0.81  | 0.94  | 0.79   | 0.92 | 0.92 | 0.92 | 0.92 | 0.80  | 0.82  | 0.87  | 0.89    | 0.92                      |      |
| Adj. Flow (vph)                   | 80    | 2043  | 103    | 0    | 0    | 0    | 0    | 155   | 129   | 521   | 155     | 0                         |      |
| RTOR Reduction (vph)              | 0     | 4     | 0      | 0    | 0    | 0    | 0    | 0     | 48    | 0     | 0       | 0                         |      |
| Lane Group Flow (vph)             | 0     | 2222  | 0      | 0    | 0    | 0    | 0    | 155   | 81    | 521   | 155     | 0                         |      |
| Confl. Bikes (#/hr)               |       |       | 3      |      |      |      |      |       | 1     |       |         |                           |      |
| Heavy Vehicles (%)                | 10%   | 1%    | 0%     | 2%   | 2%   | 2%   | 2%   | 0%    | 10%   | 5%    | 8%      | 2%                        |      |
| Turn Type                         | Split | NA    |        |      |      |      |      | NA    | Prot  | D.P+P | NA      |                           |      |
| Protected Phases                  | 8     | 8     |        |      |      |      |      | 1 2 6 | 1 2 6 | 7     | 1 2 6 7 |                           |      |
| Permitted Phases                  |       |       |        |      |      |      |      |       |       | 1 2 6 |         |                           |      |
| Actuated Green, G (s)             |       | 54.0  |        |      |      |      |      | 47.5  | 47.5  | 65.0  | 69.5    |                           |      |
| Effective Green, g (s)            |       | 54.0  |        |      |      |      |      | 42.0  | 42.0  | 60.5  | 64.0    |                           |      |
| Actuated g/C Ratio                |       | 0.40  |        |      |      |      |      | 0.31  | 0.31  | 0.45  | 0.47    |                           |      |
| Clearance Time (s)                |       | 6.0   |        |      |      |      |      |       |       | 5.5   |         |                           |      |
| Vehicle Extension (s)             |       | 1.5   |        |      |      |      |      |       |       | 1.5   |         |                           |      |
| Lane Grp Cap (vph)                |       | 2028  |        |      |      |      |      | 591   | 456   | 564   | 833     |                           |      |
| v/s Ratio Prot                    |       | c0.44 |        |      |      |      |      | 0.08  | 0.06  | c0.12 | 0.09    |                           |      |
| v/s Ratio Perm                    |       |       |        |      |      |      |      |       |       | c0.29 |         |                           |      |
| v/c Ratio                         |       | 1.10  |        |      |      |      |      | 0.26  | 0.18  | 0.92  | 0.19    |                           |      |
| Uniform Delay, d1                 |       | 40.5  |        |      |      |      |      | 34.9  | 33.9  | 35.8  | 20.5    |                           |      |
| Progression Factor                |       | 1.02  |        |      |      |      |      | 1.00  | 1.00  | 0.61  | 0.20    |                           |      |
| Incremental Delay, d2             |       | 50.4  |        |      |      |      |      | 0.1   | 0.1   | 8.3   | 0.0     |                           |      |
| Delay (s)                         |       | 91.7  |        |      |      |      |      | 35.0  | 34.0  | 30.0  | 4.2     |                           |      |
| Level of Service                  |       | F     |        |      |      |      |      | C     | C     | C     | A       |                           |      |
| Approach Delay (s)                |       | 91.7  |        | 0.0  |      |      |      | 34.5  |       |       | 24.1    |                           |      |
| Approach LOS                      |       | F     |        | A    |      |      |      | C     |       |       | C       |                           |      |
| <b>Intersection Summary</b>       |       |       |        |      |      |      |      |       |       |       |         |                           |      |
| HCM 2000 Control Delay            |       |       | 72.2   |      |      |      |      |       |       |       |         | HCM 2000 Level of Service | E    |
| HCM 2000 Volume to Capacity ratio |       |       | 1.05   |      |      |      |      |       |       |       |         |                           |      |
| Actuated Cycle Length (s)         |       |       | 135.0  |      |      |      |      |       |       |       |         | Sum of lost time (s)      | 26.0 |
| Intersection Capacity Utilization |       |       | 112.7% |      |      |      |      |       |       |       |         | ICU Level of Service      | H    |
| Analysis Period (min)             |       |       | 15     |      |      |      |      |       |       |       |         |                           |      |

c Critical Lane Group






















| Lane Group              | WBL   | WBT  | WBR  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 554   | 1153 | 587  | 400  | 696  | 1145 | 209  |
| v/c Ratio               | 1.07  | 1.07 | 0.86 | 0.77 | 0.32 | 0.80 | 0.38 |
| Control Delay           | 106.0 | 96.0 | 41.0 | 23.4 | 7.8  | 55.0 | 17.2 |
| Queue Delay             | 1.5   | 2.0  | 0.0  | 23.8 | 1.7  | 0.0  | 0.0  |
| Total Delay             | 107.5 | 98.0 | 41.0 | 47.2 | 9.5  | 55.0 | 17.2 |
| Queue Length 50th (ft)  | ~654  | ~684 | 342  | 74   | 58   | 382  | 53   |
| Queue Length 95th (ft)  | #913  | #830 | #562 | m83  | m66  | 440  | 103  |
| Internal Link Dist (ft) |       | 53   |      |      | 174  | 314  |      |
| Turn Bay Length (ft)    |       |      |      |      |      |      | 100  |
| Base Capacity (vph)     | 520   | 1078 | 683  | 517  | 2168 | 1438 | 551  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 121  | 1250 | 0    | 0    |
| Spillback Cap Reductn   | 2     | 5    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.07  | 1.07 | 0.86 | 1.01 | 0.76 | 0.80 | 0.38 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

18: US 290 WBFR & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |   |   |   |  |  |  |  |  |   |   |  |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 868   | 737   | 569   | 340  | 633   | 0   | 0   | 1088  | 171   |
| Future Volume (vph)               | 0   | 0   | 0   | 868   | 737   | 569   | 340  | 633   | 0   | 0   | 1088  | 171   |
| 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  | 5.0   |   |   | 5.0   | 5.0   |
| Lane Util. Factor                 |   |   |   | 0.91  | 0.91  | 1.00  | 1.00   | 0.95  |   |   | 0.91  | 1.00  |
| Frt                               |   |   |   | 1.00  | 1.00  | 0.85  | 1.00   | 1.00  |   |   | 1.00  | 0.85  |
| Flt Protected                     |   |   |   | 0.95  | 0.98  | 1.00  | 0.95   | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (prot)                 |   |   |   | 1626  | 3370  | 1615  | 1805   | 3574  |   |   | 5136  | 1615  |
| Flt Permitted                     |   |   |   | 0.95  | 0.98  | 1.00  | 0.95   | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (perm)                 |   |   |   | 1626  | 3370  | 1615  | 1805   | 3574  |   |   | 5136  | 1615  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.94  | 0.94  | 0.97  | 0.85   | 0.91  | 0.92  | 0.92  | 0.95  | 0.82  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 923   | 784   | 587   | 400  | 696   | 0   | 0   | 1145  | 209   |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 165   | 0  | 0   | 0   | 0   | 0   | 99  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 554   | 1153  | 422   | 400  | 696   | 0   | 0   | 1145  | 110   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 1%  | 1%  | 0%  | 0%   | 1%  | 2%  | 2%  | 1%  | 0%  |
| Turn Type                         |   |   |   | Perm  | NA  | Perm  | Prot   | NA  |   |   | NA  | Perm  |
| Protected Phases                  |   |   |   |   | 8 9   |   | 4 13   | 1 4 13  |   |   | 1   |   |
| Permitted Phases                  |   |   |   | 8 9   |   | 8 9   |  |   |   |   |   | 1   |
| Actuated Green, G (s)             |   |   |   | 49.0  | 49.0  | 49.0  | 43.0   | 90.0  |   |   | 42.0  | 42.0  |
| Effective Green, g (s)            |   |   |   | 49.0  | 49.0  | 49.0  | 38.0   | 90.0  |   |   | 42.0  | 42.0  |
| Actuated g/C Ratio                |   |   |   | 0.33  | 0.33  | 0.33  | 0.25   | 0.60  |   |   | 0.28  | 0.28  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   | 5.0   | 5.0   |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   | 1.0   | 1.0   |
| Lane Grp Cap (vph)                |   |   |   | 531   | 1100  | 527   | 457  | 2144  |   |   | 1438  | 452   |
| v/s Ratio Prot                    |   |   |   |   |   |   | c0.22  | 0.19  |   |   | c0.22   |   |
| v/s Ratio Perm                    |   |   |   | 0.34  | 0.34  | 0.26  |  |   |   |   |   | 0.07  |
| v/c Ratio                         |   |   |   | 1.04  | 1.05  | 0.80  | 0.88   | 0.32  |   |   | 0.80  | 0.24  |
| Uniform Delay, d1                 |   |   |   | 50.5  | 50.5  | 46.1  | 53.7   | 14.9  |   |   | 50.0  | 41.7  |
| Progression Factor                |   |   |   | 1.00  | 1.00  | 1.00  | 0.37   | 0.53  |   |   | 1.00  | 1.00  |
| Incremental Delay, d2             |   |   |   | 50.8  | 40.7  | 8.1   | 8.1  | 0.0   |   |   | 2.9   | 0.1   |
| Delay (s)                         |   |   |   | 101.3   | 91.2  | 54.1  | 27.8   | 7.9   |   |   | 53.0  | 41.8  |
| Level of Service                  |   |   |   | F   | F   | D   | C  | A   |   |   | D   | D   |
| Approach Delay (s)                |   | 0.0   |   |   | 84.1  |   |  | 15.1  |   |   | 51.3  |   |
| Approach LOS                      |   | A   |   |   | F   |   |  | B   |   |   | D   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 58.8  | HCM 2000 Level of Service   |   |   |  | E   |   |   |   |   |
| HCM 2000 Volume to Capacity ratio |   |   | 0.96  |   |   |   |  |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 150.0   | Sum of lost time (s)  |   |   |  | 27.0  |   |   |   |   |
| Intersection Capacity Utilization |   |   | 118.1%  | ICU Level of Service  |   |   |  | H   |   |   |   |   |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |



| Lane Group              | EBL   | EBT   | EBR   | NBT  | NBR  | SBL  | SBT  |
|-------------------------|-------|-------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 260   | 568   | 476   | 790  | 462  | 598  | 1583 |
| v/c Ratio               | 0.94  | 1.04  | 1.50  | 0.92 | 1.02 | 0.59 | 0.57 |
| Control Delay           | 103.2 | 108.6 | 275.3 | 78.3 | 76.9 | 3.8  | 1.6  |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 2.4  | 0.0  | 5.3  | 3.1  |
| Total Delay             | 103.2 | 108.6 | 275.3 | 80.7 | 76.9 | 9.1  | 4.7  |
| Queue Length 50th (ft)  | 255   | ~313  | ~571  | 282  | ~277 | 35   | 24   |
| Queue Length 95th (ft)  | #399  | #437  | #799  | #361 | #449 | m59  | m8   |
| Internal Link Dist (ft) |       | 62    |       | 300  |      |      | 174  |
| Turn Bay Length (ft)    |       |       |       |      | 100  |      |      |
| Base Capacity (vph)     | 276   | 548   | 317   | 856  | 454  | 1014 | 2763 |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0    | 0    | 345  | 1044 |
| Spillback Cap Reductn   | 0     | 0     | 0     | 24   | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.94  | 1.04  | 1.50  | 0.95 | 1.02 | 0.89 | 0.92 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

19: Menchaca Road & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM

| Movement                          | EBL   | EBT   | EBR    | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL   | SBT    | SBR  |
|-----------------------------------|-------|-------|--------|------|------|------|------|------|-------|-------|--------|------|
| Lane Configurations               |       |       |        |      |      |      |      |      |       |       |        |      |
| Traffic Volume (vph)              | 224   | 545   | 438    | 0    | 0    | 0    | 0    | 735  | 397   | 508   | 1488   | 0    |
| Future Volume (vph)               | 224   | 545   | 438    | 0    | 0    | 0    | 0    | 735  | 397   | 508   | 1488   | 0    |
| 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    |      |      |      |      | 5.0  | 5.0   | 5.0   | 5.0    |      |
| Lane Util. Factor                 | 1.00  | 0.95  | 1.00   |      |      |      |      | 0.91 | 1.00  | 1.00  | 0.95   |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  | 0.99   |      |      |      |      | 1.00 | 0.99  | 1.00  | 1.00   |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00   |      |      |      |      | 1.00 | 1.00  | 1.00  | 1.00   |      |
| Frt                               | 1.00  | 1.00  | 0.85   |      |      |      |      | 1.00 | 0.85  | 1.00  | 1.00   |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.95  | 1.00   |      |
| Satd. Flow (prot)                 | 1805  | 3574  | 1593   |      |      |      |      | 5136 | 1578  | 1770  | 3574   |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.95  | 1.00   |      |
| Satd. Flow (perm)                 | 1805  | 3574  | 1593   |      |      |      |      | 5136 | 1578  | 1770  | 3574   |      |
| Peak-hour factor, PHF             | 0.86  | 0.96  | 0.92   | 0.92 | 0.92 | 0.92 | 0.92 | 0.93 | 0.86  | 0.85  | 0.94   | 0.92 |
| Adj. Flow (vph)                   | 260   | 568   | 476    | 0    | 0    | 0    | 0    | 790  | 462   | 598   | 1583   | 0    |
| RTOR Reduction (vph)              | 0     | 0     | 74     | 0    | 0    | 0    | 0    | 0    | 192   | 0     | 0      | 0    |
| Lane Group Flow (vph)             | 260   | 568   | 402    | 0    | 0    | 0    | 0    | 790  | 270   | 598   | 1583   | 0    |
| Confl. Bikes (#/hr)               |       |       | 1      |      |      |      |      |      | 1     |       |        |      |
| Heavy Vehicles (%)                | 0%    | 1%    | 0%     | 2%   | 2%   | 2%   | 2%   | 1%   | 1%    | 2%    | 1%     | 2%   |
| Turn Type                         | Perm  | NA    | Perm   |      |      |      |      | NA   | Perm  | Prot  | NA     |      |
| Protected Phases                  |       | 4 8   |        |      |      |      |      | 13   |       | 1 9   | 1 9 13 |      |
| Permitted Phases                  | 4 8   |       | 4 8    |      |      |      |      |      | 13    |       |        |      |
| Actuated Green, G (s)             | 23.0  | 23.0  | 23.0   |      |      |      |      | 25.0 | 25.0  | 86.0  | 116.0  |      |
| Effective Green, g (s)            | 23.0  | 23.0  | 23.0   |      |      |      |      | 25.0 | 25.0  | 86.0  | 116.0  |      |
| Actuated g/C Ratio                | 0.15  | 0.15  | 0.15   |      |      |      |      | 0.17 | 0.17  | 0.57  | 0.77   |      |
| Clearance Time (s)                |       |       |        |      |      |      |      | 5.0  | 5.0   |       |        |      |
| Vehicle Extension (s)             |       |       |        |      |      |      |      | 1.0  | 1.0   |       |        |      |
| Lane Grp Cap (vph)                | 276   | 548   | 244    |      |      |      |      | 856  | 263   | 1014  | 2763   |      |
| v/s Ratio Prot                    |       | 0.16  |        |      |      |      |      | 0.15 |       | c0.34 | c0.44  |      |
| v/s Ratio Perm                    | 0.14  |       | c0.25  |      |      |      |      |      | c0.17 |       |        |      |
| v/c Ratio                         | 0.94  | 1.04  | 1.65   |      |      |      |      | 0.92 | 1.03  | 0.59  | 0.57   |      |
| Uniform Delay, d1                 | 62.8  | 63.5  | 63.5   |      |      |      |      | 61.6 | 62.5  | 20.6  | 6.9    |      |
| Progression Factor                | 1.00  | 1.00  | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.12  | 0.17   |      |
| Incremental Delay, d2             | 38.3  | 48.2  | 309.7  |      |      |      |      | 16.9 | 62.9  | 0.3   | 0.1    |      |
| Delay (s)                         | 101.1 | 111.7 | 373.2  |      |      |      |      | 78.5 | 125.4 | 2.8   | 1.2    |      |
| Level of Service                  | F     | F     | F      |      |      |      |      | E    | F     | A     | A      |      |
| Approach Delay (s)                |       | 205.1 |        |      | 0.0  |      |      | 95.8 |       |       | 1.7    |      |
| Approach LOS                      |       | F     |        |      | A    |      |      | F    |       |       | A      |      |
| <b>Intersection Summary</b>       |       |       |        |      |      |      |      |      |       |       |        |      |
| HCM 2000 Control Delay            |       |       | 82.5   |      |      |      |      |      |       |       |        | F    |
| HCM 2000 Volume to Capacity ratio |       |       | 0.93   |      |      |      |      |      |       |       |        |      |
| Actuated Cycle Length (s)         |       |       | 150.0  |      |      |      |      |      |       |       | 27.0   |      |
| Intersection Capacity Utilization |       |       | 118.1% |      |      |      |      |      |       |       |        | H    |
| Analysis Period (min)             |       |       | 15     |      |      |      |      |      |       |       |        |      |

c Critical Lane Group



| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 12   |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 55   | 103  | 180  | 16   | 98   | 5    | 166  | 16   | 41   | 4    | 24   | 32   |
| Future Vol, veh/h        | 55   | 103  | 180  | 16   | 98   | 5    | 166  | 16   | 41   | 4    | 24   | 32   |
| Conflicting Peds, #/hr   | 14   | 0    | 9    | 9    | 0    | 14   | 6    | 0    | 11   | 11   | 0    | 6    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 68   | 87   | 87   | 50   | 76   | 50   | 80   | 75   | 60   | 60   | 56   | 75   |
| Heavy Vehicles, %        | 0    | 0    | 7    | 0    | 0    | 0    | 5    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 81   | 118  | 207  | 32   | 129  | 10   | 208  | 21   | 68   | 7    | 43   | 43   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-----|-----|
| Conflicting Flow All | 153    | 0 | 0 | 334    | 0 | 0 | 640    | 610 | 242 | 651    | 708 | 154 |
| Stage 1              | -      | - | - | -      | - | - | 393    | 393 | -   | 212    | 212 | -   |
| Stage 2              | -      | - | - | -      | - | - | 247    | 217 | -   | 439    | 496 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.15   | 6.5 | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.15   | 5.5 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.15   | 5.5 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.545  | 4   | 3.3 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1440   | - | - | 1237   | - | - | 384    | 412 | 802 | 384    | 362 | 897 |
| Stage 1              | -      | - | - | -      | - | - | 626    | 609 | -   | 795    | 731 | -   |
| Stage 2              | -      | - | - | -      | - | - | 750    | 727 | -   | 601    | 549 | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |     |     |        |     |     |
| Mov Cap-1 Maneuver   | 1421   | - | - | 1226   | - | - | 300    | 363 | 787 | 303    | 319 | 880 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 300    | 363 | -   | 303    | 319 | -   |
| Stage 1              | -      | - | - | -      | - | - | 576    | 560 | -   | 728    | 701 | -   |
| Stage 2              | -      | - | - | -      | - | - | 648    | 697 | -   | 485    | 505 | -   |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|----|--|--|
| HCM Control Delay, s | 1.5 |  |  | 1.5 |  |  | 31.6 |  |  | 15 |  |  |
| HCM LOS              |     |  |  |     |  |  | D    |  |  | C  |  |  |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 300   | 616   | 1421  | -   | -   | 1226  | -   | -   | 450   |
| HCM Lane V/C Ratio    | 0.692 | 0.146 | 0.057 | -   | -   | 0.026 | -   | -   | 0.205 |
| HCM Control Delay (s) | 40.1  | 11.8  | 7.7   | 0   | -   | 8     | 0   | -   | 15    |
| HCM Lane LOS          | E     | B     | A     | A   | -   | A     | A   | -   | C     |
| HCM 95th %tile Q(veh) | 4.8   | 0.5   | 0.2   | -   | -   | 0.1   | -   | -   | 0.8   |

21: S Lamar Blvd & Driveway A  
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 1-2026 Site+Forecasted PM



| Movement                          | EBL   | EBR  | NBL  | NBT                  | SBT  | SBR  |      |      |      |  |  |
|-----------------------------------|-------|------|------|----------------------|------|------|------|------|------|--|--|
| Lane Configurations               |       |      |      |                      |      |      |      |      |      |  |  |
| Traffic Volume (veh/h)            | 0     | 0    | 0    | 1944                 | 1749 | 61   |      |      |      |  |  |
| Future Volume (Veh/h)             | 0     | 0    | 0    | 1944                 | 1749 | 61   |      |      |      |  |  |
| Sign Control                      | Stop  |      |      | Free                 |      | Free |      |      |      |  |  |
| Grade                             | 0%    |      |      | 0%                   |      | 0%   |      |      |      |  |  |
| Peak Hour Factor                  | 0.92  | 0.92 | 0.92 | 0.92                 | 0.92 | 0.92 |      |      |      |  |  |
| Hourly flow rate (vph)            | 0     | 0    | 0    | 2113                 | 1901 | 66   |      |      |      |  |  |
| Pedestrians                       |       |      |      |                      |      |      |      |      |      |  |  |
| Lane Width (ft)                   |       |      |      |                      |      |      |      |      |      |  |  |
| Walking Speed (ft/s)              |       |      |      |                      |      |      |      |      |      |  |  |
| Percent Blockage                  |       |      |      |                      |      |      |      |      |      |  |  |
| Right turn flare (veh)            |       |      |      |                      |      |      |      |      |      |  |  |
| Median type                       |       |      |      | None                 | None |      |      |      |      |  |  |
| Median storage (veh)              |       |      |      |                      |      |      |      |      |      |  |  |
| Upstream signal (ft)              |       |      |      | 408                  | 941  |      |      |      |      |  |  |
| pX, platoon unblocked             | 0.70  |      |      |                      |      |      |      |      |      |  |  |
| vC, conflicting volume            | 2462  | 508  | 1967 |                      |      |      |      |      |      |  |  |
| vC1, stage 1 conf vol             |       |      |      |                      |      |      |      |      |      |  |  |
| vC2, stage 2 conf vol             |       |      |      |                      |      |      |      |      |      |  |  |
| vCu, unblocked vol                | 914   | 508  | 1967 |                      |      |      |      |      |      |  |  |
| tC, single (s)                    | 6.8   | 6.9  | 4.1  |                      |      |      |      |      |      |  |  |
| tC, 2 stage (s)                   |       |      |      |                      |      |      |      |      |      |  |  |
| tF (s)                            | 3.5   | 3.3  | 2.2  |                      |      |      |      |      |      |  |  |
| p0 queue free %                   | 100   | 100  | 100  |                      |      |      |      |      |      |  |  |
| cM capacity (veh/h)               | 189   | 510  | 292  |                      |      |      |      |      |      |  |  |
| Direction, Lane #                 | EB 1  | NB 1 | NB 2 | NB 3                 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |  |  |
| Volume Total                      | 0     | 528  | 528  | 528                  | 528  | 543  | 543  | 543  | 338  |  |  |
| Volume Left                       | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |  |
| Volume Right                      | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 66   |  |  |
| cSH                               | 1700  | 1700 | 1700 | 1700                 | 1700 | 1700 | 1700 | 1700 | 1700 |  |  |
| Volume to Capacity                | 0.00  | 0.31 | 0.31 | 0.31                 | 0.31 | 0.32 | 0.32 | 0.32 | 0.20 |  |  |
| Queue Length 95th (ft)            | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |  |
| Control Delay (s)                 | 0.0   | 0.0  | 0.0  | 0.0                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |  |
| Lane LOS                          | A     |      |      |                      |      |      |      |      |      |  |  |
| Approach Delay (s)                | 0.0   | 0.0  |      |                      |      |      | 0.0  |      |      |  |  |
| Approach LOS                      | A     |      |      |                      |      |      |      |      |      |  |  |
| Intersection Summary              |       |      |      |                      |      |      |      |      |      |  |  |
| Average Delay                     | 0.0   |      |      |                      |      |      |      |      |      |  |  |
| Intersection Capacity Utilization | 31.5% |      |      | ICU Level of Service |      |      |      | A    |      |  |  |
| Analysis Period (min)             | 15    |      |      |                      |      |      |      |      |      |  |  |

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.6  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    |      |      | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 97   | 0    | 0    | 1479 | 12   |
| Future Vol, veh/h        | 0    | 97   | 0    | 0    | 1479 | 12   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | -    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 105  | 0    | 0    | 1608 | 13   |

| Major/Minor          | Minor2 |      | Major2 |   |
|----------------------|--------|------|--------|---|
| Conflicting Flow All | -      | 811  | -      | 0 |
| Stage 1              | -      | -    | -      | - |
| Stage 2              | -      | -    | -      | - |
| Critical Hdwy        | -      | 7.14 | -      | - |
| Critical Hdwy Stg 1  | -      | -    | -      | - |
| Critical Hdwy Stg 2  | -      | -    | -      | - |
| Follow-up Hdwy       | -      | 3.92 | -      | - |
| Pot Cap-1 Maneuver   | 0      | 277  | -      | - |
| Stage 1              | 0      | -    | -      | - |
| Stage 2              | 0      | -    | -      | - |
| Platoon blocked, %   |        |      | -      | - |
| Mov Cap-1 Maneuver   | -      | 277  | -      | - |
| Mov Cap-2 Maneuver   | -      | -    | -      | - |
| Stage 1              | -      | -    | -      | - |
| Stage 2              | -      | -    | -      | - |

| Approach             | EB   | SB |
|----------------------|------|----|
| HCM Control Delay, s | 25.8 | 0  |
| HCM LOS              | D    |    |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-----|
| Capacity (veh/h)      | 277   | -   | -   |
| HCM Lane V/C Ratio    | 0.381 | -   | -   |
| HCM Control Delay (s) | 25.8  | -   | -   |
| HCM Lane LOS          | D     | -   | -   |
| HCM 95th %tile Q(veh) | 1.7   | -   | -   |

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.2  |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↗    | ↑↑↑  | ↘    |      |      |
| Traffic Vol, veh/h       | 0    | 84   | 1190 | 67   | 0    | 0    |
| Future Vol, veh/h        | 0    | 84   | 1190 | 67   | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 0    | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | -    |
| Grade, %                 | 0    | -    | 0    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 91   | 1293 | 73   | 0    | 0    |

| Major/Minor          | Minor1 | Major1 |   |
|----------------------|--------|--------|---|
| Conflicting Flow All | -      | 647    | 0 |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |
| Critical Hdwy        | -      | 7.14   | - |
| Critical Hdwy Stg 1  | -      | -      | - |
| Critical Hdwy Stg 2  | -      | -      | - |
| Follow-up Hdwy       | -      | 3.92   | - |
| Pot Cap-1 Maneuver   | 0      | 355    | - |
| Stage 1              | 0      | -      | - |
| Stage 2              | 0      | -      | - |
| Platoon blocked, %   |        | -      | - |
| Mov Cap-1 Maneuver   | -      | 355    | - |
| Mov Cap-2 Maneuver   | -      | -      | - |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |

| Approach             | WB   | NB |
|----------------------|------|----|
| HCM Control Delay, s | 18.6 | 0  |
| HCM LOS              | C    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 |
|-----------------------|-----|----------|
| Capacity (veh/h)      | -   | 355      |
| HCM Lane V/C Ratio    | -   | 0.257    |
| HCM Control Delay (s) | -   | 18.6     |
| HCM Lane LOS          | -   | C        |
| HCM 95th %tile Q(veh) | -   | 1        |



| Lane Group              | WBL  | WBR   | NBT   | NBR  | SBL   | SBT  |
|-------------------------|------|-------|-------|------|-------|------|
| Lane Group Flow (vph)   | 490  | 638   | 2553  | 405  | 401   | 1203 |
| v/c Ratio               | 0.57 | 1.09  | 1.30  | 0.43 | 1.44  | 0.51 |
| Control Delay           | 47.3 | 103.1 | 159.7 | 3.4  | 258.7 | 11.8 |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  |
| Total Delay             | 47.3 | 103.1 | 159.7 | 3.4  | 258.7 | 11.8 |
| Queue Length 50th (ft)  | 194  | ~627  | ~1511 | 23   | ~244  | 254  |
| Queue Length 95th (ft)  | 252  | #819  | #1514 | m8   | #291  | 304  |
| Internal Link Dist (ft) | 497  |       | 121   |      |       | 322  |
| Turn Bay Length (ft)    |      | 125   |       |      | 150   |      |
| Base Capacity (vph)     | 856  | 587   | 1966  | 935  | 279   | 2362 |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0     | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.57 | 1.09  | 1.30  | 0.43 | 1.44  | 0.51 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

1: S Lamar Blvd & W Oltorf Street  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement               | WBL  | WBR   | NBT   | NBR  | SBL   | SBT  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↖↗   | ↖     | ↕↕    | ↖    | ↖↗    | ↕↕   |
| Traffic Volume (vph)   | 441  | 555   | 2196  | 324  | 317   | 1167 |
| Future Volume (vph)    | 441  | 555   | 2196  | 324  | 317   | 1167 |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 5.0  | 5.0   | 5.0   | 5.0  | 5.0   | 5.0  |
| Lane Util. Factor      | 0.97 | 1.00  | 0.95  | 1.00 | 0.97  | 0.95 |
| Frpb, ped/bikes        | 1.00 | 1.00  | 1.00  | 0.98 | 1.00  | 1.00 |
| Flpb, ped/bikes        | 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 |
| Flt Protected          | 0.95 | 1.00  | 1.00  | 1.00 | 0.95  | 1.00 |
| Satd. Flow (prot)      | 3400 | 1583  | 3539  | 1525 | 3433  | 3505 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  | 1.00 | 0.95  | 1.00 |
| Satd. Flow (perm)      | 3400 | 1583  | 3539  | 1525 | 3433  | 3505 |
| Peak-hour factor, PHF  | 0.90 | 0.87  | 0.86  | 0.80 | 0.79  | 0.97 |
| Adj. Flow (vph)        | 490  | 638   | 2553  | 405  | 401   | 1203 |
| RTOR Reduction (vph)   | 0    | 1     | 0     | 88   | 0     | 0    |
| Lane Group Flow (vph)  | 490  | 637   | 2553  | 317  | 401   | 1203 |
| Confl. Peds. (#/hr)    |      | 4     |       | 2    | 2     |      |
| Confl. Bikes (#/hr)    |      | 1     |       | 5    |       |      |
| Heavy Vehicles (%)     | 3%   | 2%    | 2%    | 4%   | 2%    | 3%   |
| Turn Type              | Prot | pt+ov | NA    | Perm | Prot  | NA   |
| Protected Phases       | 4    | 1 4   | 2     |      | 1     | 6    |
| Permitted Phases       |      | 4     |       | 2    |       |      |
| Actuated Green, G (s)  | 34.0 | 50.0  | 75.0  | 75.0 | 11.0  | 91.0 |
| Effective Green, g (s) | 34.0 | 50.0  | 75.0  | 75.0 | 11.0  | 91.0 |
| Actuated g/C Ratio     | 0.25 | 0.37  | 0.56  | 0.56 | 0.08  | 0.67 |
| Clearance Time (s)     | 5.0  |       | 5.0   | 5.0  | 5.0   | 5.0  |
| Vehicle Extension (s)  | 1.0  |       | 1.0   | 1.0  | 1.0   | 1.0  |
| Lane Grp Cap (vph)     | 856  | 586   | 1966  | 847  | 279   | 2362 |
| v/s Ratio Prot         | 0.14 | c0.40 | c0.72 |      | c0.12 | 0.34 |
| v/s Ratio Perm         |      |       |       | 0.21 |       |      |
| v/c Ratio              | 0.57 | 1.09  | 1.30  | 0.37 | 1.44  | 0.51 |
| Uniform Delay, d1      | 44.1 | 42.5  | 30.0  | 16.8 | 62.0  | 10.9 |
| Progression Factor     | 1.00 | 1.00  | 0.70  | 0.31 | 1.00  | 1.00 |
| Incremental Delay, d2  | 2.8  | 62.9  | 136.5 | 0.7  | 216.1 | 0.8  |
| Delay (s)              | 46.9 | 105.4 | 157.6 | 5.8  | 278.1 | 11.7 |
| Level of Service       | D    | F     | F     | A    | F     | B    |
| Approach Delay (s)     | 80.0 |       | 136.8 |      |       | 78.3 |
| Approach LOS           | E    |       | F     |      |       | E    |

Intersection Summary

|                                   |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 109.1  | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio | 1.27   |                           |      |
| Actuated Cycle Length (s)         | 135.0  | Sum of lost time (s)      | 15.0 |
| Intersection Capacity Utilization | 103.8% | ICU Level of Service      | G    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |

























| Lane Group              | EBL  | EBT  | EBR  | WBT  | NBL  | NBT  | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 128  | 51   | 235  | 136  | 190  | 2395 | 101  | 49    | 1935 |
| v/c Ratio               | 0.67 | 0.13 | 0.55 | 0.74 | 0.65 | 0.95 | 0.10 | 0.92  | 1.02 |
| Control Delay           | 63.5 | 43.4 | 22.2 | 67.3 | 34.8 | 18.8 | 3.3  | 135.6 | 57.8 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  |
| Total Delay             | 63.5 | 43.4 | 22.2 | 67.3 | 34.8 | 18.8 | 3.3  | 135.6 | 57.8 |
| Queue Length 50th (ft)  | 98   | 37   | 65   | 89   | 113  | 780  | 9    | 39    | ~849 |
| Queue Length 95th (ft)  | 122  | 56   | 117  | 145  | m116 | m783 | m11  | #71   | 828  |
| Internal Link Dist (ft) |      | 215  |      | 74   |      | 201  |      |       | 588  |
| Turn Bay Length (ft)    | 75   |      | 50   |      | 50   |      | 125  | 50    |      |
| Base Capacity (vph)     | 191  | 478  | 502  | 271  | 294  | 2518 | 1035 | 53    | 1900 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.67 | 0.11 | 0.47 | 0.50 | 0.65 | 0.95 | 0.10 | 0.92  | 1.02 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

2: S Lamar Blvd & Bluebonnet Lane  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |  |  |  |   |  |   |  |  |  |  |  |  |
| Traffic Volume (vph)              | 95  | 36  | 193   | 0   | 43  | 61  | 173   | 1964  | 82  | 30  | 1580  | 4   |
| Future Volume (vph)               | 95  | 36  | 193   | 0   | 43  | 61  | 173   | 1964  | 82  | 30  | 1580  | 4   |
| 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   |   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |   |
| Lane Util. Factor                 | 1.00  | 1.00  | 1.00  |   | 1.00  |   | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  |   |
| Frpb, ped/bikes                   | 1.00  | 1.00  | 0.98  |   | 0.99  |   | 1.00  | 1.00  | 0.96  | 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  |   |
| Frt                               | 1.00  | 1.00  | 0.85  |   | 0.91  |   | 1.00  | 1.00  | 0.85  | 1.00  | 1.00  |   |
| Flt Protected                     | 0.95  | 1.00  | 1.00  |   | 1.00  |   | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |   |
| Satd. Flow (prot)                 | 1769  | 1900  | 1554  |   | 1718  |   | 1787  | 3505  | 1412  | 1703  | 3469  |   |
| Flt Permitted                     | 0.30  | 1.00  | 1.00  |   | 1.00  |   | 0.05  | 1.00  | 1.00  | 0.05  | 1.00  |   |
| Satd. Flow (perm)                 | 551   | 1900  | 1554  |   | 1718  |   | 95  | 3505  | 1412  | 97  | 3469  |   |
| Peak-hour factor, PHF             | 0.74  | 0.71  | 0.82  | 0.87  | 0.86  | 0.71  | 0.91  | 0.82  | 0.81  | 0.61  | 0.82  | 0.50  |
| Adj. Flow (vph)                   | 128   | 51  | 235   | 0   | 50  | 86  | 190   | 2395  | 101   | 49  | 1927  | 8   |
| RTOR Reduction (vph)              | 0   | 0   | 118   | 0   | 31  | 0   | 0   | 0   | 21  | 0   | 0   | 0   |
| Lane Group Flow (vph)             | 128   | 51  | 117   | 0   | 105   | 0   | 190   | 2395  | 80  | 49  | 1935  | 0   |
| Confl. Peds. (#/hr)               | 1   |   | 4   | 4   |   | 1   | 7   |   | 6   | 6   |   | 7   |
| Confl. Bikes (#/hr)               |   |   |   |   |   | 1   |   |   |   |   |   | 1   |
| Heavy Vehicles (%)                | 2%  | 0%  | 2%  | 3%  | 0%  | 0%  | 1%  | 3%  | 10%   | 6%  | 4%  | 0%  |
| Turn Type                         | pm+pt   | NA  | Perm  |   | NA  |   | pm+pt   | NA  | Perm  | Perm  | NA  |   |
| Protected Phases                  | 7   | 4   |   |   | 8   |   | 5   | 2   |   |   |   | 6   |
| Permitted Phases                  | 4   |   | 4   |   |   |   | 2   |   | 2   | 6   |   |   |
| Actuated Green, G (s)             | 27.0  | 27.0  | 27.0  |   | 12.0  |   | 97.0  | 97.0  | 97.0  | 74.0  | 74.0  |   |
| Effective Green, g (s)            | 27.0  | 27.0  | 27.0  |   | 12.0  |   | 97.0  | 97.0  | 97.0  | 74.0  | 74.0  |   |
| Actuated g/C Ratio                | 0.20  | 0.20  | 0.20  |   | 0.09  |   | 0.72  | 0.72  | 0.72  | 0.55  | 0.55  |   |
| Clearance Time (s)                | 6.0   | 6.0   | 6.0   |   | 6.0   |   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |   |
| Vehicle Extension (s)             | 2.0   | 2.0   | 2.0   |   | 2.0   |   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |   |
| Lane Grp Cap (vph)                | 191   | 380   | 310   |   | 152   |   | 293   | 2518  | 1014  | 53  | 1901  |   |
| v/s Ratio Prot                    | c0.04   | 0.03  |   |   | 0.06  |   | 0.09  | c0.68   |   |   | c0.56   |   |
| v/s Ratio Perm                    | c0.09   |   | 0.08  |   |   |   | 0.38  |   | 0.06  | 0.51  |   |   |
| v/c Ratio                         | 0.67  | 0.13  | 0.38  |   | 0.69  |   | 0.65  | 0.95  | 0.08  | 0.92  | 1.02  |   |
| Uniform Delay, d1                 | 47.0  | 44.4  | 46.7  |   | 59.7  |   | 41.6  | 16.9  | 5.7   | 27.9  | 30.5  |   |
| Progression Factor                | 1.00  | 1.00  | 1.00  |   | 1.00  |   | 1.07  | 0.97  | 1.33  | 1.13  | 1.11  |   |
| Incremental Delay, d2             | 7.1   | 0.1   | 0.3   |   | 10.4  |   | 1.0   | 1.2   | 0.0   | 97.6  | 24.3  |   |
| Delay (s)                         | 54.0  | 44.5  | 47.0  |   | 70.1  |   | 45.4  | 17.5  | 7.6   | 129.2   | 58.0  |   |
| Level of Service                  | D   | D   | D   |   | E   |   | D   | B   | A   | F   | E   |   |
| Approach Delay (s)                |   | 48.9  |   |   | 70.1  |   |   | 19.1  |   |   | 59.8  |   |
| Approach LOS                      |   | D   |   |   | E   |   |   | B   |   |   | E   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 38.2  |   |   |   | HCM 2000 Level of Service   |   |   | D   |   |   |
| HCM 2000 Volume to Capacity ratio |   |   | 0.98  |   |   |   |   |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 135.0   |   |   |   | Sum of lost time (s)  |   |   | 22.0  |   |   |
| Intersection Capacity Utilization |   |   | 101.0%  |   |   |   | ICU Level of Service  |   |   | G   |   |   |
| Analysis Period (min)             |   |   | 15  |   |   |   |   |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |   |   |   |   |   |   |





| Lane Group              | WBR   | NBT  | NBR  | SBL  | SBT  |
|-------------------------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 975   | 1976 | 8    | 528  | 1566 |
| v/c Ratio               | 1.11  | 0.95 | 0.01 | 0.95 | 0.69 |
| Control Delay           | 106.1 | 17.3 | 1.0  | 54.8 | 16.8 |
| Queue Delay             | 0.0   | 1.8  | 0.0  | 0.0  | 0.3  |
| Total Delay             | 106.1 | 19.1 | 1.0  | 54.8 | 17.1 |
| Queue Length 50th (ft)  | ~546  | 548  | 0    | 492  | 318  |
| Queue Length 95th (ft)  | #694  | 378  | m0   | m491 | m325 |
| Internal Link Dist (ft) |       | 324  |      |      | 498  |
| Turn Bay Length (ft)    |       |      |      | 100  |      |
| Base Capacity (vph)     | 881   | 2082 | 955  | 555  | 2262 |
| Starvation Cap Reductn  | 0     | 44   | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 214  |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.11  | 0.97 | 0.01 | 0.95 | 0.76 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

3: S Lamar Blvd & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

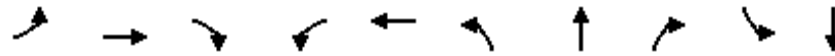
Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement                          | WBL   | WBR   | NBT   | NBR  | SBL                       | SBT   |
|-----------------------------------|-------|-------|-------|------|---------------------------|-------|
| Lane Configurations               |       | ↗↗    | ↕↕    | ↘    | ↙                         | ↕↕    |
| Traffic Volume (vph)              | 0     | 926   | 1482  | 5    | 449                       | 1394  |
| Future Volume (vph)               | 0     | 926   | 1482  | 5    | 449                       | 1394  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900 | 1900                      | 1900  |
| Total Lost time (s)               |       | 6.0   | 6.0   | 6.0  | 6.0                       | 6.0   |
| Lane Util. Factor                 |       | 0.88  | 0.95  | 1.00 | 1.00                      | 0.95  |
| Frbp, ped/bikes                   |       | 1.00  | 1.00  | 0.98 | 1.00                      | 1.00  |
| Flpb, ped/bikes                   |       | 1.00  | 1.00  | 1.00 | 1.00                      | 1.00  |
| Frt                               |       | 0.85  | 1.00  | 0.85 | 1.00                      | 1.00  |
| Flt Protected                     |       | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |       | 2787  | 3471  | 1589 | 1787                      | 3471  |
| Flt Permitted                     |       | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |       | 2787  | 3471  | 1589 | 1787                      | 3471  |
| Peak-hour factor, PHF             | 0.92  | 0.95  | 0.75  | 0.60 | 0.85                      | 0.89  |
| Adj. Flow (vph)                   | 0     | 975   | 1976  | 8    | 528                       | 1566  |
| RTOR Reduction (vph)              | 0     | 14    | 0     | 2    | 0                         | 0     |
| Lane Group Flow (vph)             | 0     | 961   | 1976  | 6    | 528                       | 1566  |
| Confl. Peds. (#/hr)               |       | 1     |       | 4    | 4                         |       |
| Heavy Vehicles (%)                | 2%    | 2%    | 4%    | 0%   | 1%                        | 4%    |
| Turn Type                         |       | pt+ov | NA    | Perm | Prot                      | NA    |
| Protected Phases                  |       | 1 4   | 2 3   |      | 1 4                       | 1 2   |
| Permitted Phases                  |       |       |       | 2 3  |                           |       |
| Actuated Green, G (s)             |       | 42.0  | 81.0  | 81.0 | 42.0                      | 88.0  |
| Effective Green, g (s)            |       | 42.0  | 81.0  | 81.0 | 42.0                      | 88.0  |
| Actuated g/C Ratio                |       | 0.31  | 0.60  | 0.60 | 0.31                      | 0.65  |
| Clearance Time (s)                |       |       |       |      |                           |       |
| Vehicle Extension (s)             |       |       |       |      |                           |       |
| Lane Grp Cap (vph)                |       | 867   | 2082  | 953  | 555                       | 2262  |
| v/s Ratio Prot                    |       | c0.34 | c0.57 |      | 0.30                      | c0.45 |
| v/s Ratio Perm                    |       |       |       | 0.00 |                           |       |
| v/c Ratio                         |       | 1.11  | 0.95  | 0.01 | 0.95                      | 0.69  |
| Uniform Delay, d1                 |       | 46.5  | 25.1  | 10.8 | 45.5                      | 14.9  |
| Progression Factor                |       | 1.00  | 0.38  | 0.15 | 0.92                      | 1.07  |
| Incremental Delay, d2             |       | 64.6  | 6.3   | 0.0  | 11.6                      | 0.5   |
| Delay (s)                         |       | 111.1 | 15.7  | 1.7  | 53.5                      | 16.5  |
| Level of Service                  |       | F     | B     | A    | D                         | B     |
| Approach Delay (s)                | 111.1 |       | 15.6  |      |                           | 25.8  |
| Approach LOS                      | F     |       | B     |      |                           | C     |
| <b>Intersection Summary</b>       |       |       |       |      |                           |       |
| HCM 2000 Control Delay            |       |       | 38.3  |      | HCM 2000 Level of Service | D     |
| HCM 2000 Volume to Capacity ratio |       |       | 1.12  |      |                           |       |
| Actuated Cycle Length (s)         |       |       | 135.0 |      | Sum of lost time (s)      | 24.0  |
| Intersection Capacity Utilization |       |       | 92.5% |      | ICU Level of Service      | F     |
| Analysis Period (min)             |       |       | 15    |      |                           |       |
| c Critical Lane Group             |       |       |       |      |                           |       |

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
Queues

Brodie Oaks Center TIA  
Imps-Phase 2-2031 Site+Forecasted AM



| Lane Group              | EBL  | EBT  | EBR  | WBL  | WBT  | NBL   | NBT  | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|------|-------|------|
| Lane Group Flow (vph)   | 202  | 172  | 275  | 142  | 192  | 199   | 1827 | 62   | 57    | 1564 |
| v/c Ratio               | 0.89 | 0.46 | 0.63 | 0.72 | 0.27 | 1.51  | 0.81 | 0.06 | 2.19  | 0.77 |
| Control Delay           | 88.9 | 52.1 | 28.4 | 72.3 | 46.4 | 289.3 | 4.0  | 0.0  | 642.6 | 5.7  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 1.1  | 0.0  | 0.0   | 0.0  |
| Total Delay             | 88.9 | 52.1 | 28.4 | 72.3 | 46.4 | 289.3 | 5.1  | 0.0  | 642.6 | 5.8  |
| Queue Length 50th (ft)  | 174  | 134  | 97   | 118  | 74   | ~242  | 80   | 0    | ~80   | 323  |
| Queue Length 95th (ft)  | 175  | 198  | 188  | 136  | 98   | m#251 | 80   | m0   | #99   | 346  |
| Internal Link Dist (ft) |      | 257  |      |      | 238  |       | 436  |      |       | 324  |
| Turn Bay Length (ft)    | 90   |      |      | 100  |      | 125   |      | 160  | 100   |      |
| Base Capacity (vph)     | 228  | 376  | 439  | 196  | 706  | 132   | 2262 | 1013 | 26    | 2043 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 16   |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0     | 215  | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.89 | 0.46 | 0.63 | 0.72 | 0.27 | 1.51  | 0.89 | 0.06 | 2.19  | 0.77 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

| Movement                          | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL                       | NBT   | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|------|-------|------|------|------|---------------------------|-------|------|-------|------|------|
| Lane Configurations               |       |      |       |      |      |      |                           |       |      |       |      |      |
| Traffic Volume (vph)              | 127   | 148  | 242   | 94   | 148  | 7    | 169                       | 1352  | 58   | 32    | 1282 | 75   |
| Future Volume (vph)               | 127   | 148  | 242   | 94   | 148  | 7    | 169                       | 1352  | 58   | 32    | 1282 | 75   |
| 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   | 6.0  | 6.0   | 6.0  |      |
| Lane Util. Factor                 | 1.00  | 1.00 | 1.00  | 1.00 | 0.95 |      | 1.00                      | 0.95  | 1.00 | 1.00  | 0.95 |      |
| Frpb, ped/bikes                   | 1.00  | 1.00 | 0.98  | 1.00 | 1.00 |      | 1.00                      | 1.00  | 0.98 | 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  | 1.00 | 0.85  | 1.00 | 0.99 |      | 1.00                      | 1.00  | 0.85 | 1.00  | 0.99 |      |
| Flt Protected                     | 0.95  | 1.00 | 1.00  | 0.95 | 1.00 |      | 0.95                      | 1.00  | 1.00 | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1748  | 1881 | 1583  | 1796 | 3522 |      | 1787                      | 3471  | 1516 | 1805  | 3441 |      |
| Flt Permitted                     | 0.62  | 1.00 | 1.00  | 0.52 | 1.00 |      | 0.95                      | 1.00  | 1.00 | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 | 1143  | 1881 | 1583  | 981  | 3522 |      | 1787                      | 3471  | 1516 | 1805  | 3441 |      |
| Peak-hour factor, PHF             | 0.63  | 0.86 | 0.88  | 0.66 | 0.80 | 0.95 | 0.85                      | 0.74  | 0.93 | 0.56  | 0.88 | 0.70 |
| Adj. Flow (vph)                   | 202   | 172  | 275   | 142  | 185  | 7    | 199                       | 1827  | 62   | 57    | 1457 | 107  |
| RTOR Reduction (vph)              | 0     | 0    | 122   | 0    | 2    | 0    | 0                         | 0     | 22   | 0     | 4    | 0    |
| Lane Group Flow (vph)             | 202   | 172  | 153   | 142  | 190  | 0    | 199                       | 1827  | 40   | 57    | 1560 | 0    |
| Confl. Peds. (#/hr)               | 2     |      | 4     | 4    |      | 2    | 2                         |       | 4    | 4     |      | 2    |
| Confl. Bikes (#/hr)               |       |      | 1     |      |      |      |                           |       | 1    |       |      | 2    |
| Heavy Vehicles (%)                | 3%    | 1%   | 0%    | 0%   | 1%   | 25%  | 1%                        | 4%    | 4%   | 0%    | 4%   | 0%   |
| Turn Type                         | Perm  | NA   | Perm  | Perm | NA   |      | Prot                      | NA    | Perm | Prot  | NA   |      |
| Protected Phases                  |       | 8    |       |      | 8    |      | 5                         | 5 6   |      | 7     | 6 7  |      |
| Permitted Phases                  | 8     |      | 8     | 8    |      |      |                           |       | 5 6  |       |      |      |
| Actuated Green, G (s)             | 27.0  | 27.0 | 27.0  | 27.0 | 27.0 |      | 10.0                      | 88.0  | 88.0 | 2.0   | 80.0 |      |
| Effective Green, g (s)            | 27.0  | 27.0 | 27.0  | 27.0 | 27.0 |      | 10.0                      | 88.0  | 88.0 | 2.0   | 80.0 |      |
| Actuated g/C Ratio                | 0.20  | 0.20 | 0.20  | 0.20 | 0.20 |      | 0.07                      | 0.65  | 0.65 | 0.01  | 0.59 |      |
| 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  |      | 1.0                       |       |      | 1.0   |      |      |
| Lane Grp Cap (vph)                | 228   | 376  | 316   | 196  | 704  |      | 132                       | 2262  | 988  | 26    | 2039 |      |
| v/s Ratio Prot                    |       | 0.09 |       |      | 0.05 |      | c0.11                     | c0.53 |      | c0.03 | 0.45 |      |
| v/s Ratio Perm                    | c0.18 |      | 0.10  | 0.14 |      |      |                           |       | 0.03 |       |      |      |
| v/c Ratio                         | 0.89  | 0.46 | 0.48  | 0.72 | 0.27 |      | 1.51                      | 0.81  | 0.04 | 2.19  | 0.77 |      |
| Uniform Delay, d1                 | 52.5  | 47.6 | 47.8  | 50.5 | 45.7 |      | 62.5                      | 17.3  | 8.4  | 66.5  | 20.5 |      |
| Progression Factor                | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |      | 1.34                      | 0.17  | 0.00 | 0.68  | 0.18 |      |
| Incremental Delay, d2             | 36.0  | 4.0  | 5.2   | 20.7 | 0.9  |      | 239.6                     | 1.0   | 0.0  | 617.9 | 1.2  |      |
| Delay (s)                         | 88.5  | 51.5 | 53.0  | 71.2 | 46.6 |      | 323.4                     | 3.9   | 0.0  | 662.9 | 4.8  |      |
| Level of Service                  | F     | D    | D     | E    | D    |      | F                         | A     | A    | F     | A    |      |
| Approach Delay (s)                |       | 63.7 |       |      | 57.1 |      |                           | 34.2  |      |       | 27.9 |      |
| Approach LOS                      |       | E    |       |      | E    |      |                           | C     |      |       | C    |      |
| <b>Intersection Summary</b>       |       |      |       |      |      |      |                           |       |      |       |      |      |
| HCM 2000 Control Delay            |       |      | 37.7  |      |      |      | HCM 2000 Level of Service |       |      | D     |      |      |
| HCM 2000 Volume to Capacity ratio |       |      | 0.94  |      |      |      |                           |       |      |       |      |      |
| Actuated Cycle Length (s)         |       |      | 135.0 |      |      |      | Sum of lost time (s)      |       |      | 24.0  |      |      |
| Intersection Capacity Utilization |       |      | 99.7% |      |      |      | ICU Level of Service      |       |      | F     |      |      |
| Analysis Period (min)             |       |      | 15    |      |      |      |                           |       |      |       |      |      |
| c Critical Lane Group             |       |      |       |      |      |      |                           |       |      |       |      |      |



| Lane Group              | EBT  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph)   | 114  | 206  | 7    | 265  | 29   | 2184  | 237  | 259   | 1557 |
| v/c Ratio               | 0.36 | 0.82 | 0.02 | 0.63 | 0.18 | 1.03  | 0.24 | 1.34  | 0.62 |
| Control Delay           | 43.5 | 77.3 | 43.0 | 30.4 | 15.6 | 54.5  | 5.1  | 210.1 | 3.9  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| Total Delay             | 43.5 | 77.3 | 43.0 | 30.4 | 15.6 | 54.5  | 5.1  | 210.1 | 3.9  |
| Queue Length 50th (ft)  | 75   | 174  | 5    | 102  | 11   | ~1075 | 30   | ~240  | 58   |
| Queue Length 95th (ft)  | 85   | 178  | 12   | 146  | 21   | 648   | 40   | #320  | 104  |
| Internal Link Dist (ft) | 270  |      | 212  |      |      | 208   |      |       | 469  |
| Turn Bay Length (ft)    |      | 120  |      | 100  | 95   |       |      | 125   |      |
| Base Capacity (vph)     | 315  | 250  | 394  | 421  | 162  | 2123  | 991  | 194   | 2508 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.36 | 0.82 | 0.02 | 0.63 | 0.18 | 1.03  | 0.24 | 1.34  | 0.62 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.























Queue shown is maximum after two cycles.

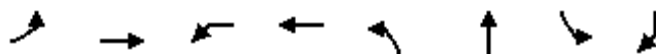
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

5: S Lamar Blvd & Private Driveway/Panther Trail  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 36  | 9   | 23  | 132   | 4   | 204   | 20   | 1529  | 168   | 197   | 1422  | 21  |
| Future Volume (veh/h)        | 36  | 9   | 23  | 132   | 4   | 204   | 20   | 1529  | 168   | 197   | 1422  | 21  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.99  |   | 0.99  | 0.99  |   | 0.99  | 1.00   |   | 1.00  | 1.00  |   | 0.97  |
| 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  |
| Adj Sat Flow, veh/h/ln       | 1900  | 1854  | 1900  | 1827  | 1900  | 1810  | 1900   | 1863  | 1881  | 1810  | 1843  | 1900  |
| Adj Flow Rate, veh/h         | 64  | 15  | 35  | 206   | 7   | 265   | 29   | 2184  | 237   | 259   | 1529  | 28  |
| Adj No. of Lanes             | 0   | 1   | 0   | 1   | 1   | 1   | 1  | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 0.56  | 0.62  | 0.65  | 0.64  | 0.60  | 0.77  | 0.69   | 0.70  | 0.71  | 0.76  | 0.93  | 0.75  |
| Percent Heavy Veh, %         | 0   | 0   | 8   | 4   | 0   | 5   | 0  | 2   | 1   | 5   | 3   | 8   |
| Cap, veh/h                   | 182   | 47  | 83  | 313   | 394   | 316   | 222  | 2124  | 956   | 194   | 2527  | 46  |
| Arrive On Green              | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.60   | 0.60  | 0.60  | 0.08  | 0.72  | 0.72  |
| Sat Flow, veh/h              | 678   | 227   | 401   | 1315  | 1900  | 1525  | 336  | 3539  | 1594  | 1723  | 3516  | 64  |
| Grp Volume(v), veh/h         | 114   | 0   | 0   | 206   | 7   | 265   | 29   | 2184  | 237   | 259   | 760   | 797   |
| Grp Sat Flow(s),veh/h/ln     | 1306  | 0   | 0   | 1315  | 1900  | 1525  | 336  | 1770  | 1594  | 1723  | 1751  | 1830  |
| Q Serve(g_s), s              | 8.3   | 0.0   | 0.0   | 11.6  | 0.4   | 22.5  | 6.4  | 81.0  | 9.4   | 11.0  | 29.2  | 29.3  |
| Cycle Q Clear(g_c), s        | 9.8   | 0.0   | 0.0   | 21.4  | 0.4   | 22.5  | 19.7   | 81.0  | 9.4   | 11.0  | 29.2  | 29.3  |
| Prop In Lane                 | 0.56  |   | 0.31  | 1.00  |   | 1.00  | 1.00   |   | 1.00  | 1.00  |   | 0.04  |
| Lane Grp Cap(c), veh/h       | 312   | 0   | 0   | 313   | 394   | 316   | 222  | 2124  | 956   | 194   | 1258  | 1315  |
| V/C Ratio(X)                 | 0.36  | 0.00  | 0.00  | 0.66  | 0.02  | 0.84  | 0.13   | 1.03  | 0.25  | 1.34  | 0.60  | 0.61  |
| Avail Cap(c_a), veh/h        | 312   | 0   | 0   | 313   | 394   | 316   | 222  | 2124  | 956   | 194   | 1258  | 1315  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 46.1  | 0.0   | 0.0   | 51.3  | 42.6  | 51.3  | 18.4   | 27.0  | 12.7  | 49.2  | 9.5   | 9.5   |
| Incr Delay (d2), s/veh       | 3.3   | 0.0   | 0.0   | 10.4  | 0.1   | 22.5  | 1.2  | 27.2  | 0.6   | 182.2   | 2.2   | 2.1   |
| 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     | 4.0   | 0.0   | 0.0   | 8.2   | 0.2   | 11.5  | 0.7  | 47.3  | 4.3   | 17.0  | 14.7  | 15.4  |
| LnGrp Delay(d),s/veh         | 49.4  | 0.0   | 0.0   | 61.6  | 42.6  | 73.8  | 19.6   | 54.2  | 13.3  | 231.4   | 11.6  | 11.6  |
| LnGrp LOS                    | D   |   |   | E   | D   | E   | B  | F   | B   | F   | B   | B   |
| Approach Vol, veh/h          |   | 114   |   |   | 478   |   |  | 2450  |   |   | 1816  |   |
| Approach Delay, s/veh        |   | 49.4  |   |   | 68.1  |   |  | 49.9  |   |   | 42.9  |   |
| Approach LOS                 |   | D   |   |   | E   |   |  | D   |   |   | D   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 16.0  | 86.0  |   | 33.0  |   | 102.0   |  | 33.0  |   |   |   |   |
| Change Period (Y+Rc), s      | 5.0   | 5.0   |   | 5.0   |   | 5.0   |  | 5.0   |   |   |   |   |
| Max Green Setting (Gmax), s  | 11.0  | 81.0  |   | 28.0  |   | 97.0  |  | 28.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 13.0  | 83.0  |   | 11.8  |   | 31.3  |  | 24.5  |   |   |   |   |
| Green Ext Time (p_c), s      | 0.0   | 0.0   |   | 0.2   |   | 4.1   |  | 0.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 49.1  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | D   |   |   |  |   |   |   |   |   |



| Lane Group              | EBL   | EBT  | WBL  | WBT  | NBL   | NBT   | SBL  | SBR  |
|-------------------------|-------|------|------|------|-------|-------|------|------|
| Lane Group Flow (vph)   | 413   | 265  | 116  | 147  | 501   | 2628  | 137  | 1444 |
| v/c Ratio               | 1.45  | 0.60 | 0.64 | 0.47 | 1.46  | 1.42  | 0.35 | 0.73 |
| Control Delay           | 256.6 | 14.1 | 55.2 | 19.9 | 263.0 | 225.3 | 45.7 | 26.8 |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  |
| Total Delay             | 256.6 | 14.1 | 55.2 | 19.9 | 263.0 | 225.3 | 45.7 | 26.8 |
| Queue Length 50th (ft)  | ~366  | 15   | 77   | 24   | ~297  | ~1098 | 98   | 337  |
| Queue Length 95th (ft)  | #265  | 5    | 96   | 31   | #302  | #867  | 115  | 402  |
| Internal Link Dist (ft) |       | 165  |      | 155  |       | 606   |      |      |
| Turn Bay Length (ft)    |       |      |      |      |       |       | 160  |      |
| Base Capacity (vph)     | 284   | 445  | 186  | 311  | 343   | 1850  | 387  | 1967 |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.45  | 0.60 | 0.62 | 0.47 | 1.46  | 1.42  | 0.35 | 0.73 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

6: S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway  
 HCM Signalized Intersection Capacity Analysis

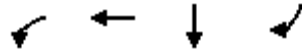
Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement               | EBL   | EBT   | EBR2 | WBL   | WBT  | WBR  | NBL   | NBT   | NBR  | SBL  | SBR   | SBR2 |
|------------------------|-------|-------|------|-------|------|------|-------|-------|------|------|-------|------|
| Lane Configurations    | ↖     | ↗     |      | ↖     | ↗    |      | ↖↗    | ↑↑↑   |      | ↖    | ↗↗↗   |      |
| Traffic Volume (vph)   | 219   | 10    | 192  | 79    | 19   | 67   | 366   | 1864  | 60   | 92   | 1076  | 154  |
| Future Volume (vph)    | 219   | 10    | 192  | 79    | 19   | 67   | 366   | 1864  | 60   | 92   | 1076  | 154  |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 6.5   | 6.5   |      | 6.5   | 6.5  |      | 7.5   | 5.5   |      | 7.0  | 5.5   |      |
| Lane Util. Factor      | 1.00  | 1.00  |      | 1.00  | 1.00 |      | 0.97  | 0.91  |      | 1.00 | 0.64  |      |
| Frbp, ped/bikes        | 1.00  | 1.00  |      | 1.00  | 0.99 |      | 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  |      |
| Frt                    | 1.00  | 0.86  |      | 1.00  | 0.88 |      | 1.00  | 0.99  |      | 1.00 | 0.85  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 1.00 |      | 0.95  | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)      | 1804  | 1632  |      | 1770  | 1656 |      | 3303  | 5053  |      | 1736 | 3934  |      |
| Flt Permitted          | 0.46  | 1.00  |      | 0.24  | 1.00 |      | 0.95  | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)      | 865   | 1632  |      | 452   | 1656 |      | 3303  | 5053  |      | 1736 | 3934  |      |
| Peak-hour factor, PHF  | 0.53  | 0.62  | 0.77 | 0.68  | 0.62 | 0.58 | 0.73  | 0.74  | 0.55 | 0.67 | 0.90  | 0.62 |
| Adj. Flow (vph)        | 413   | 16    | 249  | 116   | 31   | 116  | 501   | 2519  | 109  | 137  | 1196  | 248  |
| RTOR Reduction (vph)   | 0     | 210   | 0    | 0     | 101  | 0    | 0     | 4     | 0    | 0    | 76    | 0    |
| Lane Group Flow (vph)  | 413   | 55    | 0    | 116   | 46   | 0    | 501   | 2624  | 0    | 137  | 1368  | 0    |
| Confl. Peds. (#/hr)    | 1     |       |      |       |      |      | 1     | 3     |      | 1    | 1     | 3    |
| Confl. Bikes (#/hr)    |       |       |      |       |      |      | 1     |       |      |      |       | 2    |
| Heavy Vehicles (%)     | 0%    | 0%    | 0%   | 2%    | 0%   | 0%   | 6%    | 2%    | 0%   | 4%   | 2%    | 20%  |
| Turn Type              | pm+pt | NA    |      | pm+pt | NA   |      | Prot  | NA    |      | Prot | Prot  |      |
| Protected Phases       | 7     | 4     |      | 3     | 8    |      | 5     | 2     |      | 1    | 6     |      |
| Permitted Phases       | 4     |       |      | 8     |      |      |       |       |      |      |       |      |
| Actuated Green, G (s)  | 30.3  | 18.8  |      | 25.7  | 16.5 |      | 13.5  | 47.5  |      | 29.0 | 62.5  |      |
| Effective Green, g (s) | 30.3  | 18.8  |      | 25.7  | 16.5 |      | 13.5  | 47.5  |      | 29.0 | 62.5  |      |
| Actuated g/C Ratio     | 0.23  | 0.14  |      | 0.20  | 0.13 |      | 0.10  | 0.37  |      | 0.22 | 0.48  |      |
| Clearance Time (s)     | 6.5   | 6.5   |      | 6.5   | 6.5  |      | 7.5   | 5.5   |      | 7.0  | 5.5   |      |
| Vehicle Extension (s)  | 1.0   | 3.0   |      | 3.0   | 3.0  |      | 3.0   | 3.0   |      | 2.0  | 2.0   |      |
| Lane Grp Cap (vph)     | 284   | 236   |      | 182   | 210  |      | 343   | 1846  |      | 387  | 1891  |      |
| v/s Ratio Prot         | c0.13 | 0.03  |      | 0.04  | 0.03 |      | 0.15  | c0.52 |      | 0.08 | c0.35 |      |
| v/s Ratio Perm         | c0.21 |       |      | 0.08  |      |      |       |       |      |      |       |      |
| v/c Ratio              | 1.45  | 0.23  |      | 0.64  | 0.22 |      | 1.46  | 1.42  |      | 0.35 | 0.72  |      |
| Uniform Delay, d1      | 48.4  | 49.2  |      | 45.2  | 51.0 |      | 58.2  | 41.2  |      | 42.6 | 26.9  |      |
| Progression Factor     | 1.00  | 1.00  |      | 1.00  | 1.00 |      | 1.00  | 1.00  |      | 1.00 | 1.00  |      |
| Incremental Delay, d2  | 223.0 | 2.3   |      | 7.1   | 2.4  |      | 222.8 | 192.9 |      | 2.5  | 2.4   |      |
| Delay (s)              | 271.4 | 51.6  |      | 52.4  | 53.3 |      | 281.0 | 234.2 |      | 45.1 | 29.3  |      |
| Level of Service       | F     | D     |      | D     | D    |      | F     | F     |      | D    | C     |      |
| Approach Delay (s)     |       | 185.4 |      |       | 52.9 |      |       | 241.7 |      |      |       |      |
| Approach LOS           |       | F     |      |       | D    |      |       | F     |      |      |       |      |

| Intersection Summary              |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 167.1  | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio | 1.30   |                           |      |
| Actuated Cycle Length (s)         | 130.0  | Sum of lost time (s)      | 26.0 |
| Intersection Capacity Utilization | 113.3% | ICU Level of Service      | H    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |





| Lane Group              | WBL  | WBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 616  | 2010 | 855  | 356  |
| v/c Ratio               | 0.60 | 0.94 | 0.65 | 0.23 |
| Control Delay           | 4.3  | 20.8 | 51.0 | 0.3  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 4.3  | 20.8 | 51.0 | 0.3  |
| Queue Length 50th (ft)  | 51   | 970  | 200  | 0    |
| Queue Length 95th (ft)  | m48  | m941 | 229  | 0    |
| Internal Link Dist (ft) |      | 23   | 453  |      |
| Turn Bay Length (ft)    |      |      |      |      |
| Base Capacity (vph)     | 1032 | 2144 | 1324 | 1564 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.60 | 0.94 | 0.65 | 0.23 |

**Intersection Summary**

m Volume for 95th percentile queue is metered by upstream signal.

7: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement                          | EBL  | EBT  | EBR   | WBL     | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR   |  |
|-----------------------------------|------|------|-------|---------|---------------------------|------|------|------|------|------|-------|-------|--|
| Lane Configurations               |      |      |       | ↖       | ↕                         |      |      |      |      |      | ↑↑↑   | ↗     |  |
| Traffic Volume (vph)              | 0    | 0    | 0     | 575     | 1805                      | 0    | 0    | 0    | 0    | 0    | 744   | 313   |  |
| Future Volume (vph)               | 0    | 0    | 0     | 575     | 1805                      | 0    | 0    | 0    | 0    | 0    | 744   | 313   |  |
| 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   | 4.0   |  |
| Lane Util. Factor                 |      |      |       | 0.91    | 0.91                      |      |      |      |      |      | 0.86  | 1.00  |  |
| Frbp, ped/bikes                   |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.99  |  |
| Flpb, ped/bikes                   |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Frt                               |      |      |       | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.85  |  |
| Flt Protected                     |      |      |       | 0.95    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (prot)                 |      |      |       | 1595    | 3383                      |      |      |      |      |      | 6166  | 1564  |  |
| Flt Permitted                     |      |      |       | 0.95    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (perm)                 |      |      |       | 1595    | 3383                      |      |      |      |      |      | 6166  | 1564  |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92  | 0.84    | 0.93                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.87  | 0.88  |  |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 685     | 1941                      | 0    | 0    | 0    | 0    | 0    | 855   | 356   |  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 38      | 38                        | 0    | 0    | 0    | 0    | 0    | 0     | 0     |  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 578     | 1972                      | 0    | 0    | 0    | 0    | 0    | 855   | 356   |  |
| Confl. Peds. (#/hr)               |      |      |       |         |                           |      |      |      |      |      |       | 1     |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%    | 3%      | 2%                        | 2%   | 2%   | 2%   | 2%   | 2%   | 6%    | 2%    |  |
| Turn Type                         |      |      |       | custom  | NA                        |      |      |      |      |      | NA    | Free  |  |
| Protected Phases                  |      |      |       | 1 2 4 8 | 1 2 4 8                   |      |      |      |      |      | 5 6 7 |       |  |
| Permitted Phases                  |      |      |       | 3       | 3                         |      |      |      |      |      |       | Free  |  |
| Actuated Green, G (s)             |      |      |       | 86.0    | 86.0                      |      |      |      |      |      | 33.0  | 135.0 |  |
| Effective Green, g (s)            |      |      |       | 86.0    | 86.0                      |      |      |      |      |      | 33.0  | 135.0 |  |
| Actuated g/C Ratio                |      |      |       | 0.64    | 0.64                      |      |      |      |      |      | 0.24  | 1.00  |  |
| Clearance Time (s)                |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| Vehicle Extension (s)             |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| Lane Grp Cap (vph)                |      |      |       | 1086    | 2305                      |      |      |      |      |      | 1507  | 1564  |  |
| v/s Ratio Prot                    |      |      |       | 0.33    | 0.53                      |      |      |      |      |      | 0.14  |       |  |
| v/s Ratio Perm                    |      |      |       | 0.03    | 0.05                      |      |      |      |      |      |       | 0.23  |  |
| v/c Ratio                         |      |      |       | 0.53    | 0.86                      |      |      |      |      |      | 0.57  | 0.23  |  |
| Uniform Delay, d1                 |      |      |       | 13.5    | 19.5                      |      |      |      |      |      | 44.7  | 0.0   |  |
| Progression Factor                |      |      |       | 0.37    | 1.02                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Incremental Delay, d2             |      |      |       | 0.1     | 1.4                       |      |      |      |      |      | 1.6   | 0.3   |  |
| Delay (s)                         |      |      |       | 5.0     | 21.3                      |      |      |      |      |      | 46.3  | 0.3   |  |
| Level of Service                  |      |      |       | A       | C                         |      |      |      |      |      | D     | A     |  |
| Approach Delay (s)                |      | 0.0  |       |         | 17.5                      |      |      | 0.0  |      |      | 32.8  |       |  |
| Approach LOS                      |      | A    |       |         | B                         |      |      | A    |      |      | C     |       |  |
| <b>Intersection Summary</b>       |      |      |       |         |                           |      |      |      |      |      |       |       |  |
| HCM 2000 Control Delay            |      |      | 22.3  |         | HCM 2000 Level of Service |      |      |      |      |      |       | C     |  |
| HCM 2000 Volume to Capacity ratio |      |      | 1.02  |         |                           |      |      |      |      |      |       |       |  |
| Actuated Cycle Length (s)         |      |      | 135.0 |         | Sum of lost time (s)      |      |      |      |      |      | 40.0  |       |  |
| Intersection Capacity Utilization |      |      | 85.5% |         | ICU Level of Service      |      |      |      |      |      | E     |       |  |
| Analysis Period (min)             |      |      | 15    |         |                           |      |      |      |      |      |       |       |  |
| c Critical Lane Group             |      |      |       |         |                           |      |      |      |      |      |       |       |  |















| Lane Group              | WBT  | WBR   | NBL  | NBT  |
|-------------------------|------|-------|------|------|
| Lane Group Flow (vph)   | 2059 | 843   | 375  | 1182 |
| v/c Ratio               | 1.01 | 1.18  | 0.51 | 0.55 |
| Control Delay           | 59.6 | 121.4 | 5.3  | 8.5  |
| Queue Delay             | 34.0 | 0.0   | 0.7  | 0.4  |
| Total Delay             | 93.5 | 121.4 | 6.0  | 8.9  |
| Queue Length 50th (ft)  | ~610 | ~772  | 31   | 113  |
| Queue Length 95th (ft)  | m505 | m#652 | m29  | m92  |
| Internal Link Dist (ft) | 133  |       |      | 295  |
| Turn Bay Length (ft)    |      |       |      |      |
| Base Capacity (vph)     | 2034 | 713   | 737  | 2152 |
| Starvation Cap Reductn  | 0    | 0     | 137  | 431  |
| Spillback Cap Reductn   | 233  | 0     | 41   | 57   |
| Storage Cap Reductn     | 0    | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.14 | 1.18  | 0.63 | 0.69 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |  |
| Lane Configurations               |   |   |   |   | ↑↑↑   | ↑   | ↑  | ↑↑↑   |   |   |   |   |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 0   | 1956  | 666   | 433  | 813   | 0   | 0   | 0   | 0   |  |
| Future Volume (vph)               | 0   | 0   | 0   | 0   | 1956  | 666   | 433  | 813   | 0   | 0   | 0   | 0   |  |
| 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   |   |   |   |   |  |
| Lane Util. Factor                 |   |   |   |   | 0.91  | 1.00  | 0.86   | 0.86  |   |   |   |   |  |
| Frbp, ped/bikes                   |   |   |   |   | 1.00  | 0.99  | 1.00   | 1.00  |   |   |   |   |  |
| Flpb, ped/bikes                   |   |   |   |   | 1.00  | 1.00  | 1.00   | 1.00  |   |   |   |   |  |
| Frt                               |   |   |   |   | 1.00  | 0.85  | 1.00   | 1.00  |   |   |   |   |  |
| Flt Protected                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (prot)                 |   |   |   |   | 5085  | 1504  | 1552   | 4792  |   |   |   |   |  |
| Flt Permitted                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (perm)                 |   |   |   |   | 5085  | 1504  | 1552   | 4792  |   |   |   |   |  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.92  | 0.95  | 0.79  | 0.89   | 0.76  | 0.92  | 0.92  | 0.92  | 0.92  |  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 0   | 2059  | 843   | 487  | 1070  | 0   | 0   | 0   | 0   |  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 114   | 58   | 58  | 0   | 0   | 0   | 0   |  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 0   | 2059  | 729   | 317  | 1124  | 0   | 0   | 0   | 0   |  |
| Confl. Peds. (#/hr)               |   |   |   |   |   | 1   |  |   |   |   |   |   |  |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 2%  | 2%  | 6%  | 0%   | 2%  | 2%  | 2%  | 2%  | 2%  |  |
| Turn Type                         |   |   |   |   | NA  | Perm  | custom   | NA  |   |   |   |   |  |
| Protected Phases                  |   |   |   |   | 1 7 8   |   | 2 3 4 5  | 2 3 4 5   |   |   |   |   |  |
| Permitted Phases                  |   |   |   |   |   | 1 7 8   | 6  | 6   |   |   |   |   |  |
| Actuated Green, G (s)             |   |   |   |   | 54.0  | 54.0  | 63.0   | 63.0  |   |   |   |   |  |
| Effective Green, g (s)            |   |   |   |   | 52.0  | 52.0  | 61.0   | 61.0  |   |   |   |   |  |
| Actuated g/C Ratio                |   |   |   |   | 0.39  | 0.39  | 0.45   | 0.45  |   |   |   |   |  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Lane Grp Cap (vph)                |   |   |   |   | 1958  | 579   | 770  | 2378  |   |   |   |   |  |
| v/s Ratio Prot                    |   |   |   |   | 0.40  |   | 0.16   | c0.18   |   |   |   |   |  |
| v/s Ratio Perm                    |   |   |   |   |   | c0.48   | 0.05   | 0.05  |   |   |   |   |  |
| v/c Ratio                         |   |   |   |   | 1.05  | 1.26  | 0.41   | 0.47  |   |   |   |   |  |
| Uniform Delay, d1                 |   |   |   |   | 41.5  | 41.5  | 24.9   | 25.8  |   |   |   |   |  |
| Progression Factor                |   |   |   |   | 0.97  | 0.96  | 0.30   | 0.40  |   |   |   |   |  |
| Incremental Delay, d2             |   |   |   |   | 33.2  | 126.9   | 0.0  | 0.0   |   |   |   |   |  |
| Delay (s)                         |   |   |   |   | 73.5  | 166.8   | 7.4  | 10.4  |   |   |   |   |  |
| Level of Service                  |   |   |   |   | E   | F   | A  | B   |   |   |   |   |  |
| Approach Delay (s)                |   | 0.0   |   |   | 100.6   |   |  | 9.7   |   |   | 0.0   |   |  |
| Approach LOS                      |   | A   |   |   | F   |   |  | A   |   |   | A   |   |  |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |  |
| HCM 2000 Control Delay            |   |   | 68.8  |   | HCM 2000 Level of Service   |   |  |   | E   |   |   |   |  |
| HCM 2000 Volume to Capacity ratio |   |   | 1.02  |   |   |   |  |   |   |   |   |   |  |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |  |   | 40.0  |   |   |   |  |
| Intersection Capacity Utilization |   |   | 82.8%   |   | ICU Level of Service  |   |  |   | E   |   |   |   |  |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |  |

c Critical Lane Group



| Lane Group              | EBT  | SBL  | SBT  |
|-------------------------|------|------|------|
| Lane Group Flow (vph)   | 1003 | 381  | 1194 |
| v/c Ratio               | 1.04 | 0.37 | 0.36 |
| Control Delay           | 93.6 | 3.7  | 4.1  |
| Queue Delay             | 3.6  | 2.5  | 1.2  |
| Total Delay             | 97.2 | 6.2  | 5.3  |
| Queue Length 50th (ft)  | ~348 | 0    | 13   |
| Queue Length 95th (ft)  | #443 | m270 | m36  |
| Internal Link Dist (ft) | 69   |      | 291  |
| Turn Bay Length (ft)    |      |      |      |
| Base Capacity (vph)     | 960  | 1021 | 3317 |
| Starvation Cap Reductn  | 0    | 503  | 1799 |
| Spillback Cap Reductn   | 9    | 53   | 86   |
| Storage Cap Reductn     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.05 | 0.74 | 0.79 |

**Intersection Summary**

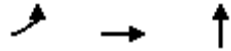
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL     | SBT     | SBR  |  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|------|------|------|---------|---------|------|--|
| Lane Configurations               |      | ↑↑↑   |       |      |                           |      |      |      |      | ↘       | ↑↑↑     |      |  |
| Traffic Volume (vph)              | 0    | 913   | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 394     | 976     | 0    |  |
| Future Volume (vph)               | 0    | 913   | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 394     | 976     | 0    |  |
| 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     |      |  |
| Lane Util. Factor                 |      | 0.91  |       |      |                           |      |      |      |      | 0.86    | 0.86    |      |  |
| Frbp, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flpb, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Frt                               |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flt Protected                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 1.00    |      |  |
| Satd. Flow (prot)                 |      | 4988  |       |      |                           |      |      |      |      | 1437    | 4774    |      |  |
| Flt Permitted                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 1.00    |      |  |
| Satd. Flow (perm)                 |      | 4988  |       |      |                           |      |      |      |      | 1437    | 4774    |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.91  | 0.88  | 0.92 | 0.92                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.87    | 0.87    | 0.92 |  |
| Adj. Flow (vph)                   | 0    | 1003  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 453     | 1122    | 0    |  |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 37      | 33      | 0    |  |
| Lane Group Flow (vph)             | 0    | 1003  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 344     | 1161    | 0    |  |
| Confl. Bikes (#/hr)               |      |       | 1     |      |                           |      |      |      |      |         |         |      |  |
| Heavy Vehicles (%)                | 2%   | 4%    | 2%    | 2%   | 2%                        | 2%   | 2%   | 2%   | 2%   | 8%      | 2%      | 2%   |  |
| Turn Type                         |      | NA    |       |      |                           |      |      |      |      | custom  | NA      |      |  |
| Protected Phases                  |      | 4 5   |       |      |                           |      |      |      |      | 1 2 6 8 | 1 2 6 8 |      |  |
| Permitted Phases                  |      |       |       |      |                           |      |      |      |      | 7       | 7       |      |  |
| Actuated Green, G (s)             |      | 26.0  |       |      |                           |      |      |      |      | 85.0    | 85.0    |      |  |
| Effective Green, g (s)            |      | 26.0  |       |      |                           |      |      |      |      | 85.0    | 85.0    |      |  |
| Actuated g/C Ratio                |      | 0.19  |       |      |                           |      |      |      |      | 0.63    | 0.63    |      |  |
| Clearance Time (s)                |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Vehicle Extension (s)             |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Lane Grp Cap (vph)                |      | 960   |       |      |                           |      |      |      |      | 968     | 3218    |      |  |
| v/s Ratio Prot                    |      | c0.20 |       |      |                           |      |      |      |      | 0.21    | c0.21   |      |  |
| v/s Ratio Perm                    |      |       |       |      |                           |      |      |      |      | 0.03    | 0.03    |      |  |
| v/c Ratio                         |      | 1.04  |       |      |                           |      |      |      |      | 0.36    | 0.36    |      |  |
| Uniform Delay, d1                 |      | 54.5  |       |      |                           |      |      |      |      | 11.9    | 12.0    |      |  |
| Progression Factor                |      | 1.00  |       |      |                           |      |      |      |      | 0.45    | 0.48    |      |  |
| Incremental Delay, d2             |      | 41.4  |       |      |                           |      |      |      |      | 0.1     | 0.0     |      |  |
| Delay (s)                         |      | 95.9  |       |      |                           |      |      |      |      | 5.5     | 5.8     |      |  |
| Level of Service                  |      | F     |       |      |                           |      |      |      |      | A       | A       |      |  |
| Approach Delay (s)                |      | 95.9  |       |      | 0.0                       |      |      | 0.0  |      |         | 5.7     |      |  |
| Approach LOS                      |      | F     |       |      | A                         |      |      | A    |      |         | A       |      |  |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| HCM 2000 Control Delay            |      |       | 40.8  |      | HCM 2000 Level of Service |      |      |      |      |         | D       |      |  |
| HCM 2000 Volume to Capacity ratio |      |       | 0.63  |      |                           |      |      |      |      |         |         |      |  |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      |      |      |      |      | 40.0    |         |      |  |
| Intersection Capacity Utilization |      |       | 65.2% |      | ICU Level of Service      |      |      |      |      | C       |         |      |  |
| Analysis Period (min)             |      |       | 15    |      |                           |      |      |      |      |         |         |      |  |
| c Critical Lane Group             |      |       |       |      |                           |      |      |      |      |         |         |      |  |



| Lane Group              | EBL  | EBT  | NBT  |
|-------------------------|------|------|------|
| Lane Group Flow (vph)   | 501  | 1056 | 1498 |
| v/c Ratio               | 0.47 | 0.50 | 0.98 |
| Control Delay           | 3.5  | 4.6  | 68.0 |
| Queue Delay             | 9.2  | 12.2 | 10.5 |
| Total Delay             | 12.7 | 16.8 | 78.5 |
| Queue Length 50th (ft)  | 13   | 31   | 371  |
| Queue Length 95th (ft)  | 10   | m34  | #455 |
| Internal Link Dist (ft) |      | 38   | 673  |
| Turn Bay Length (ft)    |      |      |      |
| Base Capacity (vph)     | 1069 | 2130 | 1529 |
| Starvation Cap Reductn  | 528  | 1061 | 0    |
| Spillback Cap Reductn   | 0    | 0    | 65   |
| Storage Cap Reductn     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.93 | 0.99 | 1.02 |

**Intersection Summary**



















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

|                                   |  |   |  |  |  |  |  |    |  |  |  |  |
|-----------------------------------|---|--|---|---|---|---|--|---|---|---|---|---|
| Movement                          | EBL   | EBT  | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |  | <br> |   |   |   |   |  | <br><br> |   |   |   |   |
| Traffic Volume (vph)              | 382   | 912  | 0   | 0   | 0   | 0   | 0  | 1063  | 284   | 0   | 0   | 0   |
| Future Volume (vph)               | 382   | 912  | 0   | 0   | 0   | 0   | 0  | 1063  | 284   | 0   | 0   | 0   |
| 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   |   |   |   |   |
| Lane Util. Factor                 | 0.91  | 0.91   |   |   |   |   |  | 0.86  |   |   |   |   |
| Frt                               | 1.00  | 1.00   |   |   |   |   |  | 0.97  |   |   |   |   |
| Flt Protected                     | 0.95  | 1.00   |   |   |   |   |  | 1.00  |   |   |   |   |
| Satd. Flow (prot)                 | 1610  | 3259   |   |   |   |   |  | 6292  |   |   |   |   |
| Flt Permitted                     | 0.95  | 1.00   |   |   |   |   |  | 1.00  |   |   |   |   |
| Satd. Flow (perm)                 | 1610  | 3259   |   |   |   |   |  | 6292  |   |   |   |   |
| Peak-hour factor, PHF             | 0.64  | 0.95   | 0.92  | 0.92  | 0.92  | 0.92  | 0.92   | 0.91  | 0.86  | 0.92  | 0.92  | 0.92  |
| Adj. Flow (vph)                   | 597   | 960  | 0   | 0   | 0   | 0   | 0  | 1168  | 330   | 0   | 0   | 0   |
| RTOR Reduction (vph)              | 37  | 37   | 0   | 0   | 0   | 0   | 0  | 35  | 0   | 0   | 0   | 0   |
| Lane Group Flow (vph)             | 464   | 1019   | 0   | 0   | 0   | 0   | 0  | 1463  | 0   | 0   | 0   | 0   |
| Heavy Vehicles (%)                | 2%  | 6%   | 2%  | 2%  | 2%  | 2%  | 2%   | 0%  | 2%  | 2%  | 2%  | 2%  |
| Turn Type                         | custom  | NA   |   |   |   |   |  | NA  |   |   |   |   |
| Protected Phases                  | 4 5 6 8   | 4 5 6 8  |   |   |   |   |  | 1 2 3   |   |   |   |   |
| Permitted Phases                  | 7   | 7  |   |   |   |   |  |   |   |   |   |   |
| Actuated Green, G (s)             | 79.0  | 79.0   |   |   |   |   |  | 40.0  |   |   |   |   |
| Effective Green, g (s)            | 79.0  | 79.0   |   |   |   |   |  | 40.0  |   |   |   |   |
| Actuated g/C Ratio                | 0.59  | 0.59   |   |   |   |   |  | 0.30  |   |   |   |   |
| Clearance Time (s)                |   |  |   |   |   |   |  |   |   |   |   |   |
| Vehicle Extension (s)             |   |  |   |   |   |   |  |   |   |   |   |   |
| Lane Grp Cap (vph)                | 1013  | 2051   |   |   |   |   |  | 1864  |   |   |   |   |
| v/s Ratio Prot                    | 0.24  | c0.26  |   |   |   |   |  | c0.23   |   |   |   |   |
| v/s Ratio Perm                    | 0.04  | 0.05   |   |   |   |   |  |   |   |   |   |   |
| v/c Ratio                         | 0.46  | 0.50   |   |   |   |   |  | 0.78  |   |   |   |   |
| Uniform Delay, d1                 | 15.9  | 16.4   |   |   |   |   |  | 43.6  |   |   |   |   |
| Progression Factor                | 0.26  | 0.36   |   |   |   |   |  | 1.00  |   |   |   |   |
| Incremental Delay, d2             | 0.1   | 0.0  |   |   |   |   |  | 3.4   |   |   |   |   |
| Delay (s)                         | 4.2   | 5.9  |   |   |   |   |  | 47.0  |   |   |   |   |
| Level of Service                  | A   | A  |   |   |   |   |  | D   |   |   |   |   |
| Approach Delay (s)                |   | 5.3  |   |   | 0.0   |   |  | 47.0  |   |   | 0.0   |   |
| Approach LOS                      |   | A  |   |   | A   |   |  | D   |   |   | A   |   |
| <b>Intersection Summary</b>       |   |  |   |   |   |   |  |   |   |   |   |   |
| HCM 2000 Control Delay            |   |  | 25.7  |   |   |   |  | HCM 2000 Level of Service   |   |   | C   |   |
| HCM 2000 Volume to Capacity ratio |   |  | 0.77  |   |   |   |  |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |  | 135.0   |   |   |   |  | Sum of lost time (s)  |   | 40.0  |   |   |
| Intersection Capacity Utilization |   |  | 69.7%   |   |   |   |  | ICU Level of Service  |   | C   |   |   |
| Analysis Period (min)             |   |  | 15  |   |   |   |  |   |   |   |   |   |
| c                                 | Critical Lane Group   |  |   |   |   |   |  |   |   |   |   |   |





| Lane Group              | WBL  | WBT  | NBL  | NBT  | SBT  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 644  | 970  | 204  | 304  | 30   |
| v/c Ratio               | 0.95 | 0.95 | 0.26 | 0.19 | 0.02 |
| Control Delay           | 53.1 | 45.8 | 3.3  | 1.3  | 11.3 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 53.1 | 45.8 | 3.3  | 1.3  | 11.3 |
| Queue Length 50th (ft)  | 131  | 132  | 0    | 0    | 1    |
| Queue Length 95th (ft)  | #231 | #191 | m0   | m0   | 7    |
| Internal Link Dist (ft) |      | 364  |      | 236  | 206  |
| Turn Bay Length (ft)    | 300  |      |      |      |      |
| Base Capacity (vph)     | 678  | 1016 | 779  | 1631 | 1303 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.95 | 0.95 | 0.26 | 0.19 | 0.02 |

**Intersection Summary**

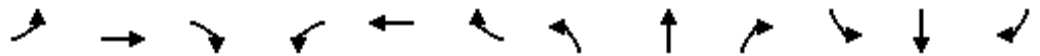
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: West Gate Blvd & US 290 WBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement                          | EBL  | EBT  | EBR   | WBL                       | WBT   | WBR  | NBL     | NBT     | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|------|------|-------|---------------------------|-------|------|---------|---------|------|------|------|------|--|
| Lane Configurations               |      |      |       | ↔↔                        | ↔↔↔   |      | ↔       | ↔↔      |      |      | ↔↔↔  |      |  |
| Traffic Volume (vph)              | 0    | 0    | 0     | 605                       | 676   | 91   | 375     | 88      | 0    | 0    | 13   | 11   |  |
| Future Volume (vph)               | 0    | 0    | 0     | 605                       | 676   | 91   | 375     | 88      | 0    | 0    | 13   | 11   |  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900                      | 1900  | 1900 | 1900    | 1900    | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)               |      |      |       | 5.5                       | 5.5   |      | 6.0     | 6.0     |      |      | 6.0  |      |  |
| Lane Util. Factor                 |      |      |       | 0.97                      | 0.91  |      | 0.91    | 0.91    |      |      | 0.91 |      |  |
| Frbp, ped/bikes                   |      |      |       | 1.00                      | 1.00  |      | 1.00    | 1.00    |      |      | 1.00 |      |  |
| Flpb, ped/bikes                   |      |      |       | 1.00                      | 1.00  |      | 1.00    | 1.00    |      |      | 1.00 |      |  |
| Frt                               |      |      |       | 1.00                      | 0.97  |      | 1.00    | 1.00    |      |      | 0.93 |      |  |
| Flt Protected                     |      |      |       | 0.95                      | 1.00  |      | 0.95    | 0.97    |      |      | 1.00 |      |  |
| Satd. Flow (prot)                 |      |      |       | 3433                      | 4904  |      | 1595    | 3280    |      |      | 4422 |      |  |
| Flt Permitted                     |      |      |       | 0.95                      | 1.00  |      | 0.74    | 0.76    |      |      | 1.00 |      |  |
| Satd. Flow (perm)                 |      |      |       | 3433                      | 4904  |      | 1235    | 2586    |      |      | 4422 |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92  | 0.94                      | 0.84  | 0.55 | 0.92    | 0.88    | 0.92 | 0.92 | 0.88 | 0.75 |  |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 644                       | 805   | 165  | 408     | 100     | 0    | 0    | 15   | 15   |  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0                         | 49    | 0    | 0       | 0       | 0    | 0    | 11   | 0    |  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 644                       | 921   | 0    | 204     | 304     | 0    | 0    | 19   | 0    |  |
| Confl. Peds. (#/hr)               |      |      |       |                           |       | 1    |         |         |      |      |      |      |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%    | 2%                        | 3%    | 2%   | 3%      | 0%      | 2%   | 2%   | 0%   | 17%  |  |
| Turn Type                         |      |      |       | Perm                      | NA    |      | Perm    | NA      |      |      | NA   |      |  |
| Protected Phases                  |      |      |       |                           | 4 5   |      |         | 1 2 6 7 |      |      | 1 2  |      |  |
| Permitted Phases                  |      |      |       | 4 5                       |       |      | 1 2 6 7 |         |      |      |      |      |  |
| Actuated Green, G (s)             |      |      |       | 12.3                      | 12.3  |      | 41.2    | 41.2    |      |      | 19.2 |      |  |
| Effective Green, g (s)            |      |      |       | 12.3                      | 12.3  |      | 30.2    | 30.2    |      |      | 19.2 |      |  |
| Actuated g/C Ratio                |      |      |       | 0.19                      | 0.19  |      | 0.46    | 0.46    |      |      | 0.30 |      |  |
| Clearance Time (s)                |      |      |       |                           |       |      |         |         |      |      |      |      |  |
| Vehicle Extension (s)             |      |      |       |                           |       |      |         |         |      |      |      |      |  |
| Lane Grp Cap (vph)                |      |      |       | 649                       | 927   |      | 573     | 1201    |      |      | 1306 |      |  |
| v/s Ratio Prot                    |      |      |       |                           | c0.19 |      |         |         |      |      | 0.00 |      |  |
| v/s Ratio Perm                    |      |      |       | 0.19                      |       |      | c0.17   | 0.12    |      |      |      |      |  |
| v/c Ratio                         |      |      |       | 0.99                      | 0.99  |      | 0.36    | 0.25    |      |      | 0.01 |      |  |
| Uniform Delay, d1                 |      |      |       | 26.3                      | 26.3  |      | 11.2    | 10.6    |      |      | 16.2 |      |  |
| Progression Factor                |      |      |       | 1.00                      | 1.00  |      | 0.47    | 0.22    |      |      | 1.00 |      |  |
| Incremental Delay, d2             |      |      |       | 33.5                      | 28.1  |      | 0.1     | 0.0     |      |      | 0.0  |      |  |
| Delay (s)                         |      |      |       | 59.8                      | 54.4  |      | 5.4     | 2.3     |      |      | 16.2 |      |  |
| Level of Service                  |      |      |       | E                         | D     |      | A       | A       |      |      | B    |      |  |
| Approach Delay (s)                |      | 0.0  |       |                           | 56.6  |      |         | 3.6     |      |      | 16.2 |      |  |
| Approach LOS                      |      | A    |       |                           | E     |      |         | A       |      |      | B    |      |  |
| <b>Intersection Summary</b>       |      |      |       |                           |       |      |         |         |      |      |      |      |  |
| HCM 2000 Control Delay            |      |      | 43.5  | HCM 2000 Level of Service |       |      |         | D       |      |      |      |      |  |
| HCM 2000 Volume to Capacity ratio |      |      | 0.74  |                           |       |      |         |         |      |      |      |      |  |
| Actuated Cycle Length (s)         |      |      | 65.0  | Sum of lost time (s)      |       |      |         | 34.0    |      |      |      |      |  |
| Intersection Capacity Utilization |      |      | 75.9% | ICU Level of Service      |       |      |         | D       |      |      |      |      |  |
| Analysis Period (min)             |      |      | 15    |                           |       |      |         |         |      |      |      |      |  |
| c Critical Lane Group             |      |      |       |                           |       |      |         |         |      |      |      |      |  |



| Lane Group              | EBL  | EBT  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 64   | 908  | 442  | 785  | 65   | 607  |
| v/c Ratio               | 0.14 | 0.98 | 0.75 | 0.70 | 0.12 | 0.31 |
| Control Delay           | 19.4 | 49.3 | 34.9 | 6.1  | 36.9 | 1.5  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 19.4 | 49.3 | 34.9 | 6.1  | 36.9 | 1.5  |
| Queue Length 50th (ft)  | 19   | 176  | 88   | 0    | 29   | 1    |
| Queue Length 95th (ft)  | 37   | #293 | #148 | 47   | m31  | m1   |
| Internal Link Dist (ft) |      | 52   | 369  |      |      | 236  |
| Turn Bay Length (ft)    |      |      |      | 90   |      |      |
| Base Capacity (vph)     | 472  | 929  | 593  | 1117 | 500  | 1946 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.14 | 0.98 | 0.75 | 0.70 | 0.13 | 0.31 |

**Intersection Summary**























# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

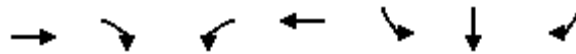
m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

|                                   |  |   |  |  |  |  |  |   |   |  |   |  |
|-----------------------------------|---|--|---|---|---|---|--|--|--|---|--|---|
| Movement                          | EBL   | EBT  | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR  | SBL   | SBT  | SBR   |
| Lane Configurations               |  | <br> |   |   |   |   |  | <br> | <br> |  | <br> |   |
| Traffic Volume (vph)              | 46  | 624  | 168   | 0   | 0   | 0   | 0  | 420  | 714  | 45  | 583  | 0   |
| Future Volume (vph)               | 46  | 624  | 168   | 0   | 0   | 0   | 0  | 420  | 714  | 45  | 583  | 0   |
| 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  | 5.5   | 5.5  |   |
| Lane Util. Factor                 | 1.00  | 0.95   |   |   |   |   |  | 0.95   | 0.88   | 1.00  | 0.95   |   |
| Frbp, ped/bikes                   | 1.00  | 1.00   |   |   |   |   |  | 1.00   | 0.98   | 1.00  | 1.00   |   |
| Flpb, ped/bikes                   | 1.00  | 1.00   |   |   |   |   |  | 1.00   | 1.00   | 1.00  | 1.00   |   |
| Frt                               | 1.00  | 0.97   |   |   |   |   |  | 1.00   | 0.85   | 1.00  | 1.00   |   |
| Flt Protected                     | 0.95  | 1.00   |   |   |   |   |  | 1.00   | 1.00   | 0.95  | 1.00   |   |
| Satd. Flow (prot)                 | 1805  | 3391   |   |   |   |   |  | 3505   | 2750   | 1736  | 3539   |   |
| Flt Permitted                     | 0.95  | 1.00   |   |   |   |   |  | 1.00   | 1.00   | 0.95  | 1.00   |   |
| Satd. Flow (perm)                 | 1805  | 3391   |   |   |   |   |  | 3505   | 2750   | 1736  | 3539   |   |
| Peak-hour factor, PHF             | 0.72  | 0.89   | 0.81  | 0.92  | 0.92  | 0.92  | 0.92   | 0.95   | 0.91   | 0.69  | 0.96   | 0.92  |
| Adj. Flow (vph)                   | 64  | 701  | 207   | 0   | 0   | 0   | 0  | 442  | 785  | 65  | 607  | 0   |
| RTOR Reduction (vph)              | 0   | 47   | 0   | 0   | 0   | 0   | 0  | 0  | 646  | 0   | 0  | 0   |
| Lane Group Flow (vph)             | 64  | 861  | 0   | 0   | 0   | 0   | 0  | 442  | 139  | 65  | 607  | 0   |
| Confl. Peds. (#/hr)               |   |  | 2   |   |   |   |  |  | 1  | 1   |  |   |
| Heavy Vehicles (%)                | 0%  | 2%   | 4%  | 2%  | 2%  | 2%  | 2%   | 3%   | 1%   | 4%  | 2%   | 2%  |
| Turn Type                         | Split   | NA   |   |   |   |   |  | NA   | Perm   | Prot  | NA   |   |
| Protected Phases                  | 1 7   | 1 7  |   |   |   |   |  | 5 6  |  | 2 4   | 2 4 5 6  |   |
| Permitted Phases                  |   |  |   |   |   |   |  |  | 5 6  |   |  |   |
| Actuated Green, G (s)             | 17.0  | 17.0   |   |   |   |   |  | 11.5   | 11.5   | 19.5  | 36.5   |   |
| Effective Green, g (s)            | 11.5  | 11.5   |   |   |   |   |  | 11.5   | 11.5   | 19.5  | 30.5   |   |
| Actuated g/C Ratio                | 0.18  | 0.18   |   |   |   |   |  | 0.18   | 0.18   | 0.30  | 0.47   |   |
| Clearance Time (s)                |   |  |   |   |   |   |  |  |  |   |  |   |
| Vehicle Extension (s)             |   |  |   |   |   |   |  |  |  |   |  |   |
| Lane Grp Cap (vph)                | 319   | 599  |   |   |   |   |  | 620  | 486  | 520   | 1660   |   |
| v/s Ratio Prot                    | 0.04  | c0.25  |   |   |   |   |  | c0.13  |  | 0.04  | c0.17  |   |
| v/s Ratio Perm                    |   |  |   |   |   |   |  |  | 0.05   |   |  |   |
| v/c Ratio                         | 0.20  | 1.44   |   |   |   |   |  | 0.71   | 0.29   | 0.12  | 0.37   |   |
| Uniform Delay, d1                 | 22.8  | 26.8   |   |   |   |   |  | 25.2   | 23.2   | 16.5  | 11.1   |   |
| Progression Factor                | 1.00  | 1.00   |   |   |   |   |  | 1.00   | 1.00   | 2.17  | 0.18   |   |
| Incremental Delay, d2             | 0.1   | 206.3  |   |   |   |   |  | 6.8  | 1.5  | 0.2   | 0.2  |   |
| Delay (s)                         | 22.9  | 233.1  |   |   |   |   |  | 32.0   | 24.7   | 36.1  | 2.2  |   |
| Level of Service                  | C   | F  |   |   |   |   |  | C  | C  | D   | A  |   |
| Approach Delay (s)                |   | 219.2  |   |   | 0.0   |   |  | 27.3   |  |   | 5.5  |   |
| Approach LOS                      |   | F  |   |   | A   |   |  | C  |  |   | A  |   |
| <b>Intersection Summary</b>       |   |  |   |   |   |   |  |  |  |   |  |   |
| HCM 2000 Control Delay            |   |  | 87.2  |   |   |   |  |  |  |   |  | F   |
| HCM 2000 Volume to Capacity ratio |   |  | 1.06  |   |   |   |  |  |  |   |  |   |
| Actuated Cycle Length (s)         |   |  | 65.0  |   |   |   |  |  |  |   | 34.0   |   |
| Intersection Capacity Utilization |   |  | 75.9%   |   |   |   |  |  |  |   |  | D   |
| Analysis Period (min)             |   |  | 15  |   |   |   |  |  |  |   |  |   |

c Critical Lane Group



| Lane Group              | EBT  | EBR  | WBL  | WBT   | SBL   | SBT   | SBR  |
|-------------------------|------|------|------|-------|-------|-------|------|
| Lane Group Flow (vph)   | 1793 | 706  | 207  | 4909  | 183   | 188   | 621  |
| v/c Ratio               | 0.55 | 0.25 | 0.67 | 1.20  | 0.93  | 0.91  | 0.40 |
| Control Delay           | 18.0 | 0.2  | 27.8 | 119.9 | 125.3 | 119.0 | 0.8  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.3   | 0.0   | 0.0   | 0.0  |
| Total Delay             | 18.0 | 0.2  | 27.8 | 120.2 | 125.3 | 119.0 | 0.8  |
| Queue Length 50th (ft)  | 406  | 0    | 95   | ~2619 | 229   | 234   | 0    |
| Queue Length 95th (ft)  | 443  | 0    | m43  | m1716 | #315  | 183   | 0    |
| Internal Link Dist (ft) | 834  |      |      | 1419  |       | 192   |      |
| Turn Bay Length (ft)    |      |      | 950  |       |       |       |      |
| Base Capacity (vph)     | 3242 | 2777 | 311  | 4096  | 196   | 207   | 1553 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 719   | 0     | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0     | 0     | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0     | 0     | 0     | 0    |
| Reduced v/c Ratio       | 0.55 | 0.25 | 0.67 | 1.45  | 0.93  | 0.91  | 0.40 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

13: Capital of Texas Hwy & Mopac SBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement                          | EBL  | EBT   | EBR    | WBL   | WBT   | WBR                       | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-----------------------------------|------|-------|--------|-------|-------|---------------------------|------|------|------|-------|-------|-------|
| Lane Configurations               |      | ↑↑↑   | ↑↑     | ↑     | ↑↑↑   |                           |      |      |      | ↑     | ↑     | ↑     |
| Traffic Volume (vph)              | 0    | 1721  | 593    | 122   | 4565  | 0                         | 0    | 0    | 0    | 207   | 55    | 565   |
| Future Volume (vph)               | 0    | 1721  | 593    | 122   | 4565  | 0                         | 0    | 0    | 0    | 207   | 55    | 565   |
| Ideal Flow (vphp)                 | 1900 | 1900  | 1900   | 1900  | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  |
| Total Lost time (s)               |      | 7.0   | 4.0    | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5   | 4.0   |
| Lane Util. Factor                 |      | 0.91  | 0.88   | 1.00  | 0.91  |                           |      |      |      | 0.95  | 0.95  | 1.00  |
| Frbp, ped/bikes                   |      | 1.00  | 0.99   | 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  |
| Frt                               |      | 1.00  | 0.85   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00  | 0.85  |
| Flt Protected                     |      | 1.00  | 1.00   | 0.95  | 1.00  |                           |      |      |      | 0.95  | 0.98  | 1.00  |
| Satd. Flow (prot)                 |      | 4988  | 2777   | 1752  | 5085  |                           |      |      |      | 1649  | 1736  | 1553  |
| Flt Permitted                     |      | 1.00  | 1.00   | 0.08  | 1.00  |                           |      |      |      | 0.95  | 0.98  | 1.00  |
| Satd. Flow (perm)                 |      | 4988  | 2777   | 155   | 5085  |                           |      |      |      | 1649  | 1736  | 1553  |
| Peak-hour factor, PHF             | 0.92 | 0.96  | 0.84   | 0.59  | 0.93  | 0.92                      | 0.92 | 0.92 | 0.92 | 0.78  | 0.52  | 0.91  |
| Adj. Flow (vph)                   | 0    | 1793  | 706    | 207   | 4909  | 0                         | 0    | 0    | 0    | 265   | 106   | 621   |
| RTOR Reduction (vph)              | 0    | 0     | 0      | 0     | 0     | 0                         | 0    | 0    | 0    | 0     | 0     | 0     |
| Lane Group Flow (vph)             | 0    | 1793  | 706    | 207   | 4909  | 0                         | 0    | 0    | 0    | 183   | 188   | 621   |
| Confl. Bikes (#/hr)               |      |       | 6      |       |       |                           |      |      |      |       |       |       |
| Heavy Vehicles (%)                | 2%   | 4%    | 1%     | 3%    | 2%    | 2%                        | 2%   | 2%   | 2%   | 4%    | 0%    | 4%    |
| Turn Type                         |      | NA    | Free   | pm+pt | NA    |                           |      |      |      | Perm  | NA    | Free  |
| Protected Phases                  |      | 2     |        | 1     | 6     |                           |      |      |      |       | 8     |       |
| Permitted Phases                  |      |       | Free   | 6     |       |                           |      |      |      | 8     |       | Free  |
| Actuated Green, G (s)             |      | 117.0 | 180.0  | 145.0 | 145.0 |                           |      |      |      | 21.5  | 21.5  | 180.0 |
| Effective Green, g (s)            |      | 117.0 | 180.0  | 145.0 | 145.0 |                           |      |      |      | 21.5  | 21.5  | 180.0 |
| Actuated g/C Ratio                |      | 0.65  | 1.00   | 0.81  | 0.81  |                           |      |      |      | 0.12  | 0.12  | 1.00  |
| Clearance Time (s)                |      | 7.0   |        | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5   |       |
| Vehicle Extension (s)             |      | 4.0   |        | 2.0   | 4.0   |                           |      |      |      | 2.0   | 2.0   |       |
| Lane Grp Cap (vph)                |      | 3242  | 2777   | 311   | 4096  |                           |      |      |      | 196   | 207   | 1553  |
| v/s Ratio Prot                    |      | 0.36  |        | 0.08  | c0.97 |                           |      |      |      |       |       |       |
| v/s Ratio Perm                    |      |       | 0.25   | 0.46  |       |                           |      |      |      | c0.11 | 0.11  | 0.40  |
| v/c Ratio                         |      | 0.55  | 0.25   | 0.67  | 1.20  |                           |      |      |      | 0.93  | 0.91  | 0.40  |
| Uniform Delay, d1                 |      | 17.2  | 0.0    | 31.2  | 17.5  |                           |      |      |      | 78.5  | 78.3  | 0.0   |
| Progression Factor                |      | 1.00  | 1.00   | 1.09  | 1.81  |                           |      |      |      | 1.00  | 1.00  | 1.00  |
| Incremental Delay, d2             |      | 0.7   | 0.2    | 1.0   | 89.6  |                           |      |      |      | 49.0  | 42.4  | 0.8   |
| Delay (s)                         |      | 17.9  | 0.2    | 35.1  | 121.2 |                           |      |      |      | 127.5 | 120.7 | 0.8   |
| Level of Service                  |      | B     | A      | D     | F     |                           |      |      |      | F     | F     | A     |
| Approach Delay (s)                |      | 12.9  |        |       | 117.7 |                           |      | 0.0  |      |       | 46.9  |       |
| Approach LOS                      |      | B     |        |       | F     |                           |      | A    |      |       | D     |       |
| <b>Intersection Summary</b>       |      |       |        |       |       |                           |      |      |      |       |       |       |
| HCM 2000 Control Delay            |      |       | 79.1   |       |       | HCM 2000 Level of Service |      |      |      | E     |       |       |
| HCM 2000 Volume to Capacity ratio |      |       | 1.21   |       |       |                           |      |      |      |       |       |       |
| Actuated Cycle Length (s)         |      |       | 180.0  |       |       | Sum of lost time (s)      |      |      |      | 20.5  |       |       |
| Intersection Capacity Utilization |      |       | 125.9% |       |       | ICU Level of Service      |      |      |      | H     |       |       |
| Analysis Period (min)             |      |       | 15     |       |       |                           |      |      |      |       |       |       |

c Critical Lane Group



| Lane Group              | EBL   | EBT  | WBT   | WBR    | NBL   | NBT  | NBR   |
|-------------------------|-------|------|-------|--------|-------|------|-------|
| Lane Group Flow (vph)   | 379   | 1719 | 3185  | 3187   | 1806  | 215  | 451   |
| v/c Ratio               | 1.33  | 0.69 | 1.16  | 2.06   | 1.72  | 0.54 | 1.18  |
| Control Delay           | 208.5 | 13.4 | 121.0 | 495.8  | 366.7 | 69.5 | 154.5 |
| Queue Delay             | 0.0   | 0.0  | 2.0   | 0.0    | 0.0   | 0.0  | 0.0   |
| Total Delay             | 208.5 | 13.4 | 123.0 | 495.8  | 366.7 | 69.5 | 154.5 |
| Queue Length 50th (ft)  | ~528  | 381  | ~1620 | ~5710  | ~1110 | 230  | ~570  |
| Queue Length 95th (ft)  | m#738 | 405  | m782  | m#2989 | #1198 | 283  | #580  |
| Internal Link Dist (ft) |       | 1419 | 756   |        |       | 675  |       |
| Turn Bay Length (ft)    |       |      |       |        | 300   |      |       |
| Base Capacity (vph)     | 286   | 2487 | 2740  | 1549   | 1050  | 395  | 382   |
| Starvation Cap Reductn  | 0     | 0    | 0     | 0      | 0     | 0    | 0     |
| Spillback Cap Reductn   | 0     | 0    | 1416  | 0      | 0     | 0    | 0     |
| Storage Cap Reductn     | 0     | 0    | 0     | 0      | 0     | 0    | 0     |
| Reduced v/c Ratio       | 1.33  | 0.69 | 2.41  | 2.06   | 1.72  | 0.54 | 1.18  |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

14: Mopac NBFR & Capital of Texas Hwy  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

| Movement                     | EBL   | EBT   | EBR  | WBL   | WBT   | WBR   | NBL   | NBT   | NBR  | SBL | SBT | SBR |
|------------------------------|-------|-------|------|-------|-------|-------|-------|-------|------|-----|-----|-----|
| Lane Configurations          |       |       |      |       |       |       |       |       |      |     |     |     |
| Traffic Volume (veh/h)       | 349   | 1616  | 0    | 0     | 2962  | 3091  | 1698  | 172   | 338  | 0   | 0   | 0   |
| Future Volume (veh/h)        | 349   | 1616  | 0    | 0     | 2962  | 3091  | 1698  | 172   | 338  | 0   | 0   | 0   |
| Number                       | 5     | 2     | 12   | 1     | 6     | 16    | 7     | 4     | 14   |     |     |     |
| 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 |     |     |     |
| Adj Sat Flow, veh/h/ln       | 1863  | 1827  | 0    | 0     | 1863  | 1845  | 1881  | 1900  | 1863 |     |     |     |
| Adj Flow Rate, veh/h         | 379   | 1719  | 0    | 0     | 3185  | 0     | 1806  | 215   | 0    |     |     |     |
| Adj No. of Lanes             | 1     | 2     | 0    | 0     | 3     | 1     | 3     | 1     | 1    |     |     |     |
| Peak Hour Factor             | 0.92  | 0.94  | 0.92 | 0.92  | 0.93  | 0.97  | 0.94  | 0.80  | 0.75 |     |     |     |
| Percent Heavy Veh, %         | 2     | 4     | 0    | 0     | 2     | 3     | 1     | 0     | 2    |     |     |     |
| Cap, veh/h                   | 286   | 2488  | 0    | 0     | 2740  | 845   | 1053  | 396   | 330  |     |     |     |
| Arrive On Green              | 0.28  | 1.00  | 0.00 | 0.00  | 0.54  | 0.00  | 0.21  | 0.21  | 0.00 |     |     |     |
| Sat Flow, veh/h              | 1774  | 3563  | 0    | 0     | 5253  | 1568  | 5052  | 1900  | 1583 |     |     |     |
| Grp Volume(v), veh/h         | 379   | 1719  | 0    | 0     | 3185  | 0     | 1806  | 215   | 0    |     |     |     |
| Grp Sat Flow(s),veh/h/ln     | 1774  | 1736  | 0    | 0     | 1695  | 1568  | 1684  | 1900  | 1583 |     |     |     |
| Q Serve(g_s), s              | 25.0  | 0.0   | 0.0  | 0.0   | 97.0  | 0.0   | 37.5  | 18.2  | 0.0  |     |     |     |
| Cycle Q Clear(g_c), s        | 25.0  | 0.0   | 0.0  | 0.0   | 97.0  | 0.0   | 37.5  | 18.2  | 0.0  |     |     |     |
| Prop In Lane                 | 1.00  |       | 0.00 | 0.00  |       | 1.00  | 1.00  |       | 1.00 |     |     |     |
| Lane Grp Cap(c), veh/h       | 286   | 2488  | 0    | 0     | 2740  | 845   | 1053  | 396   | 330  |     |     |     |
| V/C Ratio(X)                 | 1.32  | 0.69  | 0.00 | 0.00  | 1.16  | 0.00  | 1.72  | 0.54  | 0.00 |     |     |     |
| Avail Cap(c_a), veh/h        | 286   | 2488  | 0    | 0     | 2740  | 845   | 1053  | 396   | 330  |     |     |     |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |     |     |     |
| Upstream Filter(I)           | 0.78  | 0.78  | 0.00 | 0.00  | 1.00  | 0.00  | 1.00  | 1.00  | 0.00 |     |     |     |
| Uniform Delay (d), s/veh     | 63.3  | 0.0   | 0.0  | 0.0   | 41.5  | 0.0   | 71.3  | 63.6  | 0.0  |     |     |     |
| Incr Delay (d2), s/veh       | 163.4 | 1.3   | 0.0  | 0.0   | 77.4  | 0.0   | 326.2 | 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     | 27.2  | 0.4   | 0.0  | 0.0   | 64.8  | 0.0   | 49.2  | 9.6   | 0.0  |     |     |     |
| LnGrp Delay(d),s/veh         | 226.6 | 1.3   | 0.0  | 0.0   | 118.9 | 0.0   | 397.4 | 64.5  | 0.0  |     |     |     |
| LnGrp LOS                    | F     | A     |      |       | F     |       | F     | E     |      |     |     |     |
| Approach Vol, veh/h          |       | 2098  |      |       | 3185  |       |       | 2021  |      |     |     |     |
| Approach Delay, s/veh        |       | 42.0  |      |       | 118.9 |       |       | 362.0 |      |     |     |     |
| Approach LOS                 |       | D     |      |       | F     |       |       | F     |      |     |     |     |
| Timer                        | 1     | 2     | 3    | 4     | 5     | 6     | 7     | 8     |      |     |     |     |
| Assigned Phs                 |       | 2     |      | 4     | 5     | 6     |       |       |      |     |     |     |
| Phs Duration (G+Y+Rc), s     |       | 136.0 |      | 44.0  | 32.0  | 104.0 |       |       |      |     |     |     |
| Change Period (Y+Rc), s      |       | 7.0   |      | 6.5   | 7.0   | 7.0   |       |       |      |     |     |     |
| Max Green Setting (Gmax), s  |       | 129.0 |      | 37.5  | 25.0  | 97.0  |       |       |      |     |     |     |
| Max Q Clear Time (g_c+I1), s |       | 2.0   |      | 39.5  | 27.0  | 99.0  |       |       |      |     |     |     |
| Green Ext Time (p_c), s      |       | 5.3   |      | 0.0   | 0.0   | 0.0   |       |       |      |     |     |     |
| <b>Intersection Summary</b>  |       |       |      |       |       |       |       |       |      |     |     |     |
| HCM 2010 Ctrl Delay          |       |       |      | 164.1 |       |       |       |       |      |     |     |     |
| HCM 2010 LOS                 |       |       |      | F     |       |       |       |       |      |     |     |     |





| Lane Group              | WBR  | NBT   | NBR  | SBL    | SBT    |
|-------------------------|------|-------|------|--------|--------|
| Lane Group Flow (vph)   | 186  | 6052  | 150  | 667    | 4346   |
| v/c Ratio               | 0.35 | 1.61  | 0.13 | 1.96   | 1.17   |
| Control Delay           | 65.5 | 299.3 | 6.7  | 478.1  | 103.4  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0    | 0.0    |
| Total Delay             | 65.5 | 299.3 | 6.7  | 478.1  | 103.4  |
| Queue Length 50th (ft)  | 110  | ~3738 | 44   | ~1228  | ~2236  |
| Queue Length 95th (ft)  | 133  | #3657 | 44   | m#1327 | m#2186 |
| Internal Link Dist (ft) |      | 1281  |      |        | 1273   |
| Turn Bay Length (ft)    |      |       | 430  | 550    |        |
| Base Capacity (vph)     | 536  | 3757  | 1195 | 340    | 3721   |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0      | 0      |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0      | 0      |
| Storage Cap Reductn     | 0    | 0     | 0    | 0      | 0      |
| Reduced v/c Ratio       | 0.35 | 1.61  | 0.13 | 1.96   | 1.17   |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Capital of Texas Hwy & Barton Creek Plaza Driveway  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement                          | WBL  | WBR  | NBT    | NBR   | SBL                       | SBT   |
|-----------------------------------|------|------|--------|-------|---------------------------|-------|
| Lane Configurations               |      | ↗↗   | ↕↕↕    | ↘     | ↘                         | ↕↕↕   |
| Traffic Volume (vph)              | 0    | 145  | 5931   | 93    | 560                       | 4129  |
| Future Volume (vph)               | 0    | 145  | 5931   | 93    | 560                       | 4129  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900                      | 1900  |
| Total Lost time (s)               |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Lane Util. Factor                 |      | 0.88 | 0.91   | 1.00  | 1.00                      | 0.91  |
| Frbp, ped/bikes                   |      | 1.00 | 1.00   | 1.00  | 1.00                      | 1.00  |
| Flpb, ped/bikes                   |      | 1.00 | 1.00   | 1.00  | 1.00                      | 1.00  |
| Frt                               |      | 0.85 | 1.00   | 0.85  | 1.00                      | 1.00  |
| Flt Protected                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |      | 2842 | 5085   | 1615  | 1805                      | 5036  |
| Flt Permitted                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |      | 2842 | 5085   | 1615  | 1805                      | 5036  |
| Peak-hour factor, PHF             | 0.92 | 0.78 | 0.98   | 0.62  | 0.84                      | 0.95  |
| Adj. Flow (vph)                   | 0    | 186  | 6052   | 150   | 667                       | 4346  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 2     | 0                         | 0     |
| Lane Group Flow (vph)             | 0    | 186  | 6052   | 148   | 667                       | 4346  |
| Confl. Bikes (#/hr)               |      |      |        | 1     |                           |       |
| Heavy Vehicles (%)                | 2%   | 0%   | 2%     | 0%    | 0%                        | 3%    |
| Turn Type                         |      | Over | NA     | Prot  | Prot                      | NA    |
| Protected Phases                  |      | 5    | 6      | 6     | 5                         | 6     |
| Permitted Phases                  |      |      |        |       |                           |       |
| Actuated Green, G (s)             |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Effective Green, g (s)            |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Actuated g/C Ratio                |      | 0.19 | 0.74   | 0.74  | 0.19                      | 0.74  |
| Clearance Time (s)                |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Vehicle Extension (s)             |      | 2.0  | 4.0    | 4.0   | 2.0                       | 4.0   |
| Lane Grp Cap (vph)                |      | 536  | 3757   | 1193  | 340                       | 3721  |
| v/s Ratio Prot                    |      | 0.07 | c1.19  | 0.09  | c0.37                     | 0.86  |
| v/s Ratio Perm                    |      |      |        |       |                           |       |
| v/c Ratio                         |      | 0.35 | 1.61   | 0.12  | 1.96                      | 1.17  |
| Uniform Delay, d1                 |      | 63.4 | 23.5   | 6.8   | 73.0                      | 23.5  |
| Progression Factor                |      | 1.00 | 1.00   | 1.00  | 1.06                      | 1.00  |
| Incremental Delay, d2             |      | 0.1  | 276.1  | 0.2   | 442.9                     | 78.7  |
| Delay (s)                         |      | 63.5 | 299.6  | 7.0   | 520.6                     | 102.3 |
| Level of Service                  |      | E    | F      | A     | F                         | F     |
| Approach Delay (s)                | 63.5 |      | 292.6  |       |                           | 157.9 |
| Approach LOS                      | E    |      | F      |       |                           | F     |
| <b>Intersection Summary</b>       |      |      |        |       |                           |       |
| HCM 2000 Control Delay            |      |      | 229.6  |       | HCM 2000 Level of Service | F     |
| HCM 2000 Volume to Capacity ratio |      |      | 1.68   |       |                           |       |
| Actuated Cycle Length (s)         |      |      | 180.0  |       | Sum of lost time (s)      | 13.0  |
| Intersection Capacity Utilization |      |      | 156.5% |       | ICU Level of Service      | H     |
| Analysis Period (min)             |      |      | 15     |       |                           |       |

c Critical Lane Group





















| Lane Group              | WBL  | WBT    | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|--------|------|------|------|------|
| Lane Group Flow (vph)   | 174  | 1803   | 106  | 361  | 421  | 211  |
| v/c Ratio               | 0.25 | 1.22   | 0.25 | 0.40 | 0.98 | 0.44 |
| Control Delay           | 27.3 | 141.9  | 11.2 | 13.9 | 89.3 | 15.5 |
| Queue Delay             | 0.0  | 0.0    | 0.6  | 3.9  | 5.3  | 0.0  |
| Total Delay             | 27.3 | 141.9  | 11.8 | 17.8 | 94.6 | 15.5 |
| Queue Length 50th (ft)  | 99   | ~1021  | 41   | 185  | 371  | 34   |
| Queue Length 95th (ft)  | m147 | m#1145 | m53  | 159  | #509 | 31   |
| Internal Link Dist (ft) |      | 522    |      | 175  | 200  |      |
| Turn Bay Length (ft)    |      |        | 70   |      |      | 90   |
| Base Capacity (vph)     | 692  | 1475   | 508  | 892  | 430  | 485  |
| Starvation Cap Reductn  | 0    | 0      | 189  | 436  | 0    | 0    |
| Spillback Cap Reductn   | 35   | 0      | 0    | 0    | 10   | 0    |
| Storage Cap Reductn     | 0    | 0      | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.26 | 1.22   | 0.33 | 0.79 | 1.00 | 0.44 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

16: US 290 WBFR & Victory Drive  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |   |   |   |  |  |   |  |  |   |   |  |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 153   | 1483  | 199   | 100   | 224   | 0   | 0   | 320   | 129   |
| Future Volume (vph)               | 0   | 0   | 0   | 153   | 1483  | 199   | 100   | 224   | 0   | 0   | 320   | 129   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               |   |   |   | 5.5   | 5.5   |   | 5.5   | 4.5   |   |   | 4.5   | 4.5   |
| Lane Util. Factor                 |   |   |   | 1.00  | 0.95  |   | 1.00  | 1.00  |   |   | 1.00  | 1.00  |
| Frbp, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  | 0.98  |
| Flpb, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  | 1.00  |
| Frt                               |   |   |   | 1.00  | 0.98  |   | 1.00  | 1.00  |   |   | 1.00  | 0.85  |
| Flt Protected                     |   |   |   | 0.95  | 1.00  |   | 0.95  | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (prot)                 |   |   |   | 1597  | 3379  |   | 1769  | 1827  |   |   | 1759  | 1489  |
| Flt Permitted                     |   |   |   | 0.95  | 1.00  |   | 0.14  | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (perm)                 |   |   |   | 1597  | 3379  |   | 261   | 1827  |   |   | 1759  | 1489  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.88  | 0.96  | 0.77  | 0.94  | 0.62  | 0.92  | 0.92  | 0.76  | 0.61  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 174   | 1545  | 258   | 106   | 361   | 0   | 0   | 421   | 211   |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 10  | 0   | 0   | 0   | 0   | 0   | 0   | 122   |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 174   | 1793  | 0   | 106   | 361   | 0   | 0   | 421   | 89  |
| Confl. Peds. (#/hr)               |   |   |   |   |   | 6   | 6   |   |   |   |   | 6   |
| Confl. Bikes (#/hr)               |   |   |   |   |   |   |   |   |   |   |   | 4   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 13%   | 3%  | 11%   | 2%  | 4%  | 2%  | 2%  | 8%  | 6%  |
| Turn Type                         |   |   |   | Split   | NA  |   | pm+pt   | NA  |   |   | NA  | Perm  |
| Protected Phases                  |   |   |   | 7 8   | 7 8   |   | 2 10 1 2 6 10   |   |   |   | 1 6   |   |
| Permitted Phases                  |   |   |   |   |   |   | 1 2 6 10  |   |   |   |   | 1 6   |
| Actuated Green, G (s)             |   |   |   | 58.0  | 58.0  |   | 61.0  | 66.5  |   |   | 33.0  | 33.0  |
| Effective Green, g (s)            |   |   |   | 58.0  | 58.0  |   | 50.5  | 55.0  |   |   | 33.0  | 33.0  |
| Actuated g/C Ratio                |   |   |   | 0.43  | 0.43  |   | 0.37  | 0.41  |   |   | 0.24  | 0.24  |
| Clearance Time (s)                |   |   |   |   |   |   |   |   |   |   |   |   |
| Vehicle Extension (s)             |   |   |   |   |   |   |   |   |   |   |   |   |
| Lane Grp Cap (vph)                |   |   |   | 686   | 1451  |   | 343   | 744   |   |   | 429   | 363   |
| v/s Ratio Prot                    |   |   |   | 0.11  | c0.53   |   | 0.05  | c0.20   |   |   | c0.24   |   |
| v/s Ratio Perm                    |   |   |   |   |   |   | 0.07  |   |   |   |   | 0.06  |
| v/c Ratio                         |   |   |   | 0.25  | 1.24  |   | 0.31  | 0.49  |   |   | 0.98  | 0.24  |
| Uniform Delay, d1                 |   |   |   | 24.6  | 38.5  |   | 30.5  | 29.5  |   |   | 50.7  | 41.0  |
| Progression Factor                |   |   |   | 1.07  | 1.05  |   | 0.53  | 0.59  |   |   | 1.00  | 1.00  |
| Incremental Delay, d2             |   |   |   | 0.1   | 112.1   |   | 0.1   | 0.1   |   |   | 38.3  | 0.1   |
| Delay (s)                         |   |   |   | 26.4  | 152.7   |   | 16.2  | 17.5  |   |   | 89.0  | 41.1  |
| Level of Service                  |   |   |   | C   | F   |   | B   | B   |   |   | F   | D   |
| Approach Delay (s)                |   | 0.0   |   |   | 141.6   |   |   | 17.2  |   |   | 73.0  |   |
| Approach LOS                      |   | A   |   |   | F   |   |   | B   |   |   | E   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 108.6   |   |   |   |   |   |   |   |   | F   |
| HCM 2000 Volume to Capacity ratio |   |   | 1.11  |   |   |   |   |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 135.0   |   |   |   |   |   | 32.0  |   |   |   |
| Intersection Capacity Utilization |   |   | 113.2%  |   |   |   |   |   |   |   |   | H   |
| Analysis Period (min)             |   |   | 15  |   |   |   |   |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |   |   |   |   |   |   |



| Lane Group              | EBT   | NBT  | NBR  | SBL  | SBT  |
|-------------------------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 1810  | 202  | 201  | 386  | 130  |
| v/c Ratio               | 1.10  | 0.27 | 0.30 | 0.61 | 0.14 |
| Control Delay           | 102.5 | 27.5 | 12.3 | 14.3 | 3.7  |
| Queue Delay             | 0.2   | 0.0  | 0.0  | 0.7  | 1.4  |
| Total Delay             | 102.7 | 27.5 | 12.3 | 15.0 | 5.1  |
| Queue Length 50th (ft)  | ~669  | 116  | 46   | 71   | 11   |
| Queue Length 95th (ft)  | m#713 | 167  | 87   | m146 | m16  |
| Internal Link Dist (ft) | 53    | 253  |      |      | 175  |
| Turn Bay Length (ft)    |       |      | 125  | 70   |      |
| Base Capacity (vph)     | 1640  | 750  | 661  | 634  | 925  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 71   | 635  |
| Spillback Cap Reductn   | 102   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.18  | 0.27 | 0.30 | 0.69 | 0.45 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.






















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

17: Pack Saddle Pass & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

|                                   |  |    |  |  |  |  |  |  |    |    |  |  |                      |   |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|----------------------|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |                      |   |
| Lane Configurations               |   |    |   |   |   |   |  |  |   |   |  |   |                      |   |
| Traffic Volume (vph)              | 136   | 1399  | 57  | 0   | 0   | 0   | 0  | 174   | 167   | 336   | 117   | 0   |                      |   |
| Future Volume (vph)               | 136   | 1399  | 57  | 0   | 0   | 0   | 0  | 174   | 167   | 336   | 117   | 0   |                      |   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900   | 1900  | 1900  | 1900  | 1900  | 1900  |                      |   |
| Total Lost time (s)               |   | 6.0   |   |   |   |   |  | 4.5   | 4.5   | 5.5   | 4.5   |   |                      |   |
| Lane Util. Factor                 |   | 0.91  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |                      |   |
| Frbp, ped/bikes                   |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |                      |   |
| Flpb, ped/bikes                   |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |                      |   |
| Frt                               |   | 0.99  |   |   |   |   |  | 1.00  | 0.85  | 1.00  | 1.00  |   |                      |   |
| Flt Protected                     |   | 0.99  |   |   |   |   |  | 1.00  | 1.00  | 0.95  | 1.00  |   |                      |   |
| Satd. Flow (prot)                 |   | 4914  |   |   |   |   |  | 1845  | 1455  | 1702  | 1583  |   |                      |   |
| Flt Permitted                     |   | 0.99  |   |   |   |   |  | 1.00  | 1.00  | 0.55  | 1.00  |   |                      |   |
| Satd. Flow (perm)                 |   | 4914  |   |   |   |   |  | 1845  | 1455  | 992   | 1583  |   |                      |   |
| Peak-hour factor, PHF             | 0.54  | 0.94  | 0.81  | 0.92  | 0.92  | 0.92  | 0.92   | 0.86  | 0.83  | 0.87  | 0.90  | 0.92  |                      |   |
| Adj. Flow (vph)                   | 252   | 1488  | 70  | 0   | 0   | 0   | 0  | 202   | 201   | 386   | 130   | 0   |                      |   |
| RTOR Reduction (vph)              | 0   | 3   | 0   | 0   | 0   | 0   | 0  | 0   | 74  | 0   | 0   | 0   |                      |   |
| Lane Group Flow (vph)             | 0   | 1807  | 0   | 0   | 0   | 0   | 0  | 202   | 127   | 386   | 130   | 0   |                      |   |
| Confl. Peds. (#/hr)               |   |   | 3   |   |   |   |  |   | 1   | 1   |   |   |                      |   |
| Confl. Bikes (#/hr)               |   |   | 1   |   |   |   |  |   |   |   |   |   |                      |   |
| Heavy Vehicles (%)                | 6%  | 4%  | 0%  | 2%  | 2%  | 2%  | 2%   | 3%  | 11%   | 6%  | 20%   | 2%  |                      |   |
| Turn Type                         | Split   | NA  |   |   |   |   |  | NA  | Prot  | D.P+P   | NA  |   |                      |   |
| Protected Phases                  | 8 10  | 8 10  |   |   |   |   |  | 1 2 6   | 1 2 6   | 7   | 1 2 6 7   |   |                      |   |
| Permitted Phases                  |   |   |   |   |   |   |  |   |   | 1 2 6   |   |   |                      |   |
| Actuated Green, G (s)             |   | 45.0  |   |   |   |   |  | 55.5  | 55.5  | 74.0  | 78.5  |   |                      |   |
| Effective Green, g (s)            |   | 45.0  |   |   |   |   |  | 50.0  | 50.0  | 69.5  | 73.0  |   |                      |   |
| Actuated g/C Ratio                |   | 0.33  |   |   |   |   |  | 0.37  | 0.37  | 0.51  | 0.54  |   |                      |   |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   | 5.5   |   |   |                      |   |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   | 1.5   |   |   |                      |   |
| Lane Grp Cap (vph)                |   | 1638  |   |   |   |   |  | 683   | 538   | 607   | 855   |   |                      |   |
| v/s Ratio Prot                    |   | c0.37   |   |   |   |   |  | 0.11  | 0.09  | c0.09   | 0.08  |   |                      |   |
| v/s Ratio Perm                    |   |   |   |   |   |   |  |   |   | c0.24   |   |   |                      |   |
| v/c Ratio                         |   | 1.10  |   |   |   |   |  | 0.30  | 0.24  | 0.64  | 0.15  |   |                      |   |
| Uniform Delay, d1                 |   | 45.0  |   |   |   |   |  | 30.1  | 29.3  | 28.9  | 15.5  |   |                      |   |
| Progression Factor                |   | 1.14  |   |   |   |   |  | 1.00  | 1.00  | 0.56  | 0.28  |   |                      |   |
| Incremental Delay, d2             |   | 55.2  |   |   |   |   |  | 0.1   | 0.1   | 1.0   | 0.0   |   |                      |   |
| Delay (s)                         |   | 106.7   |   |   |   |   |  | 30.1  | 29.4  | 17.2  | 4.3   |   |                      |   |
| Level of Service                  |   | F   |   |   |   |   |  | C   | C   | B   | A   |   |                      |   |
| Approach Delay (s)                |   | 106.7   |   |   | 0.0   |   |  | 29.8  |   |   | 14.0  |   |                      |   |
| Approach LOS                      |   | F   |   |   | A   |   |  | C   |   |   | B   |   |                      |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |                      |   |
| HCM 2000 Control Delay            |   |   | 77.8  |   |   |   |  |   |   |   |   | HCM 2000 Level of Service   | E                    |   |
| HCM 2000 Volume to Capacity ratio |   |   | 0.91  |   |   |   |  |   |   |   |   |   |                      |   |
| Actuated Cycle Length (s)         |   |   | 135.0   |   |   |   |  |   |   | 32.0  |   |   | Sum of lost time (s) |   |
| Intersection Capacity Utilization |   |   | 113.2%  |   |   |   |  |   |   |   |   |   | ICU Level of Service | H |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |                      |   |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |                      |   |



| Lane Group              | WBL   | WBT   | WBR   | NBL   | NBT  | SBT   | SBR  |
|-------------------------|-------|-------|-------|-------|------|-------|------|
| Lane Group Flow (vph)   | 558   | 1175  | 880   | 689   | 1043 | 1034  | 221  |
| v/c Ratio               | 1.82  | 1.86  | 2.00  | 2.98  | 0.40 | 0.94  | 0.48 |
| Control Delay           | 413.8 | 424.1 | 483.3 | 917.5 | 1.1  | 67.0  | 17.4 |
| Queue Delay             | 0.3   | 0.2   | 0.0   | 0.0   | 0.3  | 44.7  | 0.0  |
| Total Delay             | 414.1 | 424.3 | 483.3 | 917.5 | 1.4  | 111.7 | 17.4 |
| Queue Length 50th (ft)  | ~778  | ~826  | ~1048 | ~976  | 14   | 317   | 43   |
| Queue Length 95th (ft)  | #980  | #970  | #1201 | #1092 | 15   | #372  | 120  |
| Internal Link Dist (ft) |       | 53    |       |       | 174  | 314   |      |
| Turn Bay Length (ft)    |       |       |       |       |      |       | 100  |
| Base Capacity (vph)     | 306   | 631   | 439   | 231   | 2584 | 1095  | 457  |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 841  | 0     | 0    |
| Spillback Cap Reductn   | 7     | 17    | 0     | 0     | 0    | 276   | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 1.87  | 1.91  | 2.00  | 2.98  | 0.60 | 1.26  | 0.48 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.




















Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

18: US 290 WBFR & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |                      |   |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|----------------------|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |                      |   |
| Lane Configurations               |   |   |   |  |  |  |  |  |   |   |  |  |                      |   |
| Traffic Volume (vph)              | 0   | 0   | 0   | 572   | 1011  | 748   | 586  | 960   | 0   | 0   | 889   | 197   |                      |   |
| Future Volume (vph)               | 0   | 0   | 0   | 572   | 1011  | 748   | 586  | 960   | 0   | 0   | 889   | 197   |                      |   |
| 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   | 5.0  | 5.0   |   |   | 5.0   | 5.0   |                      |   |
| Lane Util. Factor                 |   |   |   | 0.91  | 0.91  | 1.00  | 1.00   | 0.95  |   |   | 0.91  | 1.00  |                      |   |
| Frbp, ped/bikes                   |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  |   |   | 1.00  | 0.99  |                      |   |
| Flpb, ped/bikes                   |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  |   |   | 1.00  | 1.00  |                      |   |
| Frt                               |   |   |   | 1.00  | 1.00  | 0.85  | 1.00   | 1.00  |   |   | 1.00  | 0.85  |                      |   |
| Flt Protected                     |   |   |   | 0.95  | 1.00  | 1.00  | 0.95   | 1.00  |   |   | 1.00  | 1.00  |                      |   |
| Satd. Flow (prot)                 |   |   |   | 1595  | 3285  | 1599  | 1769   | 3574  |   |   | 5085  | 1545  |                      |   |
| Flt Permitted                     |   |   |   | 0.95  | 1.00  | 1.00  | 0.26   | 1.00  |   |   | 1.00  | 1.00  |                      |   |
| Satd. Flow (perm)                 |   |   |   | 1595  | 3285  | 1599  | 493  | 3574  |   |   | 5085  | 1545  |                      |   |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.87  | 0.94  | 0.85  | 0.85   | 0.92  | 0.92  | 0.92  | 0.86  | 0.89  |                      |   |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 657   | 1076  | 880   | 689  | 1043  | 0   | 0   | 1034  | 221   |                      |   |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 132   | 0  | 0   | 0   | 0   | 0   | 125   |                      |   |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 558   | 1175  | 748   | 689  | 1043  | 0   | 0   | 1034  | 96  |                      |   |
| Confl. Peds. (#/hr)               |   |   |   |   |   |   | 1  |   |   |   |   | 1   |                      |   |
| Confl. Bikes (#/hr)               |   |   |   |   |   |   |  |   |   |   |   | 1   |                      |   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 3%  | 5%  | 1%  | 2%   | 1%  | 2%  | 2%  | 2%  | 3%  |                      |   |
| Turn Type                         |   |   |   | Perm  | NA  | Perm  | custom   | NA  |   |   | NA  | Perm  |                      |   |
| Protected Phases                  |   |   |   |   | 7 8   |   |  | 1 2 6 10  |   |   | 1 6   |   |                      |   |
| Permitted Phases                  |   |   |   | 7 8   |   | 7 8   | 2 10   |   |   |   |   | 1 6   |                      |   |
| Actuated Green, G (s)             |   |   |   | 25.0  | 25.0  | 25.0  | 61.0   | 94.0  |   |   | 28.0  | 28.0  |                      |   |
| Effective Green, g (s)            |   |   |   | 25.0  | 25.0  | 25.0  | 61.0   | 94.0  |   |   | 28.0  | 28.0  |                      |   |
| Actuated g/C Ratio                |   |   |   | 0.19  | 0.19  | 0.19  | 0.47   | 0.72  |   |   | 0.22  | 0.22  |                      |   |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   |   |   |                      |   |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   |   |   |                      |   |
| Lane Grp Cap (vph)                |   |   |   | 306   | 631   | 307   | 231  | 2584  |   |   | 1095  | 332   |                      |   |
| v/s Ratio Prot                    |   |   |   |   |   |   |  | 0.29  |   |   | c0.20   |   |                      |   |
| v/s Ratio Perm                    |   |   |   | 0.35  | 0.36  | c0.47   | c1.40  |   |   |   |   | 0.06  |                      |   |
| v/c Ratio                         |   |   |   | 1.82  | 1.86  | 2.43  | 2.98   | 0.40  |   |   | 0.94  | 0.29  |                      |   |
| Uniform Delay, d1                 |   |   |   | 52.5  | 52.5  | 52.5  | 34.5   | 7.0   |   |   | 50.2  | 42.7  |                      |   |
| Progression Factor                |   |   |   | 1.00  | 1.00  | 1.00  | 0.66   | 0.10  |   |   | 1.00  | 1.00  |                      |   |
| Incremental Delay, d2             |   |   |   | 383.2   | 394.0   | 655.5   | 901.6  | 0.0   |   |   | 15.4  | 0.2   |                      |   |
| Delay (s)                         |   |   |   | 435.7   | 446.5   | 708.0   | 924.4  | 0.7   |   |   | 65.6  | 42.9  |                      |   |
| Level of Service                  |   |   |   | F   | F   | F   | F  | A   |   |   | E   | D   |                      |   |
| Approach Delay (s)                |   | 0.0   |   |   | 532.3   |   |  | 368.2   |   |   | 61.6  |   |                      |   |
| Approach LOS                      |   | A   |   |   | F   |   |  | F   |   |   | E   |   |                      |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |                      |   |
| HCM 2000 Control Delay            |   |   | 376.0   |   |   |   |  |   |   |   |   | HCM 2000 Level of Service   | F                    |   |
| HCM 2000 Volume to Capacity ratio |   |   | 2.74  |   |   |   |  |   |   |   |   |   |                      |   |
| Actuated Cycle Length (s)         |   |   | 130.0   |   |   |   |  |   |   |   | 32.0  |   |                      |   |
| Intersection Capacity Utilization |   |   | 132.8%  |   |   |   |  |   |   |   |   |   | ICU Level of Service | H |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |                      |   |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |                      |   |





| Lane Group              | EBL  | EBT  | EBR  | NBT  | NBR   | SBL   | SBT  |
|-------------------------|------|------|------|------|-------|-------|------|
| Lane Group Flow (vph)   | 276  | 517  | 236  | 1318 | 842   | 785   | 932  |
| v/c Ratio               | 0.77 | 0.74 | 0.51 | 0.62 | 1.13  | 1.68  | 0.37 |
| Control Delay           | 64.8 | 56.0 | 13.9 | 31.4 | 102.8 | 332.7 | 7.8  |
| Queue Delay             | 3.3  | 0.0  | 0.0  | 0.7  | 0.0   | 3.5   | 5.0  |
| Total Delay             | 68.1 | 56.0 | 13.9 | 32.1 | 102.8 | 336.3 | 12.9 |
| Queue Length 50th (ft)  | 222  | 217  | 27   | 315  | ~737  | ~954  | 103  |
| Queue Length 95th (ft)  | #342 | 277  | 106  | 366  | #912  | m#766 | m88  |
| Internal Link Dist (ft) |      | 62   |      | 300  |       |       | 174  |
| Turn Bay Length (ft)    |      |      |      |      | 100   |       |      |
| Base Capacity (vph)     | 357  | 701  | 465  | 2133 | 748   | 467   | 2507 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0     | 140   | 1491 |
| Spillback Cap Reductn   | 31   | 0    | 0    | 430  | 0     | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0     | 0     | 0    |
| Reduced v/c Ratio       | 0.85 | 0.74 | 0.51 | 0.77 | 1.13  | 2.40  | 0.92 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

19: Menchaca Road & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM

| Movement                          | EBL  | EBT  | EBR    | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL   | SBT     | SBR                       |      |
|-----------------------------------|------|------|--------|------|------|------|------|------|-------|-------|---------|---------------------------|------|
| Lane Configurations               |      |      |        |      |      |      |      |      |       |       |         |                           |      |
| Traffic Volume (vph)              | 246  | 460  | 229    | 0    | 0    | 0    | 0    | 1252 | 724   | 636   | 913     | 0                         |      |
| Future Volume (vph)               | 246  | 460  | 229    | 0    | 0    | 0    | 0    | 1252 | 724   | 636   | 913     | 0                         |      |
| 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    |      |      |      |      | 5.0  | 5.0   | 5.0   | 5.0     |                           |      |
| Lane Util. Factor                 | 1.00 | 0.95 | 1.00   |      |      |      |      | 0.91 | 1.00  | 1.00  | 0.95    |                           |      |
| Frpb, ped/bikes                   | 1.00 | 1.00 | 0.99   |      |      |      |      | 1.00 | 0.99  | 1.00  | 1.00    |                           |      |
| Flpb, ped/bikes                   | 1.00 | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 1.00  | 1.00    |                           |      |
| Frt                               | 1.00 | 1.00 | 0.85   |      |      |      |      | 1.00 | 0.85  | 1.00  | 1.00    |                           |      |
| Flt Protected                     | 0.95 | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.95  | 1.00    |                           |      |
| Satd. Flow (prot)                 | 1787 | 3505 | 1533   |      |      |      |      | 5136 | 1579  | 1787  | 3505    |                           |      |
| Flt Permitted                     | 0.95 | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.95  | 1.00    |                           |      |
| Satd. Flow (perm)                 | 1787 | 3505 | 1533   |      |      |      |      | 5136 | 1579  | 1787  | 3505    |                           |      |
| Peak-hour factor, PHF             | 0.89 | 0.89 | 0.97   | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.86  | 0.81  | 0.98    | 0.92                      |      |
| Adj. Flow (vph)                   | 276  | 517  | 236    | 0    | 0    | 0    | 0    | 1318 | 842   | 785   | 932     | 0                         |      |
| RTOR Reduction (vph)              | 0    | 0    | 157    | 0    | 0    | 0    | 0    | 0    | 93    | 0     | 0       | 0                         |      |
| Lane Group Flow (vph)             | 276  | 517  | 79     | 0    | 0    | 0    | 0    | 1318 | 749   | 785   | 932     | 0                         |      |
| Confl. Peds. (#/hr)               |      |      |        |      |      |      |      |      | 1     | 1     |         |                           |      |
| Confl. Bikes (#/hr)               |      |      | 1      |      |      |      |      |      |       |       |         |                           |      |
| Heavy Vehicles (%)                | 1%   | 3%   | 4%     | 2%   | 2%   | 2%   | 2%   | 1%   | 1%    | 1%    | 3%      | 2%                        |      |
| Turn Type                         | Perm | NA   | Perm   |      |      |      |      | NA   | Perm  | Prot  | NA      |                           |      |
| Protected Phases                  |      | 8 10 |        |      |      |      |      | 1 2  |       | 6 7   | 1 2 6 7 |                           |      |
| Permitted Phases                  | 8 10 |      | 8 10   |      |      |      |      |      | 1 2   |       |         |                           |      |
| Actuated Green, G (s)             | 27.0 | 27.0 | 27.0   |      |      |      |      | 54.0 | 54.0  | 33.0  | 92.0    |                           |      |
| Effective Green, g (s)            | 27.0 | 27.0 | 27.0   |      |      |      |      | 54.0 | 54.0  | 33.0  | 92.0    |                           |      |
| Actuated g/C Ratio                | 0.21 | 0.21 | 0.21   |      |      |      |      | 0.42 | 0.42  | 0.25  | 0.71    |                           |      |
| Clearance Time (s)                |      |      |        |      |      |      |      |      |       |       |         |                           |      |
| Vehicle Extension (s)             |      |      |        |      |      |      |      |      |       |       |         |                           |      |
| Lane Grp Cap (vph)                | 371  | 727  | 318    |      |      |      |      | 2133 | 655   | 453   | 2480    |                           |      |
| v/s Ratio Prot                    |      | 0.15 |        |      |      |      |      | 0.26 |       | 0.44  | 0.27    |                           |      |
| v/s Ratio Perm                    | 0.15 |      | 0.05   |      |      |      |      |      | 0.47  |       |         |                           |      |
| v/c Ratio                         | 0.74 | 0.71 | 0.25   |      |      |      |      | 0.62 | 1.14  | 1.73  | 0.38    |                           |      |
| Uniform Delay, d1                 | 48.3 | 47.9 | 43.0   |      |      |      |      | 29.9 | 38.0  | 48.5  | 7.6     |                           |      |
| Progression Factor                | 1.00 | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.65  | 1.07    |                           |      |
| Incremental Delay, d2             | 6.9  | 2.7  | 0.1    |      |      |      |      | 0.4  | 81.9  | 330.6 | 0.0     |                           |      |
| Delay (s)                         | 55.2 | 50.6 | 43.2   |      |      |      |      | 30.3 | 119.9 | 362.0 | 8.1     |                           |      |
| Level of Service                  | E    | D    | D      |      |      |      |      | C    | F     | F     | A       |                           |      |
| Approach Delay (s)                |      | 50.1 |        |      | 0.0  |      |      | 65.2 |       |       | 169.9   |                           |      |
| Approach LOS                      |      | D    |        |      | A    |      |      | E    |       |       | F       |                           |      |
| <b>Intersection Summary</b>       |      |      |        |      |      |      |      |      |       |       |         |                           |      |
| HCM 2000 Control Delay            |      |      | 98.7   |      |      |      |      |      |       |       |         | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |      |      | 1.42   |      |      |      |      |      |       |       |         |                           |      |
| Actuated Cycle Length (s)         |      |      | 130.0  |      |      |      |      |      |       |       |         | Sum of lost time (s)      | 32.0 |
| Intersection Capacity Utilization |      |      | 132.8% |      |      |      |      |      |       |       |         | ICU Level of Service      | H    |
| Analysis Period (min)             |      |      | 15     |      |      |      |      |      |       |       |         |                           |      |
| c Critical Lane Group             |      |      |        |      |      |      |      |      |       |       |         |                           |      |

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 15.8 |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      | ↗    | ↘    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 14   | 172  | 167  | 15   | 154  | 4    | 163  | 11   | 111  | 2    | 21   | 32   |
| Future Vol, veh/h        | 14   | 172  | 167  | 15   | 154  | 4    | 163  | 11   | 111  | 2    | 21   | 32   |
| Conflicting Peds, #/hr   | 15   | 0    | 4    | 4    | 0    | 15   | 9    | 0    | 15   | 15   | 0    | 9    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 50   | 66   | 74   | 95   | 58   | 60   | 76   | 75   | 60   | 60   | 60   | 75   |
| Heavy Vehicles, %        | 0    | 0    | 6    | 0    | 0    | 0    | 11   | 17   | 2    | 0    | 0    | 0    |
| Mvmt Flow                | 28   | 261  | 226  | 16   | 266  | 7    | 214  | 15   | 185  | 3    | 35   | 43   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |       | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-----|-----|
| Conflicting Flow All | 288    | 0 | 0 | 491    | 0 | 0 | 784    | 754   | 393   | 862    | 864 | 294 |
| Stage 1              | -      | - | - | -      | - | - | 434    | 434   | -     | 317    | 317 | -   |
| Stage 2              | -      | - | - | -      | - | - | 350    | 320   | -     | 545    | 547 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.21   | 6.67  | 6.22  | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.21   | 5.67  | -     | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.21   | 5.67  | -     | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.599  | 4.153 | 3.318 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1286   | - | - | 1083   | - | - | 300    | 321   | 656   | 277    | 294 | 750 |
| Stage 1              | -      | - | - | -      | - | - | 583    | 556   | -     | 698    | 658 | -   |
| Stage 2              | -      | - | - | -      | - | - | 648    | 626   | -     | 526    | 521 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -     | -     | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1268   | - | - | 1079   | - | - | 243    | 300   | 644   | 178    | 275 | 733 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 243    | 300   | -     | 178    | 275 | -   |
| Stage 1              | -      | - | - | -      | - | - | 563    | 537   | -     | 667    | 638 | -   |
| Stage 2              | -      | - | - | -      | - | - | 562    | 607   | -     | 348    | 503 | -   |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 0.4 |  |  | 0.5 |  |  | 45.4 |  |  | 16.4 |  |  |
| HCM LOS              |     |  |  |     |  |  | E    |  |  | C    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 243   | 594   | 1268  | -   | -   | 1079  | -   | -   | 397   |
| HCM Lane V/C Ratio    | 0.883 | 0.336 | 0.022 | -   | -   | 0.015 | -   | -   | 0.204 |
| HCM Control Delay (s) | 74.5  | 14.1  | 7.9   | 0   | -   | 8.4   | 0   | -   | 16.4  |
| HCM Lane LOS          | F     | B     | A     | A   | -   | A     | A   | -   | C     |
| HCM 95th %tile Q(veh) | 7.4   | 1.5   | 0.1   | -   | -   | 0     | -   | -   | 0.8   |

21: S Lamar Blvd & Driveway A  
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted AM



| Movement                          | EBL   | EBR  | NBL  | NBT                  | SBT  | SBR  |      |      |      |  |  |
|-----------------------------------|-------|------|------|----------------------|------|------|------|------|------|--|--|
| Lane Configurations               |       |      |      |                      |      |      |      |      |      |  |  |
| Traffic Volume (veh/h)            | 0     | 0    | 0    | 2151                 | 1321 | 180  |      |      |      |  |  |
| Future Volume (Veh/h)             | 0     | 0    | 0    | 2151                 | 1321 | 180  |      |      |      |  |  |
| Sign Control                      | Stop  |      |      | Free                 |      | Free |      |      |      |  |  |
| Grade                             | 0%    |      |      | 0%                   |      | 0%   |      |      |      |  |  |
| Peak Hour Factor                  | 0.92  | 0.92 | 0.92 | 0.92                 | 0.92 | 0.92 |      |      |      |  |  |
| Hourly flow rate (vph)            | 0     | 0    | 0    | 2338                 | 1436 | 196  |      |      |      |  |  |
| <b>Pedestrians</b>                |       |      |      |                      |      |      |      |      |      |  |  |
| Lane Width (ft)                   |       |      |      |                      |      |      |      |      |      |  |  |
| Walking Speed (ft/s)              |       |      |      |                      |      |      |      |      |      |  |  |
| Percent Blockage                  |       |      |      |                      |      |      |      |      |      |  |  |
| Right turn flare (veh)            |       |      |      |                      |      |      |      |      |      |  |  |
| Median type                       |       |      |      | None                 | None |      |      |      |      |  |  |
| Median storage (veh)              |       |      |      |                      |      |      |      |      |      |  |  |
| Upstream signal (ft)              |       |      |      | 408                  | 941  |      |      |      |      |  |  |
| pX, platoon unblocked             | 0.66  |      |      |                      |      |      |      |      |      |  |  |
| vC, conflicting volume            | 2118  | 457  | 1632 |                      |      |      |      |      |      |  |  |
| vC1, stage 1 conf vol             |       |      |      |                      |      |      |      |      |      |  |  |
| vC2, stage 2 conf vol             |       |      |      |                      |      |      |      |      |      |  |  |
| vCu, unblocked vol                | 101   | 457  | 1632 |                      |      |      |      |      |      |  |  |
| tC, single (s)                    | 6.8   | 6.9  | 4.1  |                      |      |      |      |      |      |  |  |
| tC, 2 stage (s)                   |       |      |      |                      |      |      |      |      |      |  |  |
| tF (s)                            | 3.5   | 3.3  | 2.2  |                      |      |      |      |      |      |  |  |
| p0 queue free %                   | 100   | 100  | 100  |                      |      |      |      |      |      |  |  |
| cM capacity (veh/h)               | 583   | 551  | 394  |                      |      |      |      |      |      |  |  |
| Direction, Lane #                 | EB 1  | NB 1 | NB 2 | NB 3                 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |  |  |
| Volume Total                      | 0     | 584  | 584  | 584                  | 584  | 410  | 410  | 410  | 401  |  |  |
| Volume Left                       | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |  |
| Volume Right                      | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 196  |  |  |
| cSH                               | 1700  | 1700 | 1700 | 1700                 | 1700 | 1700 | 1700 | 1700 | 1700 |  |  |
| Volume to Capacity                | 0.00  | 0.34 | 0.34 | 0.34                 | 0.34 | 0.24 | 0.24 | 0.24 | 0.24 |  |  |
| Queue Length 95th (ft)            | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |  |
| Control Delay (s)                 | 0.0   | 0.0  | 0.0  | 0.0                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |  |
| Lane LOS                          | A     |      |      |                      |      |      |      |      |      |  |  |
| Approach Delay (s)                | 0.0   | 0.0  |      |                      |      |      | 0.0  |      |      |  |  |
| Approach LOS                      | A     |      |      |                      |      |      |      |      |      |  |  |
| <b>Intersection Summary</b>       |       |      |      |                      |      |      |      |      |      |  |  |
| Average Delay                     | 0.0   |      |      |                      |      |      |      |      |      |  |  |
| Intersection Capacity Utilization | 34.5% |      |      | ICU Level of Service |      |      |      | A    |      |  |  |
| Analysis Period (min)             | 15    |      |      |                      |      |      |      |      |      |  |  |

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.6  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    |      |      | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 103  | 0    | 0    | 953  | 36   |
| Future Vol, veh/h        | 0    | 103  | 0    | 0    | 953  | 36   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | -    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 112  | 0    | 0    | 1036 | 39   |

| Major/Minor          | Minor2 |      | Major2 |   |
|----------------------|--------|------|--------|---|
| Conflicting Flow All | -      | 538  | -      | 0 |
| Stage 1              | -      | -    | -      | - |
| Stage 2              | -      | -    | -      | - |
| Critical Hdwy        | -      | 7.14 | -      | - |
| Critical Hdwy Stg 1  | -      | -    | -      | - |
| Critical Hdwy Stg 2  | -      | -    | -      | - |
| Follow-up Hdwy       | -      | 3.92 | -      | - |
| Pot Cap-1 Maneuver   | 0      | 417  | -      | - |
| Stage 1              | 0      | -    | -      | - |
| Stage 2              | 0      | -    | -      | - |
| Platoon blocked, %   |        |      | -      | - |
| Mov Cap-1 Maneuver   | -      | 417  | -      | - |
| Mov Cap-2 Maneuver   | -      | -    | -      | - |
| Stage 1              | -      | -    | -      | - |
| Stage 2              | -      | -    | -      | - |

| Approach             | EB   | SB |
|----------------------|------|----|
| HCM Control Delay, s | 16.8 | 0  |
| HCM LOS              | C    |    |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-----|
| Capacity (veh/h)      | 417   | -   | -   |
| HCM Lane V/C Ratio    | 0.268 | -   | -   |
| HCM Control Delay (s) | 16.8  | -   | -   |
| HCM Lane LOS          | C     | -   | -   |
| HCM 95th %tile Q(veh) | 1.1   | -   | -   |

| Intersection             |      |       |       |      |      |      |
|--------------------------|------|-------|-------|------|------|------|
| Int Delay, s/veh         | 2.2  |       |       |      |      |      |
| Movement                 | WBL  | WBR   | NBT   | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↑ ↑ ↑ | ↑ ↑ ↑ |      |      |      |
| Traffic Vol, veh/h       | 0    | 90    | 1921  | 196  | 0    | 0    |
| Future Vol, veh/h        | 0    | 90    | 1921  | 196  | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0     | 0     | 0    | 0    | 0    |
| Sign Control             | Stop | Stop  | Free  | Free | Free | Free |
| RT Channelized           | -    | None  | -     | None | -    | None |
| Storage Length           | -    | 0     | -     | -    | -    | -    |
| Veh in Median Storage, # | 0    | -     | 0     | -    | -    | -    |
| Grade, %                 | 0    | -     | 0     | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92    | 92    | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2     | 2     | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 98    | 2088  | 213  | 0    | 0    |

| Major/Minor          | Minor1 | Major1 |   |
|----------------------|--------|--------|---|
| Conflicting Flow All | -      | 1151   | 0 |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |
| Critical Hdwy        | -      | 7.14   | - |
| Critical Hdwy Stg 1  | -      | -      | - |
| Critical Hdwy Stg 2  | -      | -      | - |
| Follow-up Hdwy       | -      | 3.92   | - |
| Pot Cap-1 Maneuver   | 0      | 164    | - |
| Stage 1              | 0      | -      | - |
| Stage 2              | 0      | -      | - |
| Platoon blocked, %   |        |        | - |
| Mov Cap-1 Maneuver   | -      | 164    | - |
| Mov Cap-2 Maneuver   | -      | -      | - |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |

| Approach             | WB   | NB |
|----------------------|------|----|
| HCM Control Delay, s | 55.1 | 0  |
| HCM LOS              | F    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 |
|-----------------------|-----|----------|
| Capacity (veh/h)      | -   | 164      |
| HCM Lane V/C Ratio    | -   | 0.597    |
| HCM Control Delay (s) | -   | 55.1     |
| HCM Lane LOS          | -   | F        |
| HCM 95th %tile Q(veh) | -   | 3.2      |



| Lane Group              | WBL  | WBR  | NBT    | NBR  | SBL  | SBT   |
|-------------------------|------|------|--------|------|------|-------|
| Lane Group Flow (vph)   | 628  | 526  | 2144   | 841  | 501  | 2480  |
| v/c Ratio               | 0.71 | 0.69 | 1.33   | 0.92 | 0.81 | 1.04  |
| Control Delay           | 50.4 | 33.4 | 178.4  | 21.2 | 64.9 | 53.3  |
| Queue Delay             | 0.0  | 0.0  | 0.0    | 0.0  | 0.0  | 0.0   |
| Total Delay             | 50.4 | 33.4 | 178.4  | 21.2 | 64.9 | 53.3  |
| Queue Length 50th (ft)  | 258  | 351  | ~1278  | 259  | 220  | ~1234 |
| Queue Length 95th (ft)  | 308  | 489  | m#1305 | m169 | 254  | #1362 |
| Internal Link Dist (ft) | 497  |      | 121    |      |      | 322   |
| Turn Bay Length (ft)    |      | 125  |        |      | 150  |       |
| Base Capacity (vph)     | 890  | 766  | 1614   | 915  | 616  | 2382  |
| Starvation Cap Reductn  | 0    | 0    | 0      | 0    | 0    | 0     |
| Spillback Cap Reductn   | 0    | 0    | 0      | 0    | 0    | 0     |
| Storage Cap Reductn     | 0    | 0    | 0      | 0    | 0    | 0     |
| Reduced v/c Ratio       | 0.71 | 0.69 | 1.33   | 0.92 | 0.81 | 1.04  |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

1: S Lamar Blvd & W Oltorf Street  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM



| Movement                          | WBL  | WBR   | NBT   | NBR  | SBL                       | SBT   |
|-----------------------------------|------|-------|-------|------|---------------------------|-------|
| Lane Configurations               | ↖↗   | ↖     | ↕↕    | ↖    | ↖↗                        | ↕↕    |
| Traffic Volume (vph)              | 540  | 494   | 2015  | 715  | 411                       | 2306  |
| Future Volume (vph)               | 540  | 494   | 2015  | 715  | 411                       | 2306  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                      | 1900  |
| Total Lost time (s)               | 5.0  | 5.0   | 5.0   | 5.0  | 5.0                       | 5.0   |
| Lane Util. Factor                 | 0.97 | 1.00  | 0.95  | 1.00 | 0.97                      | 0.95  |
| Frpb, ped/bikes                   | 1.00 | 1.00  | 1.00  | 0.97 | 1.00                      | 1.00  |
| Flpb, ped/bikes                   | 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  |
| Flt Protected                     | 0.95 | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (prot)                 | 3433 | 1615  | 3574  | 1543 | 3467                      | 3574  |
| Flt Permitted                     | 0.95 | 1.00  | 1.00  | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (perm)                 | 3433 | 1615  | 3574  | 1543 | 3467                      | 3574  |
| Peak-hour factor, PHF             | 0.86 | 0.94  | 0.94  | 0.85 | 0.82                      | 0.93  |
| Adj. Flow (vph)                   | 628  | 526   | 2144  | 841  | 501                       | 2480  |
| RTOR Reduction (vph)              | 0    | 1     | 0     | 219  | 0                         | 0     |
| Lane Group Flow (vph)             | 628  | 525   | 2144  | 622  | 501                       | 2480  |
| Confl. Peds. (#/hr)               |      | 10    |       | 6    | 6                         |       |
| Confl. Bikes (#/hr)               |      |       |       | 5    |                           |       |
| Heavy Vehicles (%)                | 2%   | 0%    | 1%    | 2%   | 1%                        | 1%    |
| Turn Type                         | Prot | pt+ov | NA    | Perm | Prot                      | NA    |
| Protected Phases                  | 4    | 1 4   | 2     |      | 1                         | 6     |
| Permitted Phases                  |      | 4     |       | 2    |                           |       |
| Actuated Green, G (s)             | 35.0 | 64.0  | 61.0  | 61.0 | 24.0                      | 90.0  |
| Effective Green, g (s)            | 35.0 | 64.0  | 61.0  | 61.0 | 24.0                      | 90.0  |
| Actuated g/C Ratio                | 0.26 | 0.47  | 0.45  | 0.45 | 0.18                      | 0.67  |
| Clearance Time (s)                | 5.0  |       | 5.0   | 5.0  | 5.0                       | 5.0   |
| Vehicle Extension (s)             | 1.0  |       | 1.0   | 1.0  | 1.0                       | 1.0   |
| Lane Grp Cap (vph)                | 890  | 765   | 1614  | 697  | 616                       | 2382  |
| v/s Ratio Prot                    | 0.18 | c0.33 | c0.60 |      | 0.14                      | c0.69 |
| v/s Ratio Perm                    |      |       |       | 0.40 |                           |       |
| v/c Ratio                         | 0.71 | 0.69  | 1.33  | 0.89 | 0.81                      | 1.04  |
| Uniform Delay, d1                 | 45.3 | 27.7  | 37.0  | 34.0 | 53.3                      | 22.5  |
| Progression Factor                | 1.00 | 1.00  | 0.83  | 0.67 | 1.00                      | 1.00  |
| Incremental Delay, d2             | 4.7  | 5.0   | 149.8 | 8.5  | 11.2                      | 30.2  |
| Delay (s)                         | 50.0 | 32.7  | 180.5 | 31.1 | 64.6                      | 52.7  |
| Level of Service                  | D    | C     | F     | C    | E                         | D     |
| Approach Delay (s)                | 42.1 |       | 138.4 |      |                           | 54.7  |
| Approach LOS                      | D    |       | F     |      |                           | D     |
| <b>Intersection Summary</b>       |      |       |       |      |                           |       |
| HCM 2000 Control Delay            |      |       | 87.8  |      | HCM 2000 Level of Service | F     |
| HCM 2000 Volume to Capacity ratio |      |       | 1.12  |      |                           |       |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      | 15.0  |
| Intersection Capacity Utilization |      |       | 95.7% |      | ICU Level of Service      | F     |
| Analysis Period (min)             |      |       | 15    |      |                           |       |
| c Critical Lane Group             |      |       |       |      |                           |       |





| Lane Group              | EBL  | EBT  | EBR  | WBT  | NBL   | NBT    | NBR  | SBL   | SBT    |
|-------------------------|------|------|------|------|-------|--------|------|-------|--------|
| Lane Group Flow (vph)   | 154  | 104  | 288  | 143  | 260   | 2473   | 200  | 56    | 2603   |
| v/c Ratio               | 0.68 | 0.24 | 0.72 | 0.72 | 1.17  | 1.00   | 0.18 | 1.00  | 1.31   |
| Control Delay           | 59.0 | 43.2 | 46.7 | 66.5 | 112.3 | 29.1   | 6.7  | 100.9 | 168.6  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0    | 0.0  | 0.0   | 0.0    |
| Total Delay             | 59.0 | 43.2 | 46.7 | 66.5 | 112.3 | 29.1   | 6.7  | 100.9 | 168.6  |
| Queue Length 50th (ft)  | 115  | 76   | 181  | 98   | ~218  | 972    | 44   | 43    | ~1541  |
| Queue Length 95th (ft)  | 142  | 61   | 253  | 130  | m#281 | m#1186 | m49  | m#56  | m#1487 |
| Internal Link Dist (ft) |      | 215  |      | 74   |       | 201    |      |       | 588    |
| Turn Bay Length (ft)    | 75   |      | 50   |      | 50    |        | 125  | 50    |        |
| Base Capacity (vph)     | 228  | 534  | 483  | 295  | 223   | 2480   | 1082 | 56    | 1992   |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0     | 0      | 0    | 0     | 0      |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0     | 0      | 0    | 0     | 0      |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0     | 0      | 0    | 0     | 0      |
| Reduced v/c Ratio       | 0.68 | 0.19 | 0.60 | 0.48 | 1.17  | 1.00   | 0.18 | 1.00  | 1.31   |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

2: S Lamar Blvd & Bluebonnet Lane  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

| Movement                          | EBL   | EBT  | EBR    | WBL  | WBT  | WBR  | NBL   | NBT   | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|------|--------|------|------|------|-------|-------|------|------|-------|------|
| Lane Configurations               |       |      |        |      |      |      |       |       |      |      |       |      |
| Traffic Volume (vph)              | 117   | 49   | 248    | 0    | 56   | 62   | 218   | 2226  | 152  | 40   | 2496  | 2    |
| Future Volume (vph)               | 117   | 49   | 248    | 0    | 56   | 62   | 218   | 2226  | 152  | 40   | 2496  | 2    |
| 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  |      | 5.0   | 5.0   | 5.0  | 5.0  | 5.0   |      |
| Lane Util. Factor                 | 1.00  | 1.00 | 1.00   |      | 1.00 |      | 1.00  | 0.95  | 1.00 | 1.00 | 0.95  |      |
| Frpb, ped/bikes                   | 1.00  | 1.00 | 0.96   |      | 0.97 |      | 1.00  | 1.00  | 0.95 | 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  |      |
| Frt                               | 1.00  | 1.00 | 0.85   |      | 0.94 |      | 1.00  | 1.00  | 0.85 | 1.00 | 1.00  |      |
| Flt Protected                     | 0.95  | 1.00 | 1.00   |      | 1.00 |      | 0.95  | 1.00  | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 1799  | 1900 | 1540   |      | 1729 |      | 1787  | 3574  | 1529 | 1805 | 3539  |      |
| Flt Permitted                     | 0.30  | 1.00 | 1.00   |      | 1.00 |      | 0.05  | 1.00  | 1.00 | 0.05 | 1.00  |      |
| Satd. Flow (perm)                 | 575   | 1900 | 1540   |      | 1729 |      | 93    | 3574  | 1529 | 100  | 3539  |      |
| Peak-hour factor, PHF             | 0.76  | 0.47 | 0.86   | 0.69 | 0.75 | 0.91 | 0.84  | 0.90  | 0.76 | 0.72 | 0.96  | 0.60 |
| Adj. Flow (vph)                   | 154   | 104  | 288    | 0    | 75   | 68   | 260   | 2473  | 200  | 56   | 2600  | 3    |
| RTOR Reduction (vph)              | 0     | 0    | 54     | 0    | 26   | 0    | 0     | 0     | 22   | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 154   | 104  | 234    | 0    | 117  | 0    | 260   | 2473  | 178  | 56   | 2603  | 0    |
| Confl. Peds. (#/hr)               | 12    |      | 12     | 12   |      | 12   | 8     |       | 9    | 9    |       | 8    |
| Confl. Bikes (#/hr)               |       |      | 6      |      |      | 5    |       |       | 12   |      |       | 4    |
| Heavy Vehicles (%)                | 0%    | 0%   | 1%     | 0%   | 0%   | 0%   | 1%    | 1%    | 0%   | 0%   | 2%    | 0%   |
| Turn Type                         | pm+pt | NA   | Perm   |      | NA   |      | pm+pt | NA    | Perm | Perm | NA    |      |
| Protected Phases                  | 7     | 4    |        |      | 8    |      | 5     | 2     |      |      | 6     |      |
| Permitted Phases                  | 4     |      | 4      |      |      |      | 2     |       | 2    | 6    |       |      |
| Actuated Green, G (s)             | 30.3  | 30.3 | 30.3   |      | 13.3 |      | 93.7  | 93.7  | 93.7 | 76.0 | 76.0  |      |
| Effective Green, g (s)            | 30.3  | 30.3 | 30.3   |      | 13.3 |      | 93.7  | 93.7  | 93.7 | 76.0 | 76.0  |      |
| Actuated g/C Ratio                | 0.22  | 0.22 | 0.22   |      | 0.10 |      | 0.69  | 0.69  | 0.69 | 0.56 | 0.56  |      |
| Clearance Time (s)                | 6.0   | 6.0  | 6.0    |      | 6.0  |      | 5.0   | 5.0   | 5.0  | 5.0  | 5.0   |      |
| Vehicle Extension (s)             | 2.0   | 2.0  | 2.0    |      | 2.0  |      | 1.0   | 1.0   | 1.0  | 1.0  | 1.0   |      |
| Lane Grp Cap (vph)                | 228   | 426  | 345    |      | 170  |      | 223   | 2480  | 1061 | 56   | 1992  |      |
| v/s Ratio Prot                    | 0.05  | 0.05 |        |      | 0.07 |      | 0.11  | c0.69 |      |      | c0.74 |      |
| v/s Ratio Perm                    | 0.10  |      | c0.15  |      |      |      | 0.70  |       | 0.12 | 0.56 |       |      |
| v/c Ratio                         | 0.68  | 0.24 | 0.68   |      | 0.69 |      | 1.17  | 1.00  | 0.17 | 1.00 | 1.31  |      |
| Uniform Delay, d1                 | 44.9  | 43.0 | 47.9   |      | 58.8 |      | 48.7  | 20.5  | 7.1  | 29.5 | 29.5  |      |
| Progression Factor                | 1.00  | 1.00 | 1.00   |      | 1.00 |      | 0.85  | 1.17  | 1.31 | 1.11 | 1.08  |      |
| Incremental Delay, d2             | 6.1   | 0.1  | 4.2    |      | 8.8  |      | 79.5  | 4.8   | 0.0  | 63.4 | 139.1 |      |
| Delay (s)                         | 51.0  | 43.1 | 52.1   |      | 67.7 |      | 120.9 | 28.9  | 9.4  | 96.2 | 171.0 |      |
| Level of Service                  | D     | D    | D      |      | E    |      | F     | C     | A    | F    | F     |      |
| Approach Delay (s)                |       | 50.0 |        |      | 67.7 |      |       | 35.7  |      |      | 169.5 |      |
| Approach LOS                      |       | D    |        |      | E    |      |       | D     |      |      | F     |      |
| <b>Intersection Summary</b>       |       |      |        |      |      |      |       |       |      |      |       |      |
| HCM 2000 Control Delay            |       |      | 94.3   |      |      |      |       |       |      |      |       | F    |
| HCM 2000 Volume to Capacity ratio |       |      | 1.19   |      |      |      |       |       |      |      |       |      |
| Actuated Cycle Length (s)         |       |      | 135.0  |      |      |      |       |       | 22.0 |      |       |      |
| Intersection Capacity Utilization |       |      | 115.3% |      |      |      |       |       |      |      |       | H    |
| Analysis Period (min)             |       |      | 15     |      |      |      |       |       |      |      |       |      |
| c Critical Lane Group             |       |      |        |      |      |      |       |       |      |      |       |      |



| Lane Group              | WBR  | NBT   | NBR  | SBL   | SBT  |
|-------------------------|------|-------|------|-------|------|
| Lane Group Flow (vph)   | 884  | 2254  | 37   | 821   | 2471 |
| v/c Ratio               | 1.05 | 1.03  | 0.04 | 1.55  | 1.02 |
| Control Delay           | 90.0 | 37.5  | 0.7  | 289.2 | 23.3 |
| Queue Delay             | 0.0  | 7.5   | 0.0  | 0.0   | 30.4 |
| Total Delay             | 90.0 | 45.1  | 0.7  | 289.2 | 53.8 |
| Queue Length 50th (ft)  | ~475 | ~1124 | 1    | ~1041 | ~290 |
| Queue Length 95th (ft)  | #621 | #1257 | m1   | m#790 | m146 |
| Internal Link Dist (ft) |      | 324   |      |       | 498  |
| Turn Bay Length (ft)    |      |       |      | 100   |      |
| Base Capacity (vph)     | 842  | 2197  | 981  | 529   | 2411 |
| Starvation Cap Reductn  | 0    | 43    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0     | 258  |
| Storage Cap Reductn     | 0    | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 1.05 | 1.05  | 0.04 | 1.55  | 1.15 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

3: S Lamar Blvd & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

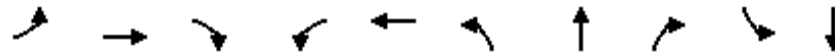
Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM



| Movement                          | WBL  | WBR   | NBT    | NBR  | SBL                       | SBT   |
|-----------------------------------|------|-------|--------|------|---------------------------|-------|
| Lane Configurations               |      | ↔↔    | ↕↕     | ↗    | ↘                         | ↕↕    |
| Traffic Volume (vph)              | 0    | 813   | 2029   | 28   | 706                       | 2273  |
| Future Volume (vph)               | 0    | 813   | 2029   | 28   | 706                       | 2273  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900   | 1900 | 1900                      | 1900  |
| Total Lost time (s)               |      | 6.0   | 6.0    | 6.0  | 6.0                       | 6.0   |
| Lane Util. Factor                 |      | 0.88  | 0.95   | 1.00 | 1.00                      | 0.95  |
| Frbp, ped/bikes                   |      | 1.00  | 1.00   | 0.98 | 1.00                      | 1.00  |
| Flpb, ped/bikes                   |      | 1.00  | 1.00   | 1.00 | 1.00                      | 1.00  |
| Frt                               |      | 0.85  | 1.00   | 0.85 | 1.00                      | 1.00  |
| Flt Protected                     |      | 1.00  | 1.00   | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |      | 2814  | 3574   | 1581 | 1787                      | 3539  |
| Flt Permitted                     |      | 1.00  | 1.00   | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |      | 2814  | 3574   | 1581 | 1787                      | 3539  |
| Peak-hour factor, PHF             | 0.92 | 0.92  | 0.90   | 0.75 | 0.86                      | 0.92  |
| Adj. Flow (vph)                   | 0    | 884   | 2254   | 37   | 821                       | 2471  |
| RTOR Reduction (vph)              | 0    | 8     | 0      | 9    | 0                         | 0     |
| Lane Group Flow (vph)             | 0    | 876   | 2254   | 28   | 821                       | 2471  |
| Confl. Peds. (#/hr)               |      | 7     |        | 6    | 6                         |       |
| Confl. Bikes (#/hr)               |      | 1     |        | 9    |                           |       |
| Heavy Vehicles (%)                | 2%   | 1%    | 1%     | 0%   | 1%                        | 2%    |
| Turn Type                         |      | pt+ov | NA     | Perm | Prot                      | NA    |
| Protected Phases                  |      | 1 4   | 2 3    |      | 1 4                       | 1 2   |
| Permitted Phases                  |      |       |        | 2 3  |                           |       |
| Actuated Green, G (s)             |      | 40.0  | 83.0   | 83.0 | 40.0                      | 92.0  |
| Effective Green, g (s)            |      | 40.0  | 83.0   | 83.0 | 40.0                      | 92.0  |
| Actuated g/C Ratio                |      | 0.30  | 0.61   | 0.61 | 0.30                      | 0.68  |
| Clearance Time (s)                |      |       |        |      |                           |       |
| Vehicle Extension (s)             |      |       |        |      |                           |       |
| Lane Grp Cap (vph)                |      | 833   | 2197   | 972  | 529                       | 2411  |
| v/s Ratio Prot                    |      | 0.31  | c0.63  |      | c0.46                     | c0.70 |
| v/s Ratio Perm                    |      |       |        | 0.02 |                           |       |
| v/c Ratio                         |      | 1.05  | 1.03   | 0.03 | 1.55                      | 1.02  |
| Uniform Delay, d1                 |      | 47.5  | 26.0   | 10.2 | 47.5                      | 21.5  |
| Progression Factor                |      | 1.00  | 0.58   | 0.13 | 1.33                      | 0.36  |
| Incremental Delay, d2             |      | 45.5  | 21.0   | 0.0  | 249.3                     | 13.5  |
| Delay (s)                         |      | 93.0  | 36.1   | 1.3  | 312.3                     | 21.2  |
| Level of Service                  |      | F     | D      | A    | F                         | C     |
| Approach Delay (s)                | 93.0 |       | 35.5   |      |                           | 93.8  |
| Approach LOS                      | F    |       | D      |      |                           | F     |
| <b>Intersection Summary</b>       |      |       |        |      |                           |       |
| HCM 2000 Control Delay            |      |       | 73.0   |      | HCM 2000 Level of Service | E     |
| HCM 2000 Volume to Capacity ratio |      |       | 1.34   |      |                           |       |
| Actuated Cycle Length (s)         |      |       | 135.0  |      | Sum of lost time (s)      | 24.0  |
| Intersection Capacity Utilization |      |       | 121.9% |      | ICU Level of Service      | H     |
| Analysis Period (min)             |      |       | 15     |      |                           |       |
| c Critical Lane Group             |      |       |        |      |                           |       |

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
Queues

Brodie Oaks Center TIA  
Imps-Phase 2-2031 Site+Forecasted PM



| Lane Group              | EBL  | EBT  | EBR  | WBL   | WBT  | NBL   | NBT  | NBR  | SBL   | SBT    |
|-------------------------|------|------|------|-------|------|-------|------|------|-------|--------|
| Lane Group Flow (vph)   | 136  | 204  | 261  | 115   | 205  | 276   | 2097 | 102  | 117   | 2426   |
| v/c Ratio               | 0.75 | 0.66 | 0.73 | 0.97  | 0.35 | 2.30  | 0.86 | 0.09 | 3.08  | 1.08   |
| Control Delay           | 79.3 | 64.3 | 41.2 | 129.9 | 48.8 | 623.7 | 8.9  | 0.3  | 969.7 | 47.8   |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 5.7  | 0.0  | 0.0   | 7.9    |
| Total Delay             | 79.3 | 64.3 | 41.2 | 129.9 | 48.8 | 623.7 | 14.6 | 0.3  | 969.7 | 55.8   |
| Queue Length 50th (ft)  | 115  | 170  | 119  | 101   | 79   | ~393  | 388  | 1    | ~181  | ~1262  |
| Queue Length 95th (ft)  | #202 | 218  | 173  | #228  | 112  | m#429 | m604 | m1   | m#177 | m#1210 |
| Internal Link Dist (ft) |      | 257  |      |       | 238  |       | 436  |      |       | 324    |
| Turn Bay Length (ft)    | 90   |      |      | 100   |      | 125   |      | 160  | 100   |        |
| Base Capacity (vph)     | 181  | 309  | 358  | 119   | 584  | 120   | 2435 | 1083 | 38    | 2243   |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0     | 84     |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0     | 0    | 0     | 296  | 0    | 0     | 0      |
| Storage Cap Reductn     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0     | 0      |
| Reduced v/c Ratio       | 0.75 | 0.66 | 0.73 | 0.97  | 0.35 | 2.30  | 0.98 | 0.09 | 3.08  | 1.12   |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

| Movement                          | EBL  | EBT  | EBR    | WBL   | WBT  | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR                       |      |
|-----------------------------------|------|------|--------|-------|------|------|-------|-------|------|-------|-------|---------------------------|------|
| Lane Configurations               |      |      |        |       |      |      |       |       |      |       |       |                           |      |
| Traffic Volume (vph)              | 117  | 159  | 206    | 105   | 147  | 19   | 243   | 1887  | 90   | 88    | 2100  | 70                        |      |
| Future Volume (vph)               | 117  | 159  | 206    | 105   | 147  | 19   | 243   | 1887  | 90   | 88    | 2100  | 70                        |      |
| 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   | 6.0  | 6.0   | 6.0   |                           |      |
| Lane Util. Factor                 | 1.00 | 1.00 | 1.00   | 1.00  | 0.95 |      | 1.00  | 0.95  | 1.00 | 1.00  | 0.95  |                           |      |
| Frpb, ped/bikes                   | 1.00 | 1.00 | 0.98   | 1.00  | 1.00 |      | 1.00  | 1.00  | 0.96 | 1.00  | 1.00  |                           |      |
| Flpb, ped/bikes                   | 1.00 | 1.00 | 1.00   | 0.99  | 1.00 |      | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  |                           |      |
| Frt                               | 1.00 | 1.00 | 0.85   | 1.00  | 0.98 |      | 1.00  | 1.00  | 0.85 | 1.00  | 0.99  |                           |      |
| Flt Protected                     | 0.95 | 1.00 | 1.00   | 0.95  | 1.00 |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |                           |      |
| Satd. Flow (prot)                 | 1798 | 1900 | 1578   | 1796  | 3516 |      | 1805  | 3574  | 1556 | 1736  | 3519  |                           |      |
| Flt Permitted                     | 0.59 | 1.00 | 1.00   | 0.39  | 1.00 |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |                           |      |
| Satd. Flow (perm)                 | 1115 | 1900 | 1578   | 734   | 3516 |      | 1805  | 3574  | 1556 | 1736  | 3519  |                           |      |
| Peak-hour factor, PHF             | 0.86 | 0.78 | 0.79   | 0.91  | 0.85 | 0.60 | 0.88  | 0.90  | 0.88 | 0.75  | 0.90  | 0.75                      |      |
| Adj. Flow (vph)                   | 136  | 204  | 261    | 115   | 173  | 32   | 276   | 2097  | 102  | 117   | 2333  | 93                        |      |
| RTOR Reduction (vph)              | 0    | 0    | 101    | 0     | 11   | 0    | 0     | 0     | 23   | 0     | 2     | 0                         |      |
| Lane Group Flow (vph)             | 136  | 204  | 160    | 115   | 194  | 0    | 276   | 2097  | 79   | 117   | 2424  | 0                         |      |
| Confl. Peds. (#/hr)               | 3    |      | 5      | 5     |      | 3    | 5     |       | 18   | 18    |       | 5                         |      |
| Confl. Bikes (#/hr)               |      |      | 2      |       |      |      |       |       | 7    |       |       | 8                         |      |
| Heavy Vehicles (%)                | 0%   | 0%   | 0%     | 0%    | 0%   | 0%   | 0%    | 1%    | 0%   | 4%    | 2%    | 0%                        |      |
| Turn Type                         | Perm | NA   | Perm   | Perm  | NA   |      | Prot  | NA    | Perm | Prot  | NA    |                           |      |
| Protected Phases                  |      | 8    |        |       | 8    |      | 5     | 5 6   |      | 7     | 6 7   |                           |      |
| Permitted Phases                  | 8    |      | 8      | 8     |      |      |       |       | 5 6  |       |       |                           |      |
| Actuated Green, G (s)             | 22.0 | 22.0 | 22.0   | 22.0  | 22.0 |      | 9.0   | 92.0  | 92.0 | 3.0   | 86.0  |                           |      |
| Effective Green, g (s)            | 22.0 | 22.0 | 22.0   | 22.0  | 22.0 |      | 9.0   | 92.0  | 92.0 | 3.0   | 86.0  |                           |      |
| Actuated g/C Ratio                | 0.16 | 0.16 | 0.16   | 0.16  | 0.16 |      | 0.07  | 0.68  | 0.68 | 0.02  | 0.64  |                           |      |
| 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  |      | 1.0   |       |      | 1.0   |       |                           |      |
| Lane Grp Cap (vph)                | 181  | 309  | 257    | 119   | 572  |      | 120   | 2435  | 1060 | 38    | 2241  |                           |      |
| v/s Ratio Prot                    |      | 0.11 |        |       | 0.06 |      | c0.15 | c0.59 |      | c0.07 | c0.69 |                           |      |
| v/s Ratio Perm                    | 0.12 |      | 0.10   | c0.16 |      |      |       |       | 0.05 |       |       |                           |      |
| v/c Ratio                         | 0.75 | 0.66 | 0.62   | 0.97  | 0.34 |      | 2.30  | 0.86  | 0.07 | 3.08  | 1.08  |                           |      |
| Uniform Delay, d1                 | 53.9 | 53.0 | 52.6   | 56.1  | 50.1 |      | 63.0  | 16.6  | 7.2  | 66.0  | 24.5  |                           |      |
| Progression Factor                | 1.00 | 1.00 | 1.00   | 1.00  | 1.00 |      | 1.21  | 0.42  | 0.08 | 0.72  | 0.20  |                           |      |
| Incremental Delay, d2             | 24.6 | 10.6 | 10.8   | 73.9  | 1.6  |      | 594.5 | 1.6   | 0.0  | 951.6 | 39.0  |                           |      |
| Delay (s)                         | 78.5 | 63.6 | 63.4   | 130.0 | 51.7 |      | 670.6 | 8.7   | 0.6  | 998.8 | 43.8  |                           |      |
| Level of Service                  | E    | E    | E      | F     | D    |      | F     | A     | A    | F     | D     |                           |      |
| Approach Delay (s)                |      | 66.9 |        |       | 79.8 |      |       | 82.1  |      |       | 87.8  |                           |      |
| Approach LOS                      |      | E    |        |       | E    |      |       | F     |      |       | F     |                           |      |
| <b>Intersection Summary</b>       |      |      |        |       |      |      |       |       |      |       |       |                           |      |
| HCM 2000 Control Delay            |      |      | 82.9   |       |      |      |       |       |      |       |       | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |      |      | 1.26   |       |      |      |       |       |      |       |       |                           |      |
| Actuated Cycle Length (s)         |      |      | 135.0  |       |      |      |       |       |      |       |       | Sum of lost time (s)      | 24.0 |
| Intersection Capacity Utilization |      |      | 126.3% |       |      |      |       |       |      |       |       | ICU Level of Service      | H    |
| Analysis Period (min)             |      |      | 15     |       |      |      |       |       |      |       |       |                           |      |
| c Critical Lane Group             |      |      |        |       |      |      |       |       |      |       |       |                           |      |



| Lane Group              | EBT  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph)   | 134  | 183  | 15   | 259  | 43   | 2165  | 186  | 284   | 2209 |
| v/c Ratio               | 0.41 | 0.76 | 0.04 | 0.67 | 0.77 | 0.97  | 0.19 | 1.82  | 0.86 |
| Control Delay           | 44.6 | 70.7 | 43.2 | 38.4 | 93.4 | 38.6  | 4.1  | 402.0 | 3.7  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| Total Delay             | 44.6 | 70.7 | 43.2 | 38.4 | 93.4 | 38.6  | 4.1  | 402.0 | 3.7  |
| Queue Length 50th (ft)  | 89   | 152  | 11   | 127  | 26   | 904   | 19   | ~335  | 117  |
| Queue Length 95th (ft)  | 93   | 196  | 21   | 186  | #90  | #1142 | 46   | m#306 | m116 |
| Internal Link Dist (ft) | 270  |      | 212  |      |      | 208   |      |       | 469  |
| Turn Bay Length (ft)    |      | 120  |      | 100  | 95   |       |      | 125   |      |
| Base Capacity (vph)     | 328  | 242  | 394  | 389  | 56   | 2223  | 983  | 156   | 2562 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.41 | 0.76 | 0.04 | 0.67 | 0.77 | 0.97  | 0.19 | 1.82  | 0.86 |

**Intersection Summary**

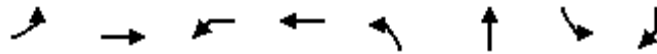
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

5: S Lamar Blvd & Private Driveway/Panther Trail  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR   | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------------|------|------|------|------|------|-------|------|------|------|-------|------|------|
| Lane Configurations          |      |      |      |      |      |       |      |      |      |       |      |      |
| Traffic Volume (veh/h)       | 43   | 14   | 39   | 139  | 9    | 207   | 34   | 2057 | 160  | 247   | 2097 | 17   |
| Future Volume (veh/h)        | 43   | 14   | 39   | 139  | 9    | 207   | 34   | 2057 | 160  | 247   | 2097 | 17   |
| Number                       | 7    | 4    | 14   | 3    | 8    | 18    | 5    | 2    | 12   | 1     | 6    | 16   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 0.99 |      | 0.97 | 0.99 |      | 0.97  | 1.00 |      | 0.97 | 1.00  |      | 0.97 |
| 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 |
| Adj Sat Flow, veh/h/ln       | 1900 | 1900 | 1900 | 1900 | 1900 | 1810  | 1900 | 1881 | 1863 | 1827  | 1881 | 1900 |
| Adj Flow Rate, veh/h         | 61   | 23   | 50   | 183  | 15   | 259   | 43   | 2165 | 186  | 284   | 2184 | 25   |
| Adj No. of Lanes             | 0    | 1    | 0    | 1    | 1    | 1     | 1    | 2    | 1    | 1     | 2    | 0    |
| Peak Hour Factor             | 0.70 | 0.60 | 0.78 | 0.76 | 0.60 | 0.80  | 0.79 | 0.95 | 0.86 | 0.87  | 0.96 | 0.69 |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 0    | 0    | 5     | 0    | 1    | 2    | 4     | 1    | 0    |
| Cap, veh/h                   | 156  | 64   | 108  | 304  | 394  | 308   | 105  | 2224 | 955  | 163   | 2600 | 30   |
| Arrive On Green              | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21  | 0.62 | 0.62 | 0.62 | 0.06  | 0.72 | 0.72 |
| Sat Flow, veh/h              | 564  | 307  | 519  | 1332 | 1900 | 1484  | 178  | 3574 | 1534 | 1740  | 3619 | 41   |
| Grp Volume(v), veh/h         | 134  | 0    | 0    | 183  | 15   | 259   | 43   | 2165 | 186  | 284   | 1076 | 1133 |
| Grp Sat Flow(s),veh/h/ln     | 1390 | 0    | 0    | 1332 | 1900 | 1484  | 178  | 1787 | 1534 | 1740  | 1787 | 1873 |
| Q Serve(g_s), s              | 8.6  | 0.0  | 0.0  | 9.1  | 0.9  | 22.6  | 30.6 | 78.3 | 7.0  | 8.0   | 57.5 | 58.2 |
| Cycle Q Clear(g_c), s        | 10.9 | 0.0  | 0.0  | 20.1 | 0.9  | 22.6  | 75.8 | 78.3 | 7.0  | 8.0   | 57.5 | 58.2 |
| Prop In Lane                 | 0.46 |      | 0.37 | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00  |      | 0.02 |
| Lane Grp Cap(c), veh/h       | 327  | 0    | 0    | 304  | 394  | 308   | 105  | 2224 | 955  | 163   | 1284 | 1346 |
| V/C Ratio(X)                 | 0.41 | 0.00 | 0.00 | 0.60 | 0.04 | 0.84  | 0.41 | 0.97 | 0.19 | 1.75  | 0.84 | 0.84 |
| Avail Cap(c_a), veh/h        | 327  | 0    | 0    | 304  | 394  | 308   | 105  | 2224 | 955  | 163   | 1284 | 1346 |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 46.5 | 0.0  | 0.0  | 51.0 | 42.7 | 51.4  | 45.2 | 24.4 | 11.0 | 46.9  | 13.4 | 13.5 |
| Incr Delay (d2), s/veh       | 3.8  | 0.0  | 0.0  | 8.6  | 0.2  | 23.3  | 11.5 | 13.8 | 0.5  | 359.8 | 6.6  | 6.5  |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 4.7  | 0.0  | 0.0  | 7.1  | 0.5  | 11.3  | 1.8  | 42.4 | 3.1  | 22.3  | 30.2 | 32.0 |
| LnGrp Delay(d),s/veh         | 50.3 | 0.0  | 0.0  | 59.5 | 42.9 | 74.7  | 56.7 | 38.2 | 11.4 | 406.7 | 20.1 | 20.1 |
| LnGrp LOS                    | D    |      |      | E    | D    | E     | E    | D    | B    | F     | C    | C    |
| Approach Vol, veh/h          |      | 134  |      |      | 457  |       |      | 2394 |      |       | 2493 |      |
| Approach Delay, s/veh        |      | 50.3 |      |      | 67.6 |       |      | 36.5 |      |       | 64.1 |      |
| Approach LOS                 |      | D    |      |      | E    |       |      | D    |      |       | E    |      |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6     | 7    | 8    |      |       |      |      |
| Assigned Phs                 | 1    | 2    |      | 4    |      | 6     |      | 8    |      |       |      |      |
| Phs Duration (G+Y+Rc), s     | 13.0 | 89.0 |      | 33.0 |      | 102.0 |      | 33.0 |      |       |      |      |
| Change Period (Y+Rc), s      | 5.0  | 5.0  |      | 5.0  |      | 5.0   |      | 5.0  |      |       |      |      |
| Max Green Setting (Gmax), s  | 8.0  | 84.0 |      | 28.0 |      | 97.0  |      | 28.0 |      |       |      |      |
| Max Q Clear Time (g_c+I1), s | 10.0 | 80.3 |      | 12.9 |      | 60.2  |      | 24.6 |      |       |      |      |
| Green Ext Time (p_c), s      | 0.0  | 2.7  |      | 0.3  |      | 7.2   |      | 0.2  |      |       |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |       |      |      |      |       |      |      |
| HCM 2010 Ctrl Delay          |      |      |      | 52.0 |      |       |      |      |      |       |      |      |
| HCM 2010 LOS                 |      |      |      | D    |      |       |      |      |      |       |      |      |





| Lane Group              | EBL   | EBT   | WBL   | WBT  | NBL   | NBT   | SBL  | SBR  |
|-------------------------|-------|-------|-------|------|-------|-------|------|------|
| Lane Group Flow (vph)   | 624   | 545   | 192   | 186  | 703   | 2298  | 217  | 2060 |
| v/c Ratio               | 2.29  | 1.26  | 1.10  | 0.52 | 2.76  | 1.37  | 0.49 | 0.98 |
| Control Delay           | 613.0 | 163.6 | 137.8 | 18.4 | 823.3 | 204.4 | 46.4 | 45.0 |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  |
| Total Delay             | 613.0 | 163.6 | 137.8 | 18.4 | 823.3 | 204.4 | 46.4 | 45.0 |
| Queue Length 50th (ft)  | ~748  | ~430  | ~132  | 27   | ~519  | ~938  | 158  | 616  |
| Queue Length 95th (ft)  | #876  | #417  | #286  | 13   | #406  | #961  | 227  | #764 |
| Internal Link Dist (ft) |       | 165   |       | 155  |       | 606   |      |      |
| Turn Bay Length (ft)    |       |       |       |      |       |       | 160  |      |
| Base Capacity (vph)     | 273   | 432   | 174   | 358  | 255   | 1680  | 444  | 2106 |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0    | 0     | 0     | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0    | 0     | 0     | 0    | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0    | 0     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 2.29  | 1.26  | 1.10  | 0.52 | 2.76  | 1.37  | 0.49 | 0.98 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

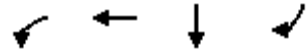
6: S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM



| Movement               | EBL   | EBT   | EBR2 | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL  | SBR   | SBR2 |
|------------------------|-------|-------|------|-------|-------|------|-------|-------|------|------|-------|------|
| Lane Configurations    | ↖     | ↗     |      | ↖     | ↗     |      | ↖↗    | ↑↑↑   |      | ↖    | ↗↘↙   |      |
| Traffic Volume (vph)   | 512   | 42    | 424  | 182   | 18    | 104  | 436   | 1813  | 114  | 187  | 1763  | 110  |
| Future Volume (vph)    | 512   | 42    | 424  | 182   | 18    | 104  | 436   | 1813  | 114  | 187  | 1763  | 110  |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 6.5   | 6.5   |      | 6.5   | 6.5   |      | 7.5   | 5.5   |      | 7.0  | 5.5   |      |
| Lane Util. Factor      | 1.00  | 1.00  |      | 1.00  | 1.00  |      | 0.97  | 0.91  |      | 1.00 | 0.64  |      |
| Frbp, ped/bikes        | 1.00  | 0.99  |      | 1.00  | 0.99  |      | 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  |      |
| Frt                    | 1.00  | 0.87  |      | 1.00  | 0.88  |      | 1.00  | 0.99  |      | 1.00 | 0.85  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 1.00  |      | 0.95  | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)      | 1804  | 1623  |      | 1787  | 1616  |      | 3502  | 5113  |      | 1805 | 4097  |      |
| Flt Permitted          | 0.36  | 1.00  |      | 0.22  | 1.00  |      | 0.95  | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)      | 687   | 1623  |      | 407   | 1616  |      | 3502  | 5113  |      | 1805 | 4097  |      |
| Peak-hour factor, PHF  | 0.82  | 0.72  | 0.87 | 0.95  | 0.55  | 0.68 | 0.62  | 0.86  | 0.60 | 0.86 | 0.93  | 0.67 |
| Adj. Flow (vph)        | 624   | 58    | 487  | 192   | 33    | 153  | 703   | 2108  | 190  | 217  | 1896  | 164  |
| RTOR Reduction (vph)   | 0     | 164   | 0    | 0     | 129   | 0    | 0     | 8     | 0    | 0    | 74    | 0    |
| Lane Group Flow (vph)  | 624   | 381   | 0    | 192   | 57    | 0    | 703   | 2290  | 0    | 217  | 1986  | 0    |
| Confl. Peds. (#/hr)    | 2     |       | 1    | 1     |       | 2    | 10    |       |      |      |       | 10   |
| Confl. Bikes (#/hr)    |       |       | 1    |       |       | 2    |       |       | 2    |      |       | 1    |
| Heavy Vehicles (%)     | 0%    | 0%    | 0%   | 1%    | 0%    | 2%   | 0%    | 0%    | 0%   | 0%   | 1%    | 0%   |
| Turn Type              | pm+pt | NA    |      | pm+pt | NA    |      | Prot  | NA    |      | Prot | Prot  |      |
| Protected Phases       | 7     | 4     |      | 3     | 8     |      | 5     | 2     |      | 1    | 6     |      |
| Permitted Phases       | 4     |       |      | 8     |       |      |       |       |      |      |       |      |
| Actuated Green, G (s)  | 33.0  | 21.5  |      | 27.0  | 18.5  |      | 9.5   | 42.5  |      | 32.0 | 64.5  |      |
| Effective Green, g (s) | 33.0  | 21.5  |      | 27.0  | 18.5  |      | 9.5   | 42.5  |      | 32.0 | 64.5  |      |
| Actuated g/C Ratio     | 0.25  | 0.17  |      | 0.21  | 0.14  |      | 0.07  | 0.33  |      | 0.25 | 0.50  |      |
| Clearance Time (s)     | 6.5   | 6.5   |      | 6.5   | 6.5   |      | 7.5   | 5.5   |      | 7.0  | 5.5   |      |
| Vehicle Extension (s)  | 1.0   | 3.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   |      | 2.0  | 2.0   |      |
| Lane Grp Cap (vph)     | 273   | 268   |      | 174   | 229   |      | 255   | 1671  |      | 444  | 2032  |      |
| v/s Ratio Prot         | c0.20 | 0.23  |      | 0.07  | 0.04  |      | c0.20 | c0.45 |      | 0.12 | c0.48 |      |
| v/s Ratio Perm         | c0.38 |       |      | 0.16  |       |      |       |       |      |      |       |      |
| v/c Ratio              | 2.29  | 1.42  |      | 1.10  | 0.25  |      | 2.76  | 1.37  |      | 0.49 | 0.98  |      |
| Uniform Delay, d1      | 46.5  | 54.2  |      | 49.1  | 49.6  |      | 60.2  | 43.8  |      | 42.0 | 32.0  |      |
| Progression Factor     | 1.00  | 1.00  |      | 1.00  | 1.00  |      | 1.00  | 1.00  |      | 1.00 | 1.00  |      |
| Incremental Delay, d2  | 590.1 | 209.5 |      | 98.6  | 2.6   |      | 801.5 | 170.6 |      | 3.8  | 15.3  |      |
| Delay (s)              | 636.6 | 263.8 |      | 147.7 | 52.2  |      | 861.8 | 214.3 |      | 45.8 | 47.3  |      |
| Level of Service       | F     | F     |      | F     | D     |      | F     | F     |      | D    | D     |      |
| Approach Delay (s)     |       | 462.8 |      |       | 100.7 |      |       | 366.0 |      |      |       |      |
| Approach LOS           |       | F     |      |       | F     |      |       | F     |      |      |       |      |

| Intersection Summary              |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 261.5  | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio | 1.68   |                           |      |
| Actuated Cycle Length (s)         | 130.0  | Sum of lost time (s)      | 26.0 |
| Intersection Capacity Utilization | 135.0% | ICU Level of Service      | H    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |



| Lane Group              | WBL  | WBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 724  | 1524 | 1931 | 395  |
| v/c Ratio               | 0.83 | 0.86 | 0.75 | 0.25 |
| Control Delay           | 14.4 | 16.6 | 37.1 | 0.4  |
| Queue Delay             | 0.0  | 0.0  | 0.3  | 0.0  |
| Total Delay             | 14.5 | 16.6 | 37.4 | 0.4  |
| Queue Length 50th (ft)  | 638  | 712  | 418  | 0    |
| Queue Length 95th (ft)  | m485 | m528 | 449  | 0    |
| Internal Link Dist (ft) |      | 23   | 453  |      |
| Turn Bay Length (ft)    |      |      |      |      |
| Base Capacity (vph)     | 874  | 1769 | 2563 | 1595 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 2    | 1    | 181  | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.83 | 0.86 | 0.81 | 0.25 |

**Intersection Summary**

m Volume for 95th percentile queue is metered by upstream signal.

7: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM



| Movement                          | EBL  | EBT  | EBR    | WBL     | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR   |  |
|-----------------------------------|------|------|--------|---------|---------------------------|------|------|------|------|------|-------|-------|--|
| Lane Configurations               |      |      |        | ↖       | ↖↗                        |      |      |      |      |      | ↑↑↑   | ↗     |  |
| Traffic Volume (vph)              | 0    | 0    | 0      | 724     | 1133                      | 0    | 0    | 0    | 0    | 0    | 1699  | 359   |  |
| Future Volume (vph)               | 0    | 0    | 0      | 724     | 1133                      | 0    | 0    | 0    | 0    | 0    | 1699  | 359   |  |
| 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   | 4.0   |  |
| Lane Util. Factor                 |      |      |        | 0.91    | 0.91                      |      |      |      |      |      | 0.86  | 1.00  |  |
| Frbp, ped/bikes                   |      |      |        | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.99  |  |
| Flpb, ped/bikes                   |      |      |        | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Frt                               |      |      |        | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.85  |  |
| Flt Protected                     |      |      |        | 0.95    | 0.99                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (prot)                 |      |      |        | 1626    | 3376                      |      |      |      |      |      | 6408  | 1595  |  |
| Flt Permitted                     |      |      |        | 0.95    | 0.99                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (perm)                 |      |      |        | 1626    | 3376                      |      |      |      |      |      | 6408  | 1595  |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92   | 0.82    | 0.83                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.88  | 0.91  |  |
| Adj. Flow (vph)                   | 0    | 0    | 0      | 883     | 1365                      | 0    | 0    | 0    | 0    | 0    | 1931  | 395   |  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 49      | 49                        | 0    | 0    | 0    | 0    | 0    | 0     | 0     |  |
| Lane Group Flow (vph)             | 0    | 0    | 0      | 675     | 1475                      | 0    | 0    | 0    | 0    | 0    | 1931  | 395   |  |
| Confl. Bikes (#/hr)               |      |      |        |         |                           |      |      |      |      |      |       | 1     |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%     | 1%      | 2%                        | 0%   | 2%   | 2%   | 2%   | 2%   | 2%    | 0%    |  |
| Turn Type                         |      |      |        | custom  | NA                        |      |      |      |      |      | NA    | Free  |  |
| Protected Phases                  |      |      |        | 1 2 4 8 | 1 2 4 8                   |      |      |      |      |      | 5 6 7 |       |  |
| Permitted Phases                  |      |      |        | 3       | 3                         |      |      |      |      |      |       | Free  |  |
| Actuated Green, G (s)             |      |      |        | 61.0    | 61.0                      |      |      |      |      |      | 58.0  | 135.0 |  |
| Effective Green, g (s)            |      |      |        | 61.0    | 61.0                      |      |      |      |      |      | 58.0  | 135.0 |  |
| Actuated g/C Ratio                |      |      |        | 0.45    | 0.45                      |      |      |      |      |      | 0.43  | 1.00  |  |
| Clearance Time (s)                |      |      |        |         |                           |      |      |      |      |      |       |       |  |
| Vehicle Extension (s)             |      |      |        |         |                           |      |      |      |      |      |       |       |  |
| Lane Grp Cap (vph)                |      |      |        | 806     | 1675                      |      |      |      |      |      | 2753  | 1595  |  |
| v/s Ratio Prot                    |      |      |        | 0.35    | c0.37                     |      |      |      |      |      | c0.30 |       |  |
| v/s Ratio Perm                    |      |      |        | 0.07    | 0.07                      |      |      |      |      |      |       | 0.25  |  |
| v/c Ratio                         |      |      |        | 0.84    | 0.88                      |      |      |      |      |      | 0.70  | 0.25  |  |
| Uniform Delay, d1                 |      |      |        | 32.6    | 33.7                      |      |      |      |      |      | 31.4  | 0.0   |  |
| Progression Factor                |      |      |        | 0.53    | 0.58                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Incremental Delay, d2             |      |      |        | 0.7     | 0.6                       |      |      |      |      |      | 1.5   | 0.4   |  |
| Delay (s)                         |      |      |        | 18.0    | 20.2                      |      |      |      |      |      | 32.9  | 0.4   |  |
| Level of Service                  |      |      |        | B       | C                         |      |      |      |      |      | C     | A     |  |
| Approach Delay (s)                |      | 0.0  |        |         | 19.5                      |      |      | 0.0  |      |      | 27.4  |       |  |
| Approach LOS                      |      | A    |        |         | B                         |      |      | A    |      |      | C     |       |  |
| <b>Intersection Summary</b>       |      |      |        |         |                           |      |      |      |      |      |       |       |  |
| HCM 2000 Control Delay            |      |      | 23.5   |         | HCM 2000 Level of Service |      |      |      |      |      | C     |       |  |
| HCM 2000 Volume to Capacity ratio |      |      | 1.05   |         |                           |      |      |      |      |      |       |       |  |
| Actuated Cycle Length (s)         |      |      | 135.0  |         | Sum of lost time (s)      |      |      |      |      | 40.0 |       |       |  |
| Intersection Capacity Utilization |      |      | 103.7% |         | ICU Level of Service      |      |      |      |      | G    |       |       |  |
| Analysis Period (min)             |      |      | 15     |         |                           |      |      |      |      |      |       |       |  |
| c Critical Lane Group             |      |      |        |         |                           |      |      |      |      |      |       |       |  |















| Lane Group              | WBT   | WBR   | NBL  | NBT  |
|-------------------------|-------|-------|------|------|
| Lane Group Flow (vph)   | 1756  | 776   | 395  | 1248 |
| v/c Ratio               | 1.29  | 1.39  | 0.39 | 0.39 |
| Control Delay           | 175.1 | 212.5 | 1.2  | 2.1  |
| Queue Delay             | 0.8   | 0.0   | 4.7  | 2.6  |
| Total Delay             | 176.0 | 212.5 | 5.8  | 4.7  |
| Queue Length 50th (ft)  | ~713  | ~771  | 3    | 15   |
| Queue Length 95th (ft)  | #799  | #1006 | m1   | m16  |
| Internal Link Dist (ft) | 133   |       |      | 295  |
| Turn Bay Length (ft)    |       |       |      |      |
| Base Capacity (vph)     | 1356  | 558   | 1022 | 3172 |
| Starvation Cap Reductn  | 0     | 0     | 543  | 1759 |
| Spillback Cap Reductn   | 250   | 0     | 52   | 78   |
| Storage Cap Reductn     | 0     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.59  | 1.39  | 0.82 | 0.88 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

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|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |  |
| Lane Configurations               |   |   |   |   | ↑↑↑   | ↑   | ↑  | ↑↑↑   |   |   |   |   |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 0   | 1563  | 691   | 426  | 1022  | 0   | 0   | 0   | 0   |  |
| Future Volume (vph)               | 0   | 0   | 0   | 0   | 1563  | 691   | 426  | 1022  | 0   | 0   | 0   | 0   |  |
| 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   |   |   |   |   |  |
| Lane Util. Factor                 |   |   |   |   | 0.91  | 1.00  | 0.86   | 0.86  |   |   |   |   |  |
| Frt                               |   |   |   |   | 1.00  | 0.85  | 1.00   | 1.00  |   |   |   |   |  |
| Flt Protected                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (prot)                 |   |   |   |   | 5085  | 1583  | 1537   | 4873  |   |   |   |   |  |
| Flt Permitted                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (perm)                 |   |   |   |   | 5085  | 1583  | 1537   | 4873  |   |   |   |   |  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.93  | 0.89  | 0.89  | 0.82   | 0.91  | 0.92  | 0.92  | 0.92  | 0.92  |  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 0   | 1756  | 776   | 520  | 1123  | 0   | 0   | 0   | 0   |  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 139   | 37   | 37  | 0   | 0   | 0   | 0   |  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 0   | 1756  | 637   | 358  | 1211  | 0   | 0   | 0   | 0   |  |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 2%  | 2%  | 2%  | 1%   | 0%  | 2%  | 2%  | 2%  | 2%  |  |
| Turn Type                         |   |   |   |   | NA  | Perm  | custom   | NA  |   |   |   |   |  |
| Protected Phases                  |   |   |   |   | 1 7 8   |   | 2 3 4 5  | 2 3 4 5   |   |   |   |   |  |
| Permitted Phases                  |   |   |   |   |   | 1 7 8   | 6  | 6   |   |   |   |   |  |
| Actuated Green, G (s)             |   |   |   |   | 36.0  | 36.0  | 81.0   | 81.0  |   |   |   |   |  |
| Effective Green, g (s)            |   |   |   |   | 34.0  | 34.0  | 79.0   | 79.0  |   |   |   |   |  |
| Actuated g/C Ratio                |   |   |   |   | 0.25  | 0.25  | 0.59   | 0.59  |   |   |   |   |  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Lane Grp Cap (vph)                |   |   |   |   | 1280  | 398   | 967  | 3068  |   |   |   |   |  |
| v/s Ratio Prot                    |   |   |   |   | 0.35  |   | 0.12   | c0.13   |   |   |   |   |  |
| v/s Ratio Perm                    |   |   |   |   |   | c0.40   | 0.11   | 0.12  |   |   |   |   |  |
| v/c Ratio                         |   |   |   |   | 1.37  | 1.60  | 0.37   | 0.39  |   |   |   |   |  |
| Uniform Delay, d1                 |   |   |   |   | 50.5  | 50.5  | 14.8   | 15.1  |   |   |   |   |  |
| Progression Factor                |   |   |   |   | 0.90  | 0.86  | 0.12   | 0.20  |   |   |   |   |  |
| Incremental Delay, d2             |   |   |   |   | 172.0   | 280.7   | 0.0  | 0.0   |   |   |   |   |  |
| Delay (s)                         |   |   |   |   | 217.6   | 324.0   | 1.8  | 3.0   |   |   |   |   |  |
| Level of Service                  |   |   |   |   | F   | F   | A  | A   |   |   |   |   |  |
| Approach Delay (s)                |   | 0.0   |   |   | 250.2   |   |  | 2.7   |   |   | 0.0   |   |  |
| Approach LOS                      |   | A   |   |   | F   |   |  | A   |   |   | A   |   |  |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |  |
| HCM 2000 Control Delay            |   |   | 152.8   |   | HCM 2000 Level of Service   |   |  |   | F   |   |   |   |  |
| HCM 2000 Volume to Capacity ratio |   |   | 0.92  |   |   |   |  |   |   |   |   |   |  |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |  |   | 40.0  |   |   |   |  |
| Intersection Capacity Utilization |   |   | 101.0%  |   | ICU Level of Service  |   |  |   | G   |   |   |   |  |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |  |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |  |



| Lane Group              | EBT   | SBL  | SBT  |
|-------------------------|-------|------|------|
| Lane Group Flow (vph)   | 1582  | 648  | 2007 |
| v/c Ratio               | 1.33  | 0.58 | 0.58 |
| Control Delay           | 194.2 | 8.1  | 7.7  |
| Queue Delay             | 0.6   | 5.0  | 2.2  |
| Total Delay             | 194.9 | 13.1 | 9.9  |
| Queue Length 50th (ft)  | ~657  | 460  | 498  |
| Queue Length 95th (ft)  | #742  | m84  | 92   |
| Internal Link Dist (ft) | 69    |      | 291  |
| Turn Bay Length (ft)    |       |      |      |
| Base Capacity (vph)     | 1191  | 1108 | 3467 |
| Starvation Cap Reductn  | 0     | 384  | 1270 |
| Spillback Cap Reductn   | 160   | 79   | 121  |
| Storage Cap Reductn     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.53  | 0.90 | 0.91 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

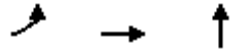
9: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

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| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL     | SBT     | SBR  |  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|------|------|------|---------|---------|------|--|
| Lane Configurations               |      | ↑↑↑   |       |      |                           |      |      |      |      | ↘       | ↑↑↑     |      |  |
| Traffic Volume (vph)              | 0    | 1408  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 905     | 1481    | 0    |  |
| Future Volume (vph)               | 0    | 1408  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 905     | 1481    | 0    |  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900    | 1900    | 1900 |  |
| Total Lost time (s)               |      | 2.0   |       |      |                           |      |      |      |      | 6.0     | 6.0     |      |  |
| Lane Util. Factor                 |      | 0.91  |       |      |                           |      |      |      |      | 0.86    | 0.86    |      |  |
| Frbp, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flpb, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Frt                               |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flt Protected                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 0.99    |      |  |
| Satd. Flow (prot)                 |      | 5187  |       |      |                           |      |      |      |      | 1522    | 4838    |      |  |
| Flt Permitted                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 0.99    |      |  |
| Satd. Flow (perm)                 |      | 5187  |       |      |                           |      |      |      |      | 1522    | 4838    |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.89  | 0.86  | 0.92 | 0.92                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.88    | 0.91    | 0.92 |  |
| Adj. Flow (vph)                   | 0    | 1582  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 1028    | 1627    | 0    |  |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 31      | 31      | 0    |  |
| Lane Group Flow (vph)             | 0    | 1582  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 617     | 1976    | 0    |  |
| Confl. Bikes (#/hr)               |      |       | 1     |      |                           |      |      |      |      |         |         |      |  |
| Heavy Vehicles (%)                | 2%   | 0%    | 0%    | 2%   | 2%                        | 2%   | 2%   | 2%   | 2%   | 2%      | 0%      | 0%   |  |
| Turn Type                         |      | NA    |       |      |                           |      |      |      |      | custom  | NA      |      |  |
| Protected Phases                  |      | 3 4 5 |       |      |                           |      |      |      |      | 1 2 6 8 | 1 2 6 8 |      |  |
| Permitted Phases                  |      |       |       |      |                           |      |      |      |      | 7       | 7       |      |  |
| Actuated Green, G (s)             |      | 27.0  |       |      |                           |      |      |      |      | 88.0    | 88.0    |      |  |
| Effective Green, g (s)            |      | 21.0  |       |      |                           |      |      |      |      | 88.0    | 88.0    |      |  |
| Actuated g/C Ratio                |      | 0.16  |       |      |                           |      |      |      |      | 0.65    | 0.65    |      |  |
| Clearance Time (s)                |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Vehicle Extension (s)             |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Lane Grp Cap (vph)                |      | 806   |       |      |                           |      |      |      |      | 1059    | 3368    |      |  |
| v/s Ratio Prot                    |      | c0.30 |       |      |                           |      |      |      |      | 0.35    | c0.35   |      |  |
| v/s Ratio Perm                    |      |       |       |      |                           |      |      |      |      | 0.06    | 0.06    |      |  |
| v/c Ratio                         |      | 1.96  |       |      |                           |      |      |      |      | 0.58    | 0.59    |      |  |
| Uniform Delay, d1                 |      | 57.0  |       |      |                           |      |      |      |      | 13.2    | 13.2    |      |  |
| Progression Factor                |      | 1.00  |       |      |                           |      |      |      |      | 0.81    | 0.79    |      |  |
| Incremental Delay, d2             |      | 437.8 |       |      |                           |      |      |      |      | 0.3     | 0.1     |      |  |
| Delay (s)                         |      | 494.8 |       |      |                           |      |      |      |      | 11.0    | 10.6    |      |  |
| Level of Service                  |      | F     |       |      |                           |      |      |      |      | B       | B       |      |  |
| Approach Delay (s)                |      | 494.8 |       |      | 0.0                       |      |      | 0.0  |      |         | 10.7    |      |  |
| Approach LOS                      |      | F     |       |      | A                         |      |      | A    |      |         | B       |      |  |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| HCM 2000 Control Delay            |      |       | 191.4 |      | HCM 2000 Level of Service |      |      |      |      |         | F       |      |  |
| HCM 2000 Volume to Capacity ratio |      |       | 1.01  |      |                           |      |      |      |      |         |         |      |  |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      |      |      |      |      | 40.0    |         |      |  |
| Intersection Capacity Utilization |      |       | 70.8% |      | ICU Level of Service      |      |      |      |      | C       |         |      |  |
| Analysis Period (min)             |      |       | 15    |      |                           |      |      |      |      |         |         |      |  |
| c Critical Lane Group             |      |       |       |      |                           |      |      |      |      |         |         |      |  |





| Lane Group              | EBL  | EBT  | NBT   |
|-------------------------|------|------|-------|
| Lane Group Flow (vph)   | 589  | 1823 | 1742  |
| v/c Ratio               | 0.50 | 0.76 | 1.27  |
| Control Delay           | 4.7  | 14.0 | 168.1 |
| Queue Delay             | 49.3 | 48.0 | 0.1   |
| Total Delay             | 54.0 | 62.0 | 168.2 |
| Queue Length 50th (ft)  | 14   | 806  | ~552  |
| Queue Length 95th (ft)  | m6   | m592 | #552  |
| Internal Link Dist (ft) |      | 38   | 673   |
| Turn Bay Length (ft)    |      |      |       |
| Base Capacity (vph)     | 1171 | 2406 | 1375  |
| Starvation Cap Reductn  | 630  | 905  | 0     |
| Spillback Cap Reductn   | 0    | 0    | 26    |
| Storage Cap Reductn     | 0    | 0    | 0     |
| Reduced v/c Ratio       | 1.09 | 1.21 | 1.29  |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
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| Movement                          | EBL     | EBT     | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                       | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------|---------|-------|------|------|------|------|---------------------------|------|------|------|------|
| Lane Configurations               |         |         |       |      |      |      |      |                           |      |      |      |      |
| Traffic Volume (vph)              | 582     | 1705    | 0     | 0    | 0    | 0    | 0    | 1088                      | 358  | 0    | 0    | 0    |
| Future Volume (vph)               | 582     | 1705    | 0     | 0    | 0    | 0    | 0    | 1088                      | 358  | 0    | 0    | 0    |
| 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                       |      |      |      |      |
| Lane Util. Factor                 | 0.91    | 0.91    |       |      |      |      |      | 0.86                      |      |      |      |      |
| Frbp, ped/bikes                   | 1.00    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Flpb, ped/bikes                   | 1.00    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Frt                               | 1.00    | 1.00    |       |      |      |      |      | 0.96                      |      |      |      |      |
| Flt Protected                     | 0.95    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Satd. Flow (prot)                 | 1643    | 3419    |       |      |      |      |      | 6272                      |      |      |      |      |
| Flt Permitted                     | 0.95    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Satd. Flow (perm)                 | 1643    | 3419    |       |      |      |      |      | 6272                      |      |      |      |      |
| Peak-hour factor, PHF             | 0.89    | 0.97    | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 | 0.83                      | 0.83 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)                   | 654     | 1758    | 0     | 0    | 0    | 0    | 0    | 1311                      | 431  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 32      | 32      | 0     | 0    | 0    | 0    | 0    | 27                        | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 557     | 1791    | 0     | 0    | 0    | 0    | 0    | 1715                      | 0    | 0    | 0    | 0    |
| Confl. Bikes (#/hr)               |         |         |       |      |      |      |      |                           | 2    |      |      |      |
| Heavy Vehicles (%)                | 0%      | 1%      | 2%    | 2%   | 2%   | 2%   | 2%   | 0%                        | 0%   | 2%   | 2%   | 2%   |
| Turn Type                         | custom  | NA      |       |      |      |      |      | NA                        |      |      |      |      |
| Protected Phases                  | 4 5 6 8 | 4 5 6 8 |       |      |      |      |      | 1 2 3                     |      |      |      |      |
| Permitted Phases                  | 7       | 7       |       |      |      |      |      |                           |      |      |      |      |
| Actuated Green, G (s)             | 86.0    | 86.0    |       |      |      |      |      | 33.0                      |      |      |      |      |
| Effective Green, g (s)            | 86.0    | 86.0    |       |      |      |      |      | 33.0                      |      |      |      |      |
| Actuated g/C Ratio                | 0.64    | 0.64    |       |      |      |      |      | 0.24                      |      |      |      |      |
| Clearance Time (s)                |         |         |       |      |      |      |      |                           |      |      |      |      |
| Vehicle Extension (s)             |         |         |       |      |      |      |      |                           |      |      |      |      |
| Lane Grp Cap (vph)                | 1119    | 2329    |       |      |      |      |      | 1533                      |      |      |      |      |
| v/s Ratio Prot                    | 0.29    | c0.44   |       |      |      |      |      | c0.27                     |      |      |      |      |
| v/s Ratio Perm                    | 0.05    | 0.08    |       |      |      |      |      |                           |      |      |      |      |
| v/c Ratio                         | 0.50    | 0.77    |       |      |      |      |      | 1.12                      |      |      |      |      |
| Uniform Delay, d1                 | 13.0    | 17.4    |       |      |      |      |      | 51.0                      |      |      |      |      |
| Progression Factor                | 0.57    | 1.09    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Incremental Delay, d2             | 0.0     | 0.1     |       |      |      |      |      | 62.8                      |      |      |      |      |
| Delay (s)                         | 7.4     | 19.1    |       |      |      |      |      | 113.8                     |      |      |      |      |
| Level of Service                  | A       | B       |       |      |      |      |      | F                         |      |      |      |      |
| Approach Delay (s)                |         | 16.3    |       |      | 0.0  |      |      | 113.8                     |      |      | 0.0  |      |
| Approach LOS                      |         | B       |       |      | A    |      |      | F                         |      |      | A    |      |
| <b>Intersection Summary</b>       |         |         |       |      |      |      |      |                           |      |      |      |      |
| HCM 2000 Control Delay            |         |         | 57.2  |      |      |      |      | HCM 2000 Level of Service |      | E    |      |      |
| HCM 2000 Volume to Capacity ratio |         |         | 1.13  |      |      |      |      |                           |      |      |      |      |
| Actuated Cycle Length (s)         |         |         | 135.0 |      |      |      |      | Sum of lost time (s)      |      | 40.0 |      |      |
| Intersection Capacity Utilization |         |         | 74.5% |      |      |      |      | ICU Level of Service      |      | D    |      |      |
| Analysis Period (min)             |         |         | 15    |      |      |      |      |                           |      |      |      |      |
| c Critical Lane Group             |         |         |       |      |      |      |      |                           |      |      |      |      |



| Lane Group              | WBL   | WBT   | NBL  | NBT  | SBT  |
|-------------------------|-------|-------|------|------|------|
| Lane Group Flow (vph)   | 1574  | 1199  | 183  | 220  | 204  |
| v/c Ratio               | 2.21  | 1.15  | 0.36 | 0.14 | 0.22 |
| Control Delay           | 573.5 | 124.4 | 7.9  | 1.1  | 29.5 |
| Queue Delay             | 0.9   | 0.0   | 3.7  | 0.0  | 0.2  |
| Total Delay             | 574.4 | 124.4 | 11.6 | 1.1  | 29.7 |
| Queue Length 50th (ft)  | ~1098 | ~435  | 153  | 0    | 34   |
| Queue Length 95th (ft)  | #1200 | #532  | 248  | 0    | 45   |
| Internal Link Dist (ft) |       | 364   |      | 236  | 206  |
| Turn Bay Length (ft)    | 300   |       |      |      |      |
| Base Capacity (vph)     | 713   | 1043  | 516  | 1493 | 815  |
| Starvation Cap Reductn  | 0     | 0     | 249  | 0    | 0    |
| Spillback Cap Reductn   | 93    | 0     | 0    | 0    | 197  |
| Storage Cap Reductn     | 0     | 0     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 2.54  | 1.15  | 0.69 | 0.15 | 0.33 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.




















Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

11: West Gate Blvd & US 290 WBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |   |   |   |  |  |  |  |  |   |   |  |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 1385  | 1098  | 22  | 329   | 29  | 0   | 0   | 96  | 51  |
| Future Volume (vph)               | 0   | 0   | 0   | 1385  | 1098  | 22  | 329   | 29  | 0   | 0   | 96  | 51  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               |   |   |   | 5.5   | 5.5   |   | 5.5   | 6.0   |   |   | 6.0   |   |
| Lane Util. Factor                 |   |   |   | 0.97  | 0.91  |   | 0.91  | 0.91  |   |   | 0.91  |   |
| Frbp, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 0.99  |   |
| Flpb, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  |   |
| Frt                               |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 0.95  |   |
| Flt Protected                     |   |   |   | 0.95  | 1.00  |   | 0.95  | 0.96  |   |   | 1.00  |   |
| Satd. Flow (prot)                 |   |   |   | 3502  | 5106  |   | 1625  | 3263  |   |   | 4774  |   |
| Flt Permitted                     |   |   |   | 0.95  | 1.00  |   | 0.62  | 0.65  |   |   | 1.00  |   |
| Satd. Flow (perm)                 |   |   |   | 3502  | 5106  |   | 1058  | 2200  |   |   | 4774  |   |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.88  | 0.94  | 0.70  | 0.90  | 0.79  | 0.92  | 0.92  | 0.74  | 0.69  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 1574  | 1168  | 31  | 366   | 37  | 0   | 0   | 130   | 74  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 60  | 0   |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 1574  | 1197  | 0   | 183   | 220   | 0   | 0   | 144   | 0   |
| Confl. Peds. (#/hr)               |   |   |   |   |   |   | 2   |   |   |   |   | 2   |
| Confl. Bikes (#/hr)               |   |   |   |   |   | 2   |   |   |   |   |   |   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 0%  | 1%  | 7%  | 1%  | 5%  | 2%  | 2%  | 0%  | 6%  |
| Turn Type                         |   |   |   | Perm  | NA  |   | custom  | NA  |   |   |   | NA  |
| Protected Phases                  |   |   |   |   | 4 5   |   |   | 1 2 6 7   |   |   |   | 1 2   |
| Permitted Phases                  |   |   |   | 4 5   |   |   | 6 7   |   |   |   |   |   |
| Actuated Green, G (s)             |   |   |   | 26.0  | 26.0  |   | 62.8  | 92.5  |   |   |   | 24.2  |
| Effective Green, g (s)            |   |   |   | 26.0  | 26.0  |   | 62.8  | 81.5  |   |   |   | 24.2  |
| Actuated g/C Ratio                |   |   |   | 0.20  | 0.20  |   | 0.48  | 0.63  |   |   |   | 0.19  |
| Clearance Time (s)                |   |   |   |   |   |   |   |   |   |   |   |   |
| Vehicle Extension (s)             |   |   |   |   |   |   |   |   |   |   |   |   |
| Lane Grp Cap (vph)                |   |   |   | 700   | 1021  |   | 511   | 1379  |   |   |   | 888   |
| v/s Ratio Prot                    |   |   |   |   | 0.23  |   |   |   |   |   |   | c0.03   |
| v/s Ratio Perm                    |   |   |   | c0.45   |   |   | c0.17   | 0.10  |   |   |   |   |
| v/c Ratio                         |   |   |   | 2.25  | 1.17  |   | 0.36  | 0.16  |   |   |   | 0.16  |
| Uniform Delay, d1                 |   |   |   | 52.0  | 52.0  |   | 21.0  | 10.1  |   |   |   | 44.4  |
| Progression Factor                |   |   |   | 1.00  | 1.00  |   | 0.29  | 0.14  |   |   |   | 1.00  |
| Incremental Delay, d2             |   |   |   | 566.5   | 88.0  |   | 0.1   | 0.0   |   |   |   | 0.0   |
| Delay (s)                         |   |   |   | 618.5   | 140.0   |   | 6.2   | 1.5   |   |   |   | 44.4  |
| Level of Service                  |   |   |   | F   | F   |   | A   | A   |   |   |   | D   |
| Approach Delay (s)                |   | 0.0   |   |   | 411.6   |   |   | 3.6   |   |   |   | 44.4  |
| Approach LOS                      |   | A   |   |   | F   |   |   | A   |   |   |   | D   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 340.8   |   | HCM 2000 Level of Service   |   |   |   |   |   | F   |   |
| HCM 2000 Volume to Capacity ratio |   |   | 0.88  |   |   |   |   |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 130.0   |   | Sum of lost time (s)  |   |   |   |   |   | 34.0  |   |
| Intersection Capacity Utilization |   |   | 96.9%   |   | ICU Level of Service  |   |   |   |   |   | F   |   |
| Analysis Period (min)             |   |   | 15  |   |   |   |   |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |   |   |   |   |   |   |



| Lane Group              | EBL  | EBT  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 37   | 1088 | 379  | 665  | 135  | 1593 |
| v/c Ratio               | 0.05 | 0.78 | 0.53 | 0.74 | 0.29 | 0.87 |
| Control Delay           | 22.8 | 37.9 | 49.7 | 22.1 | 53.7 | 26.6 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 47.5 |
| Total Delay             | 22.8 | 37.9 | 49.7 | 22.1 | 53.7 | 74.2 |
| Queue Length 50th (ft)  | 18   | 406  | 152  | 104  | 77   | 352  |
| Queue Length 95th (ft)  | 30   | 427  | 204  | 146  | m42  | m16  |
| Internal Link Dist (ft) |      | 52   | 369  |      |      | 236  |
| Turn Bay Length (ft)    |      |      |      | 90   |      |      |
| Base Capacity (vph)     | 746  | 1416 | 714  | 896  | 469  | 1827 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 615  |
| Spillback Cap Reductn   | 0    | 0    | 7    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.05 | 0.77 | 0.54 | 0.74 | 0.29 | 1.31 |

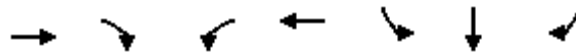
**Intersection Summary**

m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

| Movement                          | EBL   | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT     | SBR                       |                      |   |
|-----------------------------------|-------|-------|-------|------|------|------|------|------|------|------|---------|---------------------------|----------------------|---|
| Lane Configurations               |       |       |       |      |      |      |      |      |      |      |         |                           |                      |   |
| Traffic Volume (vph)              | 25    | 641   | 291   | 0    | 0    | 0    | 0    | 345  | 552  | 111  | 1402    | 0                         |                      |   |
| Future Volume (vph)               | 25    | 641   | 291   | 0    | 0    | 0    | 0    | 345  | 552  | 111  | 1402    | 0                         |                      |   |
| 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  | 5.5  | 5.5     |                           |                      |   |
| Lane Util. Factor                 | 1.00  | 0.95  |       |      |      |      |      | 0.95 | 0.88 | 1.00 | 0.95    |                           |                      |   |
| Frbp, ped/bikes                   | 1.00  | 1.00  |       |      |      |      |      | 1.00 | 0.98 | 1.00 | 1.00    |                           |                      |   |
| Flpb, ped/bikes                   | 1.00  | 1.00  |       |      |      |      |      | 1.00 | 1.00 | 1.00 | 1.00    |                           |                      |   |
| Frt                               | 1.00  | 0.96  |       |      |      |      |      | 1.00 | 0.85 | 1.00 | 1.00    |                           |                      |   |
| Flt Protected                     | 0.95  | 1.00  |       |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00    |                           |                      |   |
| Satd. Flow (prot)                 | 1805  | 3405  |       |      |      |      |      | 3574 | 2746 | 1805 | 3610    |                           |                      |   |
| Flt Permitted                     | 0.95  | 1.00  |       |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00    |                           |                      |   |
| Satd. Flow (perm)                 | 1805  | 3405  |       |      |      |      |      | 3574 | 2746 | 1805 | 3610    |                           |                      |   |
| Peak-hour factor, PHF             | 0.67  | 0.83  | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 | 0.91 | 0.83 | 0.82 | 0.88    | 0.92                      |                      |   |
| Adj. Flow (vph)                   | 37    | 772   | 316   | 0    | 0    | 0    | 0    | 379  | 665  | 135  | 1593    | 0                         |                      |   |
| RTOR Reduction (vph)              | 0     | 8     | 0     | 0    | 0    | 0    | 0    | 0    | 346  | 0    | 0       | 0                         |                      |   |
| Lane Group Flow (vph)             | 37    | 1080  | 0     | 0    | 0    | 0    | 0    | 379  | 319  | 135  | 1593    | 0                         |                      |   |
| Confl. Peds. (#/hr)               |       |       | 1     |      |      |      |      |      | 1    | 1    |         |                           |                      |   |
| Confl. Bikes (#/hr)               |       |       | 1     |      |      |      |      |      | 1    |      |         |                           |                      |   |
| Heavy Vehicles (%)                | 0%    | 1%    | 1%    | 2%   | 2%   | 2%   | 2%   | 1%   | 1%   | 0%   | 0%      | 0%                        |                      |   |
| Turn Type                         | Split | NA    |       |      |      |      |      | NA   | Perm | Prot | NA      |                           |                      |   |
| Protected Phases                  | 1 7   | 1 7   |       |      |      |      |      | 5 6  |      | 2 4  | 2 4 5 6 |                           |                      |   |
| Permitted Phases                  |       |       |       |      |      |      |      |      | 5 6  |      |         |                           |                      |   |
| Actuated Green, G (s)             | 52.7  | 52.7  |       |      |      |      |      | 26.5 | 26.5 | 33.8 | 65.8    |                           |                      |   |
| Effective Green, g (s)            | 47.2  | 47.2  |       |      |      |      |      | 26.5 | 26.5 | 33.8 | 59.8    |                           |                      |   |
| Actuated g/C Ratio                | 0.36  | 0.36  |       |      |      |      |      | 0.20 | 0.20 | 0.26 | 0.46    |                           |                      |   |
| Clearance Time (s)                |       |       |       |      |      |      |      |      |      |      |         |                           |                      |   |
| Vehicle Extension (s)             |       |       |       |      |      |      |      |      |      |      |         |                           |                      |   |
| Lane Grp Cap (vph)                | 655   | 1236  |       |      |      |      |      | 728  | 559  | 469  | 1660    |                           |                      |   |
| v/s Ratio Prot                    | 0.02  | c0.32 |       |      |      |      |      | 0.11 |      | 0.07 | c0.44   |                           |                      |   |
| v/s Ratio Perm                    |       |       |       |      |      |      |      |      | 0.12 |      |         |                           |                      |   |
| v/c Ratio                         | 0.06  | 0.87  |       |      |      |      |      | 0.52 | 0.57 | 0.29 | 0.96    |                           |                      |   |
| Uniform Delay, d1                 | 26.9  | 38.6  |       |      |      |      |      | 46.1 | 46.6 | 38.5 | 33.9    |                           |                      |   |
| Progression Factor                | 1.00  | 1.00  |       |      |      |      |      | 1.00 | 1.00 | 1.35 | 0.89    |                           |                      |   |
| Incremental Delay, d2             | 0.0   | 6.9   |       |      |      |      |      | 2.7  | 4.2  | 0.1  | 2.1     |                           |                      |   |
| Delay (s)                         | 26.9  | 45.5  |       |      |      |      |      | 48.7 | 50.8 | 52.0 | 32.2    |                           |                      |   |
| Level of Service                  | C     | D     |       |      |      |      |      | D    | D    | D    | C       |                           |                      |   |
| Approach Delay (s)                |       | 44.9  |       |      | 0.0  |      |      | 50.1 |      |      | 33.7    |                           |                      |   |
| Approach LOS                      |       | D     |       |      | A    |      |      | D    |      |      | C       |                           |                      |   |
| <b>Intersection Summary</b>       |       |       |       |      |      |      |      |      |      |      |         |                           |                      |   |
| HCM 2000 Control Delay            |       |       | 41.3  |      |      |      |      |      |      |      |         | HCM 2000 Level of Service | D                    |   |
| HCM 2000 Volume to Capacity ratio |       |       | 1.03  |      |      |      |      |      |      |      |         |                           |                      |   |
| Actuated Cycle Length (s)         |       |       | 130.0 |      |      |      |      |      |      |      | 34.0    |                           |                      |   |
| Intersection Capacity Utilization |       |       | 96.9% |      |      |      |      |      |      |      |         |                           | ICU Level of Service | F |
| Analysis Period (min)             |       |       | 15    |      |      |      |      |      |      |      |         |                           |                      |   |
| c Critical Lane Group             |       |       |       |      |      |      |      |      |      |      |         |                           |                      |   |



| Lane Group              | EBT   | EBR  | WBL   | WBT   | SBL   | SBT   | SBR  |
|-------------------------|-------|------|-------|-------|-------|-------|------|
| Lane Group Flow (vph)   | 3404  | 1749 | 357   | 3329  | 373   | 391   | 371  |
| v/c Ratio               | 1.05  | 0.62 | 1.62  | 0.84  | 1.42  | 1.45  | 0.23 |
| Control Delay           | 62.2  | 1.0  | 322.7 | 19.5  | 261.6 | 270.4 | 0.3  |
| Queue Delay             | 22.9  | 0.0  | 0.0   | 5.8   | 0.0   | 0.0   | 0.0  |
| Total Delay             | 85.2  | 1.0  | 322.7 | 25.3  | 261.6 | 270.4 | 0.3  |
| Queue Length 50th (ft)  | ~1591 | 0    | ~566  | 1524  | ~623  | ~657  | 0    |
| Queue Length 95th (ft)  | #1633 | 0    | m#555 | m1287 | #803  | #866  | 0    |
| Internal Link Dist (ft) | 834   |      |       | 1419  |       | 192   |      |
| Turn Bay Length (ft)    |       |      | 950   |       |       |       |      |
| Base Capacity (vph)     | 3252  | 2814 | 220   | 3966  | 262   | 270   | 1595 |
| Starvation Cap Reductn  | 0     | 0    | 0     | 604   | 0     | 0     | 0    |
| Spillback Cap Reductn   | 667   | 0    | 0     | 0     | 0     | 0     | 0    |
| Storage Cap Reductn     | 0     | 0    | 0     | 0     | 0     | 0     | 0    |
| Reduced v/c Ratio       | 1.32  | 0.62 | 1.62  | 0.99  | 1.42  | 1.45  | 0.23 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

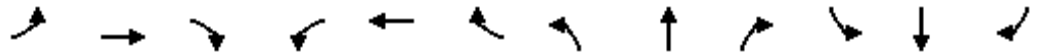
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

13: Capital of Texas Hwy & Mopac SBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM



| Movement                          | EBL  | EBT   | EBR    | WBL   | WBT   | WBR                       | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-----------------------------------|------|-------|--------|-------|-------|---------------------------|------|------|------|-------|-------|-------|
| Lane Configurations               |      | ↑↑↑   | ↑↑     | ↑     | ↑↑↑   |                           |      |      |      | ↑     | ↑     | ↑     |
| Traffic Volume (vph)              | 0    | 3268  | 1644   | 282   | 3196  | 0                         | 0    | 0    | 0    | 386   | 277   | 286   |
| Future Volume (vph)               | 0    | 3268  | 1644   | 282   | 3196  | 0                         | 0    | 0    | 0    | 386   | 277   | 286   |
| Ideal Flow (vphp)                 | 1900 | 1900  | 1900   | 1900  | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  |
| Total Lost time (s)               |      | 7.0   | 4.0    | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5   | 4.0   |
| Lane Util. Factor                 |      | 0.91  | 0.88   | 1.00  | 0.91  |                           |      |      |      | 0.95  | 0.95  | 1.00  |
| Frbp, ped/bikes                   |      | 1.00  | 1.00   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00  | 0.99  |
| Flpb, ped/bikes                   |      | 1.00  | 1.00   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00  | 1.00  |
| Frt                               |      | 1.00  | 0.85   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00  | 0.85  |
| Flt Protected                     |      | 1.00  | 1.00   | 0.95  | 1.00  |                           |      |      |      | 0.95  | 0.99  | 1.00  |
| Satd. Flow (prot)                 |      | 5136  | 2814   | 1787  | 5136  |                           |      |      |      | 1715  | 1773  | 1595  |
| Flt Permitted                     |      | 1.00  | 1.00   | 0.03  | 1.00  |                           |      |      |      | 0.95  | 0.99  | 1.00  |
| Satd. Flow (perm)                 |      | 5136  | 2814   | 62    | 5136  |                           |      |      |      | 1715  | 1773  | 1595  |
| Peak-hour factor, PHF             | 0.92 | 0.96  | 0.94   | 0.79  | 0.96  | 0.92                      | 0.92 | 0.92 | 0.92 | 0.86  | 0.88  | 0.77  |
| Adj. Flow (vph)                   | 0    | 3404  | 1749   | 357   | 3329  | 0                         | 0    | 0    | 0    | 449   | 315   | 371   |
| RTOR Reduction (vph)              | 0    | 0     | 0      | 0     | 0     | 0                         | 0    | 0    | 0    | 0     | 0     | 0     |
| Lane Group Flow (vph)             | 0    | 3404  | 1749   | 357   | 3329  | 0                         | 0    | 0    | 0    | 373   | 391   | 371   |
| Confl. Bikes (#/hr)               |      |       |        |       |       |                           |      |      |      |       |       | 1     |
| Heavy Vehicles (%)                | 2%   | 1%    | 1%     | 1%    | 1%    | 2%                        | 2%   | 2%   | 2%   | 0%    | 1%    | 0%    |
| Turn Type                         |      | NA    | Free   | pm+pt | NA    |                           |      |      |      | Perm  | NA    | Free  |
| Protected Phases                  |      | 2     |        | 1     | 6     |                           |      |      |      |       | 8     |       |
| Permitted Phases                  |      |       | Free   | 6     |       |                           |      |      |      | 8     |       | Free  |
| Actuated Green, G (s)             |      | 114.0 | 180.0  | 139.0 | 139.0 |                           |      |      |      | 27.5  | 27.5  | 180.0 |
| Effective Green, g (s)            |      | 114.0 | 180.0  | 139.0 | 139.0 |                           |      |      |      | 27.5  | 27.5  | 180.0 |
| Actuated g/C Ratio                |      | 0.63  | 1.00   | 0.77  | 0.77  |                           |      |      |      | 0.15  | 0.15  | 1.00  |
| Clearance Time (s)                |      | 7.0   |        | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5   |       |
| Vehicle Extension (s)             |      | 4.0   |        | 2.0   | 4.0   |                           |      |      |      | 2.0   | 2.0   |       |
| Lane Grp Cap (vph)                |      | 3252  | 2814   | 220   | 3966  |                           |      |      |      | 262   | 270   | 1595  |
| v/s Ratio Prot                    |      | 0.66  |        | c0.16 | 0.65  |                           |      |      |      |       |       |       |
| v/s Ratio Perm                    |      |       | 0.62   | c1.09 |       |                           |      |      |      | 0.22  | 0.22  | 0.23  |
| v/c Ratio                         |      | 1.05  | 0.62   | 1.62  | 0.84  |                           |      |      |      | 1.42  | 1.45  | 0.23  |
| Uniform Delay, d1                 |      | 33.0  | 0.0    | 71.1  | 13.3  |                           |      |      |      | 76.2  | 76.2  | 0.0   |
| Progression Factor                |      | 1.00  | 1.00   | 1.16  | 1.42  |                           |      |      |      | 1.00  | 1.00  | 1.00  |
| Incremental Delay, d2             |      | 29.8  | 1.0    | 282.1 | 0.2   |                           |      |      |      | 211.5 | 221.3 | 0.3   |
| Delay (s)                         |      | 62.8  | 1.0    | 364.5 | 19.0  |                           |      |      |      | 287.7 | 297.5 | 0.3   |
| Level of Service                  |      | E     | A      | F     | B     |                           |      |      |      | F     | F     | A     |
| Approach Delay (s)                |      | 41.8  |        |       | 52.5  |                           |      | 0.0  |      |       | 197.2 |       |
| Approach LOS                      |      | D     |        |       | D     |                           |      | A    |      |       | F     |       |
| <b>Intersection Summary</b>       |      |       |        |       |       |                           |      |      |      |       |       |       |
| HCM 2000 Control Delay            |      |       | 63.4   |       |       | HCM 2000 Level of Service |      |      |      | E     |       |       |
| HCM 2000 Volume to Capacity ratio |      |       | 1.62   |       |       |                           |      |      |      |       |       |       |
| Actuated Cycle Length (s)         |      |       | 180.0  |       |       | Sum of lost time (s)      |      |      |      | 20.5  |       |       |
| Intersection Capacity Utilization |      |       | 128.5% |       |       | ICU Level of Service      |      |      |      | H     |       |       |
| Analysis Period (min)             |      |       | 15     |       |       |                           |      |      |      |       |       |       |

c Critical Lane Group
























| Lane Group              | EBL   | EBT    | WBT  | WBR    | NBL   | NBT  | NBR   |
|-------------------------|-------|--------|------|--------|-------|------|-------|
| Lane Group Flow (vph)   | 432   | 3581   | 2474 | 2741   | 1220  | 130  | 477   |
| v/c Ratio               | 1.25  | 1.40   | 0.95 | 1.71   | 1.15  | 0.33 | 1.25  |
| Control Delay           | 161.9 | 201.6  | 36.6 | 341.7  | 139.5 | 63.3 | 180.1 |
| Queue Delay             | 0.0   | 0.0    | 4.9  | 0.0    | 0.0   | 0.0  | 0.0   |
| Total Delay             | 161.9 | 201.6  | 41.5 | 341.7  | 139.5 | 63.3 | 180.1 |
| Queue Length 50th (ft)  | ~580  | ~2956  | 934  | ~2904  | ~598  | 132  | ~636  |
| Queue Length 95th (ft)  | m#513 | m#2629 | m557 | m#1431 | #641  | 198  | #750  |
| Internal Link Dist (ft) |       | 1419   | 756  |        |       | 675  |       |
| Turn Bay Length (ft)    |       |        |      |        | 300   |      |       |
| Base Capacity (vph)     | 346   | 2561   | 2596 | 1599   | 1060  | 395  | 381   |
| Starvation Cap Reductn  | 0     | 0      | 0    | 0      | 0     | 0    | 0     |
| Spillback Cap Reductn   | 0     | 0      | 106  | 0      | 0     | 0    | 0     |
| Storage Cap Reductn     | 0     | 0      | 0    | 0      | 0     | 0    | 0     |
| Reduced v/c Ratio       | 1.25  | 1.40   | 0.99 | 1.71   | 1.15  | 0.33 | 1.25  |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

14: Mopac NBFR & Capital of Texas Hwy  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

|                             |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                    | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations         |  |  |   |   |  |  |  |  |  |   |   |   |
| Traffic Volume (veh/h)      | 380   | 3366  | 0   | 0   | 2425  | 2522  | 1049   | 114   | 391   | 0   | 0   | 0   |
| Future Volume (veh/h)       | 380   | 3366  | 0   | 0   | 2425  | 2522  | 1049   | 114   | 391   | 0   | 0   | 0   |
| Number                      | 5   | 2   | 12  | 1   | 6   | 16  | 7  | 4   | 14  |   |   |   |
| 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  |   |   |   |
| Adj Sat Flow, veh/h/ln      | 1863  | 1881  | 0   | 0   | 1881  | 1881  | 1900   | 1900  | 1881  |   |   |   |
| Adj Flow Rate, veh/h        | 432   | 3581  | 0   | 0   | 2474  | 0   | 1220   | 130   | 0   |   |   |   |
| Adj No. of Lanes            | 1   | 2   | 0   | 0   | 3   | 1   | 3  | 1   | 1   |   |   |   |
| Peak Hour Factor            | 0.88  | 0.94  | 0.92  | 0.92  | 0.98  | 0.92  | 0.86   | 0.88  | 0.82  |   |   |   |
| Percent Heavy Veh, %        | 2   | 1   | 0   | 0   | 1   | 1   | 0  | 0   | 1   |   |   |   |
| Cap, veh/h                  | 363   | 2562  | 0   | 0   | 2553  | 795   | 1063   | 396   | 333   |   |   |   |
| Arrive On Green             | 0.24  | 0.95  | 0.00  | 0.00  | 0.50  | 0.00  | 0.21   | 0.21  | 0.00  |   |   |   |
| Sat Flow, veh/h             | 1774  | 3668  | 0   | 0   | 5305  | 1599  | 5103   | 1900  | 1599  |   |   |   |
| Grp Volume(v), veh/h        | 432   | 3581  | 0   | 0   | 2474  | 0   | 1220   | 130   | 0   |   |   |   |
| Grp Sat Flow(s),veh/h/ln    | 1774  | 1787  | 0   | 0   | 1712  | 1599  | 1701   | 1900  | 1599  |   |   |   |
| Q Serve(g_s), s             | 32.5  | 129.0   | 0.0   | 0.0   | 84.1  | 0.0   | 37.5   | 10.5  | 0.0   |   |   |   |
| Cycle Q Clear(g_c), s       | 32.5  | 129.0   | 0.0   | 0.0   | 84.1  | 0.0   | 37.5   | 10.5  | 0.0   |   |   |   |
| Prop In Lane                | 1.00  |   | 0.00  | 0.00  |   | 1.00  | 1.00   |   | 1.00  |   |   |   |
| Lane Grp Cap(c), veh/h      | 363   | 2562  | 0   | 0   | 2553  | 795   | 1063   | 396   | 333   |   |   |   |
| V/C Ratio(X)                | 1.19  | 1.40  | 0.00  | 0.00  | 0.97  | 0.00  | 1.15   | 0.33  | 0.00  |   |   |   |
| Avail Cap(c_a), veh/h       | 363   | 2562  | 0   | 0   | 2596  | 808   | 1063   | 396   | 333   |   |   |   |
| HCM Platoon Ratio           | 1.33  | 1.33  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Upstream Filter(I)          | 0.09  | 0.09  | 0.00  | 0.00  | 1.00  | 0.00  | 1.00   | 1.00  | 0.00  |   |   |   |
| Uniform Delay (d), s/veh    | 66.5  | 4.2   | 0.0   | 0.0   | 43.9  | 0.0   | 71.3   | 60.5  | 0.0   |   |   |   |
| Incr Delay (d2), s/veh      | 88.3  | 179.3   | 0.0   | 0.0   | 11.2  | 0.0   | 77.7   | 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    | 26.9  | 117.9   | 0.0   | 0.0   | 42.3  | 0.0   | 25.3   | 5.5   | 0.0   |   |   |   |
| LnGrp Delay(d),s/veh        | 154.8   | 183.5   | 0.0   | 0.0   | 55.1  | 0.0   | 148.9  | 60.7  | 0.0   |   |   |   |
| LnGrp LOS                   | F   | F   |   |   | E   |   | F  | E   |   |   |   |   |
| Approach Vol, veh/h         |   | 4013  |   |   | 2474  |   |  | 1350  |   |   |   |   |
| Approach Delay, s/veh       |   | 180.4   |   |   | 55.1  |   |  | 140.4   |   |   |   |   |
| Approach LOS                |   | F   |   |   | E   |   |  | F   |   |   |   |   |
| Timer                       | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                |   | 2   |   | 4   | 5   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s    |   | 136.0   |   | 44.0  | 39.5  | 96.5  |  |   |   |   |   |   |
| Change Period (Y+Rc), s     |   | 7.0   |   | 6.5   | 7.0   | 7.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s |   | 129.0   |   | 37.5  | 31.0  | 91.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+1), s |   | 131.0   |   | 39.5  | 34.5  | 86.1  |  |   |   |   |   |   |
| Green Ext Time (p_c), s     |   | 0.0   |   | 0.0   | 0.0   | 3.4   |  |   |   |   |   |   |
| <b>Intersection Summary</b> |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay         |   |   |   | 134.0   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                |   |   |   | F   |   |   |  |   |   |   |   |   |



| Lane Group              | WBR  | NBT   | NBR  | SBL   | SBT    |
|-------------------------|------|-------|------|-------|--------|
| Lane Group Flow (vph)   | 448  | 4980  | 67   | 403   | 6472   |
| v/c Ratio               | 0.84 | 1.31  | 0.06 | 1.19  | 1.71   |
| Control Delay           | 84.7 | 167.1 | 2.3  | 155.4 | 341.2  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0   | 0.0    |
| Total Delay             | 84.7 | 167.1 | 2.3  | 155.4 | 341.2  |
| Queue Length 50th (ft)  | 293  | ~2760 | 5    | ~570  | ~4115  |
| Queue Length 95th (ft)  | 306  | #2732 | 9    | m#436 | m#3144 |
| Internal Link Dist (ft) |      | 1281  |      |       | 1273   |
| Turn Bay Length (ft)    |      |       | 430  | 550   |        |
| Base Capacity (vph)     | 536  | 3794  | 1160 | 340   | 3794   |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0     | 0      |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0     | 0      |
| Storage Cap Reductn     | 0    | 0     | 0    | 0     | 0      |
| Reduced v/c Ratio       | 0.84 | 1.31  | 0.06 | 1.19  | 1.71   |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

15: Capital of Texas Hwy & Barton Creek Plaza Driveway  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM



| Movement                          | WBL  | WBR  | NBT    | NBR   | SBL                       | SBT   |
|-----------------------------------|------|------|--------|-------|---------------------------|-------|
| Lane Configurations               |      | ↗↗   | ↕↕↕    | ↘     | ↘                         | ↕↕↕   |
| Traffic Volume (vph)              | 0    | 345  | 4631   | 43    | 310                       | 6148  |
| Future Volume (vph)               | 0    | 345  | 4631   | 43    | 310                       | 6148  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900                      | 1900  |
| Total Lost time (s)               |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Lane Util. Factor                 |      | 0.88 | 0.91   | 1.00  | 1.00                      | 0.91  |
| Frt                               |      | 0.85 | 1.00   | 0.85  | 1.00                      | 1.00  |
| Flt Protected                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |      | 2842 | 5136   | 1553  | 1805                      | 5136  |
| Flt Permitted                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |      | 2842 | 5136   | 1553  | 1805                      | 5136  |
| Peak-hour factor, PHF             | 0.92 | 0.77 | 0.93   | 0.64  | 0.77                      | 0.95  |
| Adj. Flow (vph)                   | 0    | 448  | 4980   | 67    | 403                       | 6472  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 13    | 0                         | 0     |
| Lane Group Flow (vph)             | 0    | 448  | 4980   | 54    | 403                       | 6472  |
| Heavy Vehicles (%)                | 2%   | 0%   | 1%     | 4%    | 0%                        | 1%    |
| Turn Type                         |      | Over | NA     | Prot  | Prot                      | NA    |
| Protected Phases                  |      | 5    | 6      | 6     | 5                         | 6     |
| Permitted Phases                  |      |      |        |       |                           |       |
| Actuated Green, G (s)             |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Effective Green, g (s)            |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Actuated g/C Ratio                |      | 0.19 | 0.74   | 0.74  | 0.19                      | 0.74  |
| Clearance Time (s)                |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Vehicle Extension (s)             |      | 2.0  | 4.0    | 4.0   | 2.0                       | 4.0   |
| Lane Grp Cap (vph)                |      | 536  | 3794   | 1147  | 340                       | 3794  |
| v/s Ratio Prot                    |      | 0.16 | 0.97   | 0.03  | c0.22                     | c1.26 |
| v/s Ratio Perm                    |      |      |        |       |                           |       |
| v/c Ratio                         |      | 0.84 | 1.31   | 0.05  | 1.19                      | 1.71  |
| Uniform Delay, d1                 |      | 70.3 | 23.5   | 6.4   | 73.0                      | 23.5  |
| Progression Factor                |      | 1.00 | 1.00   | 1.00  | 0.93                      | 1.03  |
| Incremental Delay, d2             |      | 10.4 | 142.6  | 0.1   | 99.8                      | 318.3 |
| Delay (s)                         |      | 80.7 | 166.1  | 6.4   | 167.6                     | 342.5 |
| Level of Service                  |      | F    | F      | A     | F                         | F     |
| Approach Delay (s)                | 80.7 |      | 164.0  |       |                           | 332.2 |
| Approach LOS                      | F    |      | F      |       |                           | F     |
| <b>Intersection Summary</b>       |      |      |        |       |                           |       |
| HCM 2000 Control Delay            |      |      | 254.5  |       | HCM 2000 Level of Service | F     |
| HCM 2000 Volume to Capacity ratio |      |      | 1.60   |       |                           |       |
| Actuated Cycle Length (s)         |      |      | 180.0  |       | Sum of lost time (s)      | 13.0  |
| Intersection Capacity Utilization |      |      | 124.6% |       | ICU Level of Service      | H     |
| Analysis Period (min)             |      |      | 15     |       |                           |       |
| c Critical Lane Group             |      |      |        |       |                           |       |





















| Lane Group              | WBL  | WBT  | NBL  | NBT  | SBT   | SBR  |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 167  | 1541 | 149  | 180  | 606   | 113  |
| v/c Ratio               | 0.18 | 0.78 | 0.80 | 0.28 | 1.40  | 0.26 |
| Control Delay           | 15.2 | 26.2 | 53.3 | 16.6 | 230.9 | 8.5  |
| Queue Delay             | 0.2  | 0.0  | 0.0  | 1.7  | 2.9   | 0.0  |
| Total Delay             | 15.4 | 26.2 | 53.3 | 18.3 | 233.8 | 8.5  |
| Queue Length 50th (ft)  | 69   | 517  | 58   | 70   | ~710  | 0    |
| Queue Length 95th (ft)  | m104 | m585 | m53  | m80  | #927  | 27   |
| Internal Link Dist (ft) |      | 522  |      | 175  | 200   |      |
| Turn Bay Length (ft)    |      |      | 70   |      |       | 90   |
| Base Capacity (vph)     | 925  | 1986 | 189  | 633  | 434   | 443  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 306  | 0     | 0    |
| Spillback Cap Reductn   | 330  | 0    | 0    | 0    | 108   | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.28 | 0.78 | 0.79 | 0.55 | 1.86  | 0.26 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

16: US 290 WBFR & Victory Drive  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |   |   |   |  |  |   |  |  |   |   |  |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 162   | 1299  | 150   | 85  | 142   | 0   | 0   | 539   | 85  |
| Future Volume (vph)               | 0   | 0   | 0   | 162   | 1299  | 150   | 85  | 142   | 0   | 0   | 539   | 85  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               |   |   |   | 5.5   | 5.5   |   | 5.5   | 4.5   |   |   | 4.5   | 4.5   |
| Lane Util. Factor                 |   |   |   | 1.00  | 0.95  |   | 1.00  | 1.00  |   |   | 1.00  | 1.00  |
| Frbp, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  | 0.98  |
| Flpb, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  | 1.00  |
| Frt                               |   |   |   | 1.00  | 0.98  |   | 1.00  | 1.00  |   |   | 1.00  | 0.85  |
| Flt Protected                     |   |   |   | 0.95  | 1.00  |   | 0.95  | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (prot)                 |   |   |   | 1612  | 3448  |   | 1805  | 1827  |   |   | 1792  | 1476  |
| Flt Permitted                     |   |   |   | 0.95  | 1.00  |   | 0.14  | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (perm)                 |   |   |   | 1612  | 3448  |   | 269   | 1827  |   |   | 1792  | 1476  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.97  | 0.95  | 0.86  | 0.57  | 0.79  | 0.92  | 0.92  | 0.89  | 0.75  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 167   | 1367  | 174   | 149   | 180   | 0   | 0   | 606   | 113   |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 7   | 0   | 0   | 0   | 0   | 0   | 0   | 86  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 167   | 1534  | 0   | 149   | 180   | 0   | 0   | 606   | 27  |
| Confl. Peds. (#/hr)               |   |   |   |   |   | 1   | 6   |   |   |   |   | 6   |
| Confl. Bikes (#/hr)               |   |   |   |   |   |   |   |   |   |   |   | 3   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 12%   | 2%  | 8%  | 0%  | 4%  | 2%  | 2%  | 6%  | 7%  |
| Turn Type                         |   |   |   | Split   | NA  |   | pm+pt   | NA  |   |   | NA  | Perm  |
| Protected Phases                  |   |   |   | 7 8   | 7 8   |   | 2   | 1 2 6   |   |   | 1 6   |   |
| Permitted Phases                  |   |   |   |   |   |   | 1 2 6   |   |   |   |   | 1 6   |
| Actuated Green, G (s)             |   |   |   | 77.0  | 77.0  |   | 42.0  | 47.5  |   |   | 32.7  | 32.7  |
| Effective Green, g (s)            |   |   |   | 77.0  | 77.0  |   | 37.5  | 42.0  |   |   | 32.7  | 32.7  |
| Actuated g/C Ratio                |   |   |   | 0.57  | 0.57  |   | 0.28  | 0.31  |   |   | 0.24  | 0.24  |
| Clearance Time (s)                |   |   |   |   |   |   | 5.5   |   |   |   |   |   |
| Vehicle Extension (s)             |   |   |   |   |   |   | 1.5   |   |   |   |   |   |
| Lane Grp Cap (vph)                |   |   |   | 919   | 1966  |   | 180   | 568   |   |   | 434   | 357   |
| v/s Ratio Prot                    |   |   |   | 0.10  | c0.44   |   | c0.06   | 0.10  |   |   | c0.34   |   |
| v/s Ratio Perm                    |   |   |   |   |   |   | 0.17  |   |   |   |   | 0.02  |
| v/c Ratio                         |   |   |   | 0.18  | 0.78  |   | 0.83  | 0.32  |   |   | 1.40  | 0.08  |
| Uniform Delay, d1                 |   |   |   | 13.9  | 22.4  |   | 40.7  | 35.5  |   |   | 51.1  | 39.5  |
| Progression Factor                |   |   |   | 1.06  | 1.04  |   | 0.81  | 0.49  |   |   | 1.00  | 1.00  |
| Incremental Delay, d2             |   |   |   | 0.0   | 1.9   |   | 21.4  | 0.1   |   |   | 191.9   | 0.0   |
| Delay (s)                         |   |   |   | 14.8  | 25.3  |   | 54.4  | 17.6  |   |   | 243.1   | 39.5  |
| Level of Service                  |   |   |   | B   | C   |   | D   | B   |   |   | F   | D   |
| Approach Delay (s)                |   | 0.0   |   |   | 24.3  |   |   | 34.3  |   |   | 211.1   |   |
| Approach LOS                      |   | A   |   |   | C   |   |   | C   |   |   | F   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 74.2  |   | HCM 2000 Level of Service   |   |   |   |   |   | E   |   |
| HCM 2000 Volume to Capacity ratio |   |   | 1.04  |   |   |   |   |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |   |   |   |   | 26.0  |   |
| Intersection Capacity Utilization |   |   | 133.2%  |   | ICU Level of Service  |   |   |   |   |   | H   |   |
| Analysis Period (min)             |   |   | 15  |   |   |   |   |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |   |   |   |   |   |   |



| Lane Group              | EBT    | NBT  | NBR  | SBL  | SBT  |
|-------------------------|--------|------|------|------|------|
| Lane Group Flow (vph)   | 2716   | 183  | 150  | 602  | 180  |
| v/c Ratio               | 1.34   | 0.27 | 0.27 | 1.06 | 0.20 |
| Control Delay           | 188.1  | 32.8 | 17.9 | 58.9 | 3.5  |
| Queue Delay             | 0.0    | 0.0  | 0.0  | 14.1 | 2.7  |
| Total Delay             | 188.1  | 32.8 | 17.9 | 73.0 | 6.2  |
| Queue Length 50th (ft)  | ~1155  | 115  | 49   | ~365 | 17   |
| Queue Length 95th (ft)  | m#1127 | 154  | 88   | m209 | m15  |
| Internal Link Dist (ft) | 53     | 253  |      |      | 175  |
| Turn Bay Length (ft)    |        |      | 125  | 70   |      |
| Base Capacity (vph)     | 2032   | 658  | 554  | 566  | 909  |
| Starvation Cap Reductn  | 0      | 0    | 0    | 26   | 614  |
| Spillback Cap Reductn   | 0      | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0      | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.34   | 0.28 | 0.27 | 1.11 | 0.61 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.






















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

17: Pack Saddle Pass & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

|                                   |  |    |  |  |  |  |  |  |    |    |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |  |
| Lane Configurations               |   |    |   |   |   |   |  |  |   |   |  |   |  |
| Traffic Volume (vph)              | 80  | 2341  | 100   | 0   | 0   | 0   | 0  | 146   | 123   | 524   | 160   | 0   |  |
| Future Volume (vph)               | 80  | 2341  | 100   | 0   | 0   | 0   | 0  | 146   | 123   | 524   | 160   | 0   |  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900   | 1900  | 1900  | 1900  | 1900  | 1900  |  |
| Total Lost time (s)               |   | 6.0   |   |   |   |   |  | 4.5   | 4.5   | 5.5   | 4.5   |   |  |
| Lane Util. Factor                 |   | 0.91  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |  |
| Frbp, ped/bikes                   |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |  |
| Flpb, ped/bikes                   |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |  |
| Frt                               |   | 0.99  |   |   |   |   |  | 1.00  | 0.85  | 1.00  | 1.00  |   |  |
| Flt Protected                     |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 0.95  | 1.00  |   |  |
| Satd. Flow (prot)                 |   | 5071  |   |   |   |   |  | 1900  | 1468  | 1719  | 1759  |   |  |
| Flt Permitted                     |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 0.55  | 1.00  |   |  |
| Satd. Flow (perm)                 |   | 5071  |   |   |   |   |  | 1900  | 1468  | 999   | 1759  |   |  |
| Peak-hour factor, PHF             | 0.81  | 0.94  | 0.79  | 0.92  | 0.92  | 0.92  | 0.92   | 0.80  | 0.82  | 0.87  | 0.89  | 0.92  |  |
| Adj. Flow (vph)                   | 99  | 2490  | 127   | 0   | 0   | 0   | 0  | 182   | 150   | 602   | 180   | 0   |  |
| RTOR Reduction (vph)              | 0   | 4   | 0   | 0   | 0   | 0   | 0  | 0   | 48  | 0   | 0   | 0   |  |
| Lane Group Flow (vph)             | 0   | 2712  | 0   | 0   | 0   | 0   | 0  | 183   | 102   | 602   | 180   | 0   |  |
| Confl. Bikes (#/hr)               |   |   | 3   |   |   |   |  |   | 1   |   |   |   |  |
| Heavy Vehicles (%)                | 10%   | 1%  | 0%  | 2%  | 2%  | 2%  | 2%   | 0%  | 10%   | 5%  | 8%  | 2%  |  |
| Turn Type                         | Split   | NA  |   |   |   |   |  | NA  | Prot  | D.P+P   | NA  |   |  |
| Protected Phases                  | 8   | 8   |   |   |   |   |  | 1 2 6   | 1 2 6   | 7   | 1 2 6 7   |   |  |
| Permitted Phases                  |   |   |   |   |   |   |  |   |   | 1 2 6   |   |   |  |
| Actuated Green, G (s)             |   | 54.0  |   |   |   |   |  | 47.5  | 47.5  | 65.0  | 69.5  |   |  |
| Effective Green, g (s)            |   | 54.0  |   |   |   |   |  | 42.0  | 42.0  | 60.5  | 64.0  |   |  |
| Actuated g/C Ratio                |   | 0.40  |   |   |   |   |  | 0.31  | 0.31  | 0.45  | 0.47  |   |  |
| Clearance Time (s)                |   | 6.0   |   |   |   |   |  |   |   | 5.5   |   |   |  |
| Vehicle Extension (s)             |   | 1.5   |   |   |   |   |  |   |   | 1.5   |   |   |  |
| Lane Grp Cap (vph)                |   | 2028  |   |   |   |   |  | 591   | 456   | 541   | 833   |   |  |
| v/s Ratio Prot                    |   | c0.53   |   |   |   |   |  | 0.10  | 0.07  | c0.14   | 0.10  |   |  |
| v/s Ratio Perm                    |   |   |   |   |   |   |  |   |   | c0.35   |   |   |  |
| v/c Ratio                         |   | 1.34  |   |   |   |   |  | 0.31  | 0.22  | 1.11  | 0.22  |   |  |
| Uniform Delay, d1                 |   | 40.5  |   |   |   |   |  | 35.4  | 34.4  | 37.6  | 20.8  |   |  |
| Progression Factor                |   | 1.01  |   |   |   |   |  | 1.00  | 1.00  | 0.69  | 0.20  |   |  |
| Incremental Delay, d2             |   | 154.2   |   |   |   |   |  | 0.1   | 0.1   | 53.5  | 0.0   |   |  |
| Delay (s)                         |   | 195.2   |   |   |   |   |  | 35.6  | 34.5  | 79.4  | 4.1   |   |  |
| Level of Service                  |   | F   |   |   |   |   |  | D   | C   | E   | A   |   |  |
| Approach Delay (s)                |   | 195.2   |   | 0.0   |   |   |  | 35.1  |   |   | 62.1  |   |  |
| Approach LOS                      |   | F   |   | A   |   |   |  | D   |   |   | E   |   |  |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |  |
| HCM 2000 Control Delay            |   |   | 154.1   |   | HCM 2000 Level of Service   |   |  |   |   | F   |   |   |  |
| HCM 2000 Volume to Capacity ratio |   |   | 1.28  |   |   |   |  |   |   |   |   |   |  |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |  |   |   | 26.0  |   |   |  |
| Intersection Capacity Utilization |   |   | 133.2%  |   | ICU Level of Service  |   |  |   |   | H   |   |   |  |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |  |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |  |





| Lane Group              | WBL   | WBT   | WBR  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|-------|-------|------|------|------|------|------|
| Lane Group Flow (vph)   | 653   | 1362  | 680  | 453  | 805  | 1327 | 241  |
| v/c Ratio               | 1.26  | 1.26  | 1.05 | 0.82 | 0.37 | 0.99 | 0.46 |
| Control Delay           | 172.1 | 167.4 | 84.4 | 22.7 | 8.1  | 78.1 | 22.4 |
| Queue Delay             | 0.3   | 0.2   | 0.0  | 34.2 | 2.2  | 0.0  | 0.0  |
| Total Delay             | 172.4 | 167.6 | 84.4 | 56.9 | 10.3 | 78.1 | 22.4 |
| Queue Length 50th (ft)  | ~875  | ~916  | ~588 | 81   | 67   | 477  | 82   |
| Queue Length 95th (ft)  | #1142 | #1062 | #836 | m82  | m68  | #587 | 138  |
| Internal Link Dist (ft) |       | 53    |      |      | 174  | 314  |      |
| Turn Bay Length (ft)    |       |       |      |      |      |      | 100  |
| Base Capacity (vph)     | 520   | 1079  | 647  | 553  | 2168 | 1335 | 522  |
| Starvation Cap Reductn  | 0     | 0     | 0    | 122  | 1183 | 0    | 0    |
| Spillback Cap Reductn   | 19    | 40    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.30  | 1.31  | 1.05 | 1.05 | 0.82 | 0.99 | 0.46 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

18: US 290 WBFR & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM



| Movement                          | EBL  | EBT  | EBR    | WBL   | WBT                       | WBR   | NBL   | NBT    | NBR  | SBL  | SBT   | SBR  |  |
|-----------------------------------|------|------|--------|-------|---------------------------|-------|-------|--------|------|------|-------|------|--|
| Lane Configurations               |      |      |        | ↙     | ↕                         | ↗     | ↙     | ↕      |      |      | ↕     | ↗    |  |
| Traffic Volume (vph)              | 0    | 0    | 0      | 1006  | 888                       | 660   | 385   | 733    | 0    | 0    | 1261  | 198  |  |
| Future Volume (vph)               | 0    | 0    | 0      | 1006  | 888                       | 660   | 385   | 733    | 0    | 0    | 1261  | 198  |  |
| 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   | 5.0    |      |      | 5.0   | 5.0  |  |
| Lane Util. Factor                 |      |      |        | 0.91  | 0.91                      | 1.00  | 1.00  | 0.95   |      |      | 0.91  | 1.00 |  |
| Frt                               |      |      |        | 1.00  | 1.00                      | 0.85  | 1.00  | 1.00   |      |      | 1.00  | 0.85 |  |
| Flt Protected                     |      |      |        | 0.95  | 0.98                      | 1.00  | 0.95  | 1.00   |      |      | 1.00  | 1.00 |  |
| Satd. Flow (prot)                 |      |      |        | 1626  | 3372                      | 1615  | 1805  | 3574   |      |      | 5136  | 1615 |  |
| Flt Permitted                     |      |      |        | 0.95  | 0.98                      | 1.00  | 0.95  | 1.00   |      |      | 1.00  | 1.00 |  |
| Satd. Flow (perm)                 |      |      |        | 1626  | 3372                      | 1615  | 1805  | 3574   |      |      | 5136  | 1615 |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92   | 0.94  | 0.94                      | 0.97  | 0.85  | 0.91   | 0.92 | 0.92 | 0.95  | 0.82 |  |
| Adj. Flow (vph)                   | 0    | 0    | 0      | 1070  | 945                       | 680   | 453   | 805    | 0    | 0    | 1327  | 241  |  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 0     | 0                         | 129   | 0     | 0      | 0    | 0    | 0     | 102  |  |
| Lane Group Flow (vph)             | 0    | 0    | 0      | 653   | 1362                      | 551   | 453   | 805    | 0    | 0    | 1327  | 139  |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%     | 1%    | 1%                        | 0%    | 0%    | 1%     | 2%   | 2%   | 1%    | 0%   |  |
| Turn Type                         |      |      |        | Perm  | NA                        | Perm  | Prot  | NA     |      |      | NA    | Perm |  |
| Protected Phases                  |      |      |        |       | 8 9                       |       | 4 13  | 1 4 13 |      |      | 1     |      |  |
| Permitted Phases                  |      |      |        | 8 9   |                           | 8 9   |       |        |      |      |       | 1    |  |
| Actuated Green, G (s)             |      |      |        | 49.0  | 49.0                      | 49.0  | 46.0  | 90.0   |      |      | 39.0  | 39.0 |  |
| Effective Green, g (s)            |      |      |        | 49.0  | 49.0                      | 49.0  | 41.0  | 90.0   |      |      | 39.0  | 39.0 |  |
| Actuated g/C Ratio                |      |      |        | 0.33  | 0.33                      | 0.33  | 0.27  | 0.60   |      |      | 0.26  | 0.26 |  |
| Clearance Time (s)                |      |      |        |       |                           |       |       |        |      |      | 5.0   | 5.0  |  |
| Vehicle Extension (s)             |      |      |        |       |                           |       |       |        |      |      | 1.0   | 1.0  |  |
| Lane Grp Cap (vph)                |      |      |        | 531   | 1101                      | 527   | 493   | 2144   |      |      | 1335  | 419  |  |
| v/s Ratio Prot                    |      |      |        |       |                           |       | c0.25 | 0.23   |      |      | c0.26 |      |  |
| v/s Ratio Perm                    |      |      |        | 0.40  | 0.40                      | 0.34  |       |        |      |      |       | 0.09 |  |
| v/c Ratio                         |      |      |        | 1.23  | 1.24                      | 1.05  | 0.92  | 0.38   |      |      | 0.99  | 0.33 |  |
| Uniform Delay, d1                 |      |      |        | 50.5  | 50.5                      | 50.5  | 52.9  | 15.5   |      |      | 55.4  | 44.9 |  |
| Progression Factor                |      |      |        | 1.00  | 1.00                      | 1.00  | 0.37  | 0.52   |      |      | 1.00  | 1.00 |  |
| Incremental Delay, d2             |      |      |        | 119.1 | 114.6                     | 51.5  | 8.4   | 0.0    |      |      | 23.0  | 0.2  |  |
| Delay (s)                         |      |      |        | 169.6 | 165.1                     | 102.0 | 27.8  | 8.1    |      |      | 78.4  | 45.1 |  |
| Level of Service                  |      |      |        | F     | F                         | F     | C     | A      |      |      | E     | D    |  |
| Approach Delay (s)                |      | 0.0  |        |       | 150.3                     |       |       | 15.2   |      |      | 73.3  |      |  |
| Approach LOS                      |      | A    |        |       | F                         |       |       | B      |      |      | E     |      |  |
| <b>Intersection Summary</b>       |      |      |        |       |                           |       |       |        |      |      |       |      |  |
| HCM 2000 Control Delay            |      |      | 97.6   |       | HCM 2000 Level of Service |       |       |        |      |      | F     |      |  |
| HCM 2000 Volume to Capacity ratio |      |      | 1.11   |       |                           |       |       |        |      |      |       |      |  |
| Actuated Cycle Length (s)         |      |      | 150.0  |       | Sum of lost time (s)      |       |       |        |      |      | 27.0  |      |  |
| Intersection Capacity Utilization |      |      | 137.3% |       | ICU Level of Service      |       |       |        |      |      | H     |      |  |
| Analysis Period (min)             |      |      | 15     |       |                           |       |       |        |      |      |       |      |  |
| c Critical Lane Group             |      |      |        |       |                           |       |       |        |      |      |       |      |  |



| Lane Group              | EBL   | EBT   | EBR   | NBT  | NBR   | SBL  | SBT  |
|-------------------------|-------|-------|-------|------|-------|------|------|
| Lane Group Flow (vph)   | 294   | 752   | 585   | 928  | 536   | 693  | 1835 |
| v/c Ratio               | 1.07  | 1.37  | 1.85  | 0.97 | 1.23  | 0.71 | 0.66 |
| Control Delay           | 131.0 | 224.4 | 420.9 | 82.5 | 155.1 | 5.8  | 2.2  |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 5.8  | 0.0   | 46.2 | 48.0 |
| Total Delay             | 131.0 | 224.4 | 420.9 | 88.3 | 155.1 | 51.9 | 50.1 |
| Queue Length 50th (ft)  | ~316  | ~510  | ~795  | 334  | ~500  | 119  | 32   |
| Queue Length 95th (ft)  | #474  | #642  | #1035 | #428 | #677  | m104 | m8   |
| Internal Link Dist (ft) |       | 62    |       | 300  |       |      | 174  |
| Turn Bay Length (ft)    |       |       |       |      | 100   |      |      |
| Base Capacity (vph)     | 276   | 548   | 317   | 958  | 436   | 979  | 2763 |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0    | 0     | 341  | 1114 |
| Spillback Cap Reductn   | 0     | 0     | 0     | 29   | 0     | 0    | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0    | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.07  | 1.37  | 1.85  | 1.00 | 1.23  | 1.09 | 1.11 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

19: Menchaca Road & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM

| Movement                          | EBL   | EBT   | EBR    | WBL  | WBT  | WBR  | NBL  | NBT   | NBR   | SBL   | SBT    | SBR                       |      |
|-----------------------------------|-------|-------|--------|------|------|------|------|-------|-------|-------|--------|---------------------------|------|
| Lane Configurations               |       |       |        |      |      |      |      |       |       |       |        |                           |      |
| Traffic Volume (vph)              | 253   | 722   | 538    | 0    | 0    | 0    | 0    | 863   | 461   | 589   | 1725   | 0                         |      |
| Future Volume (vph)               | 253   | 722   | 538    | 0    | 0    | 0    | 0    | 863   | 461   | 589   | 1725   | 0                         |      |
| 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    |      |      |      |      | 5.0   | 5.0   | 5.0   | 5.0    |                           |      |
| Lane Util. Factor                 | 1.00  | 0.95  | 1.00   |      |      |      |      | 0.91  | 1.00  | 1.00  | 0.95   |                           |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  | 0.99   |      |      |      |      | 1.00  | 0.99  | 1.00  | 1.00   |                           |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00   |      |      |      |      | 1.00  | 1.00  | 1.00  | 1.00   |                           |      |
| Frt                               | 1.00  | 1.00  | 0.85   |      |      |      |      | 1.00  | 0.85  | 1.00  | 1.00   |                           |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00   |      |      |      |      | 1.00  | 1.00  | 0.95  | 1.00   |                           |      |
| Satd. Flow (prot)                 | 1805  | 3574  | 1593   |      |      |      |      | 5136  | 1578  | 1770  | 3574   |                           |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00   |      |      |      |      | 1.00  | 1.00  | 0.95  | 1.00   |                           |      |
| Satd. Flow (perm)                 | 1805  | 3574  | 1593   |      |      |      |      | 5136  | 1578  | 1770  | 3574   |                           |      |
| Peak-hour factor, PHF             | 0.86  | 0.96  | 0.92   | 0.92 | 0.92 | 0.92 | 0.92 | 0.93  | 0.86  | 0.85  | 0.94   | 0.92                      |      |
| Adj. Flow (vph)                   | 294   | 752   | 585    | 0    | 0    | 0    | 0    | 928   | 536   | 693   | 1835   | 0                         |      |
| RTOR Reduction (vph)              | 0     | 0     | 74     | 0    | 0    | 0    | 0    | 0     | 142   | 0     | 0      | 0                         |      |
| Lane Group Flow (vph)             | 294   | 752   | 511    | 0    | 0    | 0    | 0    | 928   | 394   | 693   | 1835   | 0                         |      |
| Confl. Bikes (#/hr)               |       |       | 1      |      |      |      |      |       | 1     |       |        |                           |      |
| Heavy Vehicles (%)                | 0%    | 1%    | 0%     | 2%   | 2%   | 2%   | 2%   | 1%    | 1%    | 2%    | 1%     | 2%                        |      |
| Turn Type                         | Perm  | NA    | Perm   |      |      |      |      | NA    | Perm  | Prot  | NA     |                           |      |
| Protected Phases                  |       | 4 8   |        |      |      |      |      | 13    |       | 1 9   | 1 9 13 |                           |      |
| Permitted Phases                  | 4 8   |       | 4 8    |      |      |      |      |       | 13    |       |        |                           |      |
| Actuated Green, G (s)             | 23.0  | 23.0  | 23.0   |      |      |      |      | 28.0  | 28.0  | 83.0  | 116.0  |                           |      |
| Effective Green, g (s)            | 23.0  | 23.0  | 23.0   |      |      |      |      | 28.0  | 28.0  | 83.0  | 116.0  |                           |      |
| Actuated g/C Ratio                | 0.15  | 0.15  | 0.15   |      |      |      |      | 0.19  | 0.19  | 0.55  | 0.77   |                           |      |
| Clearance Time (s)                |       |       |        |      |      |      |      | 5.0   | 5.0   |       |        |                           |      |
| Vehicle Extension (s)             |       |       |        |      |      |      |      | 1.0   | 1.0   |       |        |                           |      |
| Lane Grp Cap (vph)                | 276   | 548   | 244    |      |      |      |      | 958   | 294   | 979   | 2763   |                           |      |
| v/s Ratio Prot                    |       | 0.21  |        |      |      |      |      | 0.18  |       | c0.39 | 0.51   |                           |      |
| v/s Ratio Perm                    | 0.16  |       | c0.32  |      |      |      |      |       | c0.25 |       |        |                           |      |
| v/c Ratio                         | 1.07  | 1.37  | 2.10   |      |      |      |      | 0.97  | 1.34  | 0.71  | 0.66   |                           |      |
| Uniform Delay, d1                 | 63.5  | 63.5  | 63.5   |      |      |      |      | 60.6  | 61.0  | 24.6  | 7.9    |                           |      |
| Progression Factor                | 1.00  | 1.00  | 1.00   |      |      |      |      | 1.00  | 1.00  | 0.21  | 0.25   |                           |      |
| Incremental Delay, d2             | 72.5  | 178.9 | 506.8  |      |      |      |      | 22.4  | 174.9 | 0.2   | 0.0    |                           |      |
| Delay (s)                         | 136.0 | 242.4 | 570.3  |      |      |      |      | 83.0  | 235.9 | 5.4   | 2.1    |                           |      |
| Level of Service                  | F     | F     | F      |      |      |      |      | F     | F     | A     | A      |                           |      |
| Approach Delay (s)                |       | 340.8 |        |      | 0.0  |      |      | 139.0 |       |       | 3.0    |                           |      |
| Approach LOS                      |       | F     |        |      | A    |      |      | F     |       |       | A      |                           |      |
| <b>Intersection Summary</b>       |       |       |        |      |      |      |      |       |       |       |        |                           |      |
| HCM 2000 Control Delay            |       |       | 136.4  |      |      |      |      |       |       |       |        | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |       |       | 1.17   |      |      |      |      |       |       |       |        |                           |      |
| Actuated Cycle Length (s)         |       |       | 150.0  |      |      |      |      |       |       |       |        | Sum of lost time (s)      | 27.0 |
| Intersection Capacity Utilization |       |       | 137.3% |      |      |      |      |       |       |       |        | ICU Level of Service      | H    |
| Analysis Period (min)             |       |       | 15     |      |      |      |      |       |       |       |        |                           |      |

c Critical Lane Group

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 27.3 |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 63   | 125  | 208  | 19   | 116  | 6    | 192  | 19   | 48   | 5    | 28   | 37   |
| Future Vol, veh/h        | 63   | 125  | 208  | 19   | 116  | 6    | 192  | 19   | 48   | 5    | 28   | 37   |
| Conflicting Peds, #/hr   | 14   | 0    | 9    | 9    | 0    | 14   | 6    | 0    | 11   | 11   | 0    | 6    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 68   | 87   | 87   | 50   | 76   | 50   | 80   | 75   | 60   | 60   | 56   | 75   |
| Heavy Vehicles, %        | 0    | 0    | 7    | 0    | 0    | 0    | 5    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 93   | 144  | 239  | 38   | 153  | 12   | 240  | 25   | 80   | 8    | 50   | 49   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-----|-----|
| Conflicting Flow All | 179    | 0 | 0 | 392    | 0 | 0 | 750    | 714 | 284 | 762    | 827 | 179 |
| Stage 1              | -      | - | - | -      | - | - | 459    | 459 | -   | 249    | 249 | -   |
| Stage 2              | -      | - | - | -      | - | - | 291    | 255 | -   | 513    | 578 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.15   | 6.5 | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.15   | 5.5 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.15   | 5.5 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.545  | 4   | 3.3 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1409   | - | - | 1178   | - | - | 324    | 359 | 760 | 324    | 309 | 869 |
| Stage 1              | -      | - | - | -      | - | - | 576    | 570 | -   | 759    | 704 | -   |
| Stage 2              | -      | - | - | -      | - | - | 710    | 700 | -   | 548    | 504 | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |     |     |        |     |     |
| Mov Cap-1 Maneuver   | 1390   | - | - | 1168   | - | - | ~ 234  | 309 | 746 | 240    | 266 | 853 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | ~ 234  | 309 | -   | 240    | 266 | -   |
| Stage 1              | -      | - | - | -      | - | - | 521    | 515 | -   | 683    | 670 | -   |
| Stage 2              | -      | - | - | -      | - | - | 593    | 666 | -   | 420    | 456 | -   |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|----|--|--|
| HCM Control Delay, s | 1.5 |  |  | 1.5 |  |  | 80.8 |  |  | 18 |  |  |
| HCM LOS              |     |  |  |     |  |  | F    |  |  | C  |  |  |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 234   | 557   | 1390  | -   | -   | 1168  | -   | -   | 384   |
| HCM Lane V/C Ratio    | 1.026 | 0.189 | 0.067 | -   | -   | 0.033 | -   | -   | 0.28  |
| HCM Control Delay (s) | 110.6 | 13    | 7.8   | 0   | -   | 8.2   | 0   | -   | 18    |
| HCM Lane LOS          | F     | B     | A     | A   | -   | A     | A   | -   | C     |
| HCM 95th %tile Q(veh) | 9.9   | 0.7   | 0.2   | -   | -   | 0.1   | -   | -   | 1.1   |

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

21: S Lamar Blvd & Driveway A  
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 2-2031 Site+Forecasted PM



| Movement                          | EBL   | EBR  | NBL  | NBT                  | SBT  | SBR  |      |      |      |  |
|-----------------------------------|-------|------|------|----------------------|------|------|------|------|------|--|
| Lane Configurations               |       |      |      |                      |      |      |      |      |      |  |
| Traffic Volume (veh/h)            | 0     | 0    | 0    | 2430                 | 2059 | 105  |      |      |      |  |
| Future Volume (Veh/h)             | 0     | 0    | 0    | 2430                 | 2059 | 105  |      |      |      |  |
| Sign Control                      | Stop  |      |      | Free                 |      | Free |      |      |      |  |
| Grade                             | 0%    |      |      | 0%                   |      | 0%   |      |      |      |  |
| Peak Hour Factor                  | 0.92  | 0.92 | 0.92 | 0.92                 | 0.92 | 0.92 |      |      |      |  |
| Hourly flow rate (vph)            | 0     | 0    | 0    | 2641                 | 2238 | 114  |      |      |      |  |
| <b>Pedestrians</b>                |       |      |      |                      |      |      |      |      |      |  |
| Lane Width (ft)                   |       |      |      |                      |      |      |      |      |      |  |
| Walking Speed (ft/s)              |       |      |      |                      |      |      |      |      |      |  |
| Percent Blockage                  |       |      |      |                      |      |      |      |      |      |  |
| Right turn flare (veh)            |       |      |      |                      |      |      |      |      |      |  |
| Median type                       |       |      |      | None                 | None |      |      |      |      |  |
| Median storage (veh)              |       |      |      |                      |      |      |      |      |      |  |
| Upstream signal (ft)              |       |      |      | 408                  | 941  |      |      |      |      |  |
| pX, platoon unblocked             | 0.70  |      |      |                      |      |      |      |      |      |  |
| vC, conflicting volume            | 2955  | 616  | 2352 |                      |      |      |      |      |      |  |
| vC1, stage 1 conf vol             |       |      |      |                      |      |      |      |      |      |  |
| vC2, stage 2 conf vol             |       |      |      |                      |      |      |      |      |      |  |
| vCu, unblocked vol                | 1659  | 616  | 2352 |                      |      |      |      |      |      |  |
| tC, single (s)                    | 6.8   | 6.9  | 4.1  |                      |      |      |      |      |      |  |
| tC, 2 stage (s)                   |       |      |      |                      |      |      |      |      |      |  |
| tF (s)                            | 3.5   | 3.3  | 2.2  |                      |      |      |      |      |      |  |
| p0 queue free %                   | 100   | 100  | 100  |                      |      |      |      |      |      |  |
| cM capacity (veh/h)               | 62    | 433  | 205  |                      |      |      |      |      |      |  |
| Direction, Lane #                 | EB 1  | NB 1 | NB 2 | NB 3                 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |  |
| Volume Total                      | 0     | 660  | 660  | 660                  | 660  | 639  | 639  | 639  | 434  |  |
| Volume Left                       | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |
| Volume Right                      | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 114  |  |
| cSH                               | 1700  | 1700 | 1700 | 1700                 | 1700 | 1700 | 1700 | 1700 | 1700 |  |
| Volume to Capacity                | 0.00  | 0.39 | 0.39 | 0.39                 | 0.39 | 0.38 | 0.38 | 0.38 | 0.26 |  |
| Queue Length 95th (ft)            | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |
| Control Delay (s)                 | 0.0   | 0.0  | 0.0  | 0.0                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| Lane LOS                          | A     |      |      |                      |      |      |      |      |      |  |
| Approach Delay (s)                | 0.0   | 0.0  |      |                      |      |      | 0.0  |      |      |  |
| Approach LOS                      | A     |      |      |                      |      |      |      |      |      |  |
| <b>Intersection Summary</b>       |       |      |      |                      |      |      |      |      |      |  |
| Average Delay                     | 0.0   |      |      |                      |      |      |      |      |      |  |
| Intersection Capacity Utilization | 38.5% |      |      | ICU Level of Service |      |      |      |      | A    |  |
| Analysis Period (min)             | 15    |      |      |                      |      |      |      |      |      |  |

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 19.6 |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    |      |      | ↖↖↖  |      |
| Traffic Vol, veh/h       | 0    | 229  | 0    | 0    | 1829 | 21   |
| Future Vol, veh/h        | 0    | 229  | 0    | 0    | 1829 | 21   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | -    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 249  | 0    | 0    | 1988 | 23   |

| Major/Minor          | Minor2  | Major2 |
|----------------------|---------|--------|
| Conflicting Flow All | - 1006  | - 0    |
| Stage 1              | - -     | - -    |
| Stage 2              | - -     | - -    |
| Critical Hdwy        | - 7.14  | - -    |
| Critical Hdwy Stg 1  | - -     | - -    |
| Critical Hdwy Stg 2  | - -     | - -    |
| Follow-up Hdwy       | - 3.92  | - -    |
| Pot Cap-1 Maneuver   | 0 ~ 206 | - -    |
| Stage 1              | 0 -     | - -    |
| Stage 2              | 0 -     | - -    |
| Platoon blocked, %   |         | - -    |
| Mov Cap-1 Maneuver   | - ~ 206 | - -    |
| Mov Cap-2 Maneuver   | - -     | - -    |
| Stage 1              | - -     | - -    |
| Stage 2              | - -     | - -    |

| Approach             | EB    | SB |
|----------------------|-------|----|
| HCM Control Delay, s | 177.5 | 0  |
| HCM LOS              | F     |    |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-----|
| Capacity (veh/h)      | 206   | -   | -   |
| HCM Lane V/C Ratio    | 1.208 | -   | -   |
| HCM Control Delay (s) | 177.5 | -   | -   |
| HCM Lane LOS          | F     | -   | -   |
| HCM 95th %tile Q(veh) | 12.7  | -   | -   |

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

| Intersection             |      |       |      |      |      |      |
|--------------------------|------|-------|------|------|------|------|
| Int Delay, s/veh         | 6.2  |       |      |      |      |      |
| Movement                 | WBL  | WBR   | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↗ ↑↑↑ |      |      |      |      |
| Traffic Vol, veh/h       | 0    | 199   | 1377 | 114  | 0    | 0    |
| Future Vol, veh/h        | 0    | 199   | 1377 | 114  | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0     | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop  | Free | Free | Free | Free |
| RT Channelized           | -    | None  | -    | None | -    | None |
| Storage Length           | -    | 0     | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -     | 0    | -    | -    | -    |
| Grade, %                 | 0    | -     | 0    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92    | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2     | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 216   | 1497 | 124  | 0    | 0    |

| Major/Minor          | Minor1 | Major1 |   |
|----------------------|--------|--------|---|
| Conflicting Flow All | -      | 811    | 0 |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |
| Critical Hdwy        | -      | 7.14   | - |
| Critical Hdwy Stg 1  | -      | -      | - |
| Critical Hdwy Stg 2  | -      | -      | - |
| Follow-up Hdwy       | -      | 3.92   | - |
| Pot Cap-1 Maneuver   | 0      | 277    | - |
| Stage 1              | 0      | -      | - |
| Stage 2              | 0      | -      | - |
| Platoon blocked, %   |        |        | - |
| Mov Cap-1 Maneuver   | -      | 277    | - |
| Mov Cap-2 Maneuver   | -      | -      | - |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |

| Approach             | WB   | NB |
|----------------------|------|----|
| HCM Control Delay, s | 52.3 | 0  |
| HCM LOS              | F    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 |
|-----------------------|-----|----------|
| Capacity (veh/h)      | -   | - 277    |
| HCM Lane V/C Ratio    | -   | - 0.781  |
| HCM Control Delay (s) | -   | - 52.3   |
| HCM Lane LOS          | -   | - F      |
| HCM 95th %tile Q(veh) | -   | - 6      |





| Lane Group              | WBL  | WBR   | NBT    | NBR  | SBL   | SBT  |
|-------------------------|------|-------|--------|------|-------|------|
| Lane Group Flow (vph)   | 563  | 740   | 2953   | 468  | 466   | 1378 |
| v/c Ratio               | 0.62 | 1.26  | 1.50   | 0.50 | 2.04  | 0.60 |
| Control Delay           | 47.1 | 168.0 | 248.9  | 3.9  | 514.8 | 14.3 |
| Queue Delay             | 0.0  | 0.0   | 0.0    | 0.0  | 0.0   | 0.0  |
| Total Delay             | 47.1 | 168.0 | 248.9  | 3.9  | 514.8 | 14.3 |
| Queue Length 50th (ft)  | 224  | ~816  | ~1891  | 38   | ~329  | 332  |
| Queue Length 95th (ft)  | 287  | #1010 | m#1641 | m8   | #374  | 394  |
| Internal Link Dist (ft) | 497  |       | 121    |      |       | 322  |
| Turn Bay Length (ft)    |      | 125   |        |      | 150   |      |
| Base Capacity (vph)     | 906  | 586   | 1966   | 935  | 228   | 2310 |
| Starvation Cap Reductn  | 0    | 0     | 0      | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0     | 0      | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0     | 0      | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.62 | 1.26  | 1.50   | 0.50 | 2.04  | 0.60 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

1: S Lamar Blvd & W Oltorf Street  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement               | WBL   | WBR   | NBT   | NBR  | SBL   | SBT   |
|------------------------|-------|-------|-------|------|-------|-------|
| Lane Configurations    | ↰↱    | ↱     | ↕↕    | ↱    | ↰↱    | ↕↕    |
| Traffic Volume (vph)   | 507   | 644   | 2540  | 374  | 368   | 1337  |
| Future Volume (vph)    | 507   | 644   | 2540  | 374  | 368   | 1337  |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900 | 1900  | 1900  |
| Total Lost time (s)    | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   |
| Lane Util. Factor      | 0.97  | 1.00  | 0.95  | 1.00 | 0.97  | 0.95  |
| Frpb, ped/bikes        | 1.00  | 1.00  | 1.00  | 0.98 | 1.00  | 1.00  |
| Flpb, ped/bikes        | 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  |
| Flt Protected          | 0.95  | 1.00  | 1.00  | 1.00 | 0.95  | 1.00  |
| Satd. Flow (prot)      | 3400  | 1583  | 3539  | 1525 | 3433  | 3505  |
| Flt Permitted          | 0.95  | 1.00  | 1.00  | 1.00 | 0.95  | 1.00  |
| Satd. Flow (perm)      | 3400  | 1583  | 3539  | 1525 | 3433  | 3505  |
| Peak-hour factor, PHF  | 0.90  | 0.87  | 0.86  | 0.80 | 0.79  | 0.97  |
| Adj. Flow (vph)        | 563   | 740   | 2953  | 468  | 466   | 1378  |
| RTOR Reduction (vph)   | 0     | 1     | 0     | 88   | 0     | 0     |
| Lane Group Flow (vph)  | 563   | 739   | 2953  | 380  | 466   | 1378  |
| Confl. Peds. (#/hr)    |       | 4     |       | 2    | 2     |       |
| Confl. Bikes (#/hr)    |       | 1     |       | 5    |       |       |
| Heavy Vehicles (%)     | 3%    | 2%    | 2%    | 4%   | 2%    | 3%    |
| Turn Type              | Prot  | pt+ov | NA    | Perm | Prot  | NA    |
| Protected Phases       | 4     | 1 4   | 2     |      | 1     | 6     |
| Permitted Phases       |       | 4     |       | 2    |       |       |
| Actuated Green, G (s)  | 36.0  | 50.0  | 75.0  | 75.0 | 9.0   | 89.0  |
| Effective Green, g (s) | 36.0  | 50.0  | 75.0  | 75.0 | 9.0   | 89.0  |
| Actuated g/C Ratio     | 0.27  | 0.37  | 0.56  | 0.56 | 0.07  | 0.66  |
| Clearance Time (s)     | 5.0   |       | 5.0   | 5.0  | 5.0   | 5.0   |
| Vehicle Extension (s)  | 1.0   |       | 1.0   | 1.0  | 1.0   | 1.0   |
| Lane Grp Cap (vph)     | 906   | 586   | 1966  | 847  | 228   | 2310  |
| v/s Ratio Prot         | 0.17  | c0.47 | c0.83 |      | c0.14 | 0.39  |
| v/s Ratio Perm         |       |       |       | 0.25 |       |       |
| v/c Ratio              | 0.62  | 1.26  | 1.50  | 0.45 | 2.04  | 0.60  |
| Uniform Delay, d1      | 43.5  | 42.5  | 30.0  | 17.8 | 63.0  | 12.9  |
| Progression Factor     | 1.00  | 1.00  | 0.66  | 0.33 | 1.00  | 1.00  |
| Incremental Delay, d2  | 3.2   | 131.1 | 226.8 | 0.5  | 484.7 | 1.1   |
| Delay (s)              | 46.7  | 173.6 | 246.7 | 6.4  | 547.7 | 14.1  |
| Level of Service       | D     | F     | F     | A    | F     | B     |
| Approach Delay (s)     | 118.8 |       | 213.8 |      |       | 148.9 |
| Approach LOS           | F     |       | F     |      |       | F     |

| Intersection Summary              |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 176.7  | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio | 1.50   |                           |      |
| Actuated Cycle Length (s)         | 135.0  | Sum of lost time (s)      | 15.0 |
| Intersection Capacity Utilization | 118.9% | ICU Level of Service      | H    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NBL  | NBT    | NBR  | SBL   | SBT   |
|-------------------------|------|------|------|------|------|--------|------|-------|-------|
| Lane Group Flow (vph)   | 149  | 58   | 270  | 157  | 220  | 2768   | 116  | 57    | 2217  |
| v/c Ratio               | 0.80 | 0.14 | 0.62 | 0.77 | 0.77 | 1.12   | 0.11 | 1.08  | 1.18  |
| Control Delay           | 75.3 | 42.3 | 29.4 | 72.7 | 39.5 | 75.0   | 3.6  | 176.9 | 121.4 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0    | 0.0  | 0.0   | 0.0   |
| Total Delay             | 75.3 | 42.3 | 29.4 | 72.7 | 39.5 | 75.0   | 3.6  | 176.9 | 121.4 |
| Queue Length 50th (ft)  | 113  | 42   | 107  | 117  | 139  | ~1467  | 13   | ~54   | ~1209 |
| Queue Length 95th (ft)  | 136  | 59   | 160  | 175  | m117 | m#1208 | m9   | #86   | #1147 |
| Internal Link Dist (ft) |      | 215  |      | 74   |      | 201    |      |       | 588   |
| Turn Bay Length (ft)    | 75   |      | 50   |      | 50   |        | 125  | 50    |       |
| Base Capacity (vph)     | 187  | 506  | 513  | 299  | 285  | 2476   | 1019 | 53    | 1875  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0      | 0    | 0     | 0     |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0      | 0    | 0     | 0     |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0      | 0    | 0     | 0     |
| Reduced v/c Ratio       | 0.80 | 0.11 | 0.53 | 0.53 | 0.77 | 1.12   | 0.11 | 1.08  | 1.18  |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

2: S Lamar Blvd & Bluebonnet Lane  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement                          | EBL   | EBT  | EBR    | WBL  | WBT  | WBR                       | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|-----------------------------------|-------|------|--------|------|------|---------------------------|-------|-------|------|-------|-------|------|
| Lane Configurations               | ↖     | ↑    | ↗      |      | ↖    |                           | ↖     | ↑↑    | ↗    | ↖     | ↑↗    |      |
| Traffic Volume (vph)              | 110   | 41   | 221    | 0    | 50   | 70                        | 200   | 2270  | 94   | 35    | 1811  | 4    |
| Future Volume (vph)               | 110   | 41   | 221    | 0    | 50   | 70                        | 200   | 2270  | 94   | 35    | 1811  | 4    |
| 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  |                           | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   |      |
| Lane Util. Factor                 | 1.00  | 1.00 | 1.00   |      | 1.00 |                           | 1.00  | 0.95  | 1.00 | 1.00  | 0.95  |      |
| Frpb, ped/bikes                   | 1.00  | 1.00 | 0.98   |      | 0.99 |                           | 1.00  | 1.00  | 0.96 | 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  |      |
| Frt                               | 1.00  | 1.00 | 0.85   |      | 0.91 |                           | 1.00  | 1.00  | 0.85 | 1.00  | 1.00  |      |
| Flt Protected                     | 0.95  | 1.00 | 1.00   |      | 1.00 |                           | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |      |
| Satd. Flow (prot)                 | 1769  | 1900 | 1554   |      | 1720 |                           | 1787  | 3505  | 1412 | 1703  | 3469  |      |
| Flt Permitted                     | 0.29  | 1.00 | 1.00   |      | 1.00 |                           | 0.05  | 1.00  | 1.00 | 0.05  | 1.00  |      |
| Satd. Flow (perm)                 | 541   | 1900 | 1554   |      | 1720 |                           | 96    | 3505  | 1412 | 98    | 3469  |      |
| Peak-hour factor, PHF             | 0.74  | 0.71 | 0.82   | 0.87 | 0.86 | 0.71                      | 0.91  | 0.82  | 0.81 | 0.61  | 0.82  | 0.50 |
| Adj. Flow (vph)                   | 149   | 58   | 270    | 0    | 58   | 99                        | 220   | 2768  | 116  | 57    | 2209  | 8    |
| RTOR Reduction (vph)              | 0     | 0    | 106    | 0    | 20   | 0                         | 0     | 0     | 21   | 0     | 0     | 0    |
| Lane Group Flow (vph)             | 149   | 58   | 164    | 0    | 137  | 0                         | 220   | 2768  | 95   | 57    | 2217  | 0    |
| Confl. Peds. (#/hr)               | 1     |      | 4      | 4    |      | 1                         | 7     |       | 6    | 6     |       | 7    |
| Confl. Bikes (#/hr)               |       |      |        |      |      | 1                         |       |       |      |       |       | 1    |
| Heavy Vehicles (%)                | 2%    | 0%   | 2%     | 3%   | 0%   | 0%                        | 1%    | 3%    | 10%  | 6%    | 4%    | 0%   |
| Turn Type                         | pm+pt | NA   | Perm   |      | NA   |                           | pm+pt | NA    | Perm | Perm  | NA    |      |
| Protected Phases                  | 7     | 4    |        |      | 8    |                           | 5     | 2     |      |       |       | 6    |
| Permitted Phases                  | 4     |      | 4      |      |      |                           | 2     |       | 2    | 6     |       |      |
| Actuated Green, G (s)             | 28.6  | 28.6 | 28.6   |      | 14.6 |                           | 95.4  | 95.4  | 95.4 | 73.0  | 73.0  |      |
| Effective Green, g (s)            | 28.6  | 28.6 | 28.6   |      | 14.6 |                           | 95.4  | 95.4  | 95.4 | 73.0  | 73.0  |      |
| Actuated g/C Ratio                | 0.21  | 0.21 | 0.21   |      | 0.11 |                           | 0.71  | 0.71  | 0.71 | 0.54  | 0.54  |      |
| Clearance Time (s)                | 6.0   | 6.0  | 6.0    |      | 6.0  |                           | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   |      |
| Vehicle Extension (s)             | 2.0   | 2.0  | 2.0    |      | 2.0  |                           | 1.0   | 1.0   | 1.0  | 1.0   | 1.0   |      |
| Lane Grp Cap (vph)                | 187   | 402  | 329    |      | 186  |                           | 285   | 2476  | 997  | 52    | 1875  |      |
| v/s Ratio Prot                    | c0.05 | 0.03 |        |      | 0.08 |                           | 0.10  | c0.79 |      |       | c0.64 |      |
| v/s Ratio Perm                    | c0.12 |      | 0.11   |      |      |                           | 0.44  |       | 0.07 | 0.58  |       |      |
| v/c Ratio                         | 0.80  | 0.14 | 0.50   |      | 0.74 |                           | 0.77  | 1.12  | 0.09 | 1.10  | 1.18  |      |
| Uniform Delay, d1                 | 48.3  | 43.3 | 46.9   |      | 58.4 |                           | 44.3  | 19.8  | 6.2  | 31.0  | 31.0  |      |
| Progression Factor                | 1.00  | 1.00 | 1.00   |      | 1.00 |                           | 1.06  | 0.99  | 1.16 | 1.22  | 1.19  |      |
| Incremental Delay, d2             | 19.3  | 0.1  | 0.4    |      | 12.4 |                           | 1.9   | 53.7  | 0.0  | 145.3 | 87.2  |      |
| Delay (s)                         | 67.6  | 43.3 | 47.3   |      | 70.7 |                           | 48.7  | 73.2  | 7.2  | 183.3 | 124.1 |      |
| Level of Service                  | E     | D    | D      |      | E    |                           | D     | E     | A    | F     | F     |      |
| Approach Delay (s)                |       | 53.2 |        |      | 70.7 |                           |       | 69.0  |      |       | 125.5 |      |
| Approach LOS                      |       | D    |        |      | E    |                           |       | E     |      |       | F     |      |
| <b>Intersection Summary</b>       |       |      |        |      |      |                           |       |       |      |       |       |      |
| HCM 2000 Control Delay            |       |      | 89.2   |      |      | HCM 2000 Level of Service |       |       | F    |       |       |      |
| HCM 2000 Volume to Capacity ratio |       |      | 1.14   |      |      |                           |       |       |      |       |       |      |
| Actuated Cycle Length (s)         |       |      | 135.0  |      |      | Sum of lost time (s)      |       |       | 22.0 |       |       |      |
| Intersection Capacity Utilization |       |      | 109.4% |      |      | ICU Level of Service      |       |       | H    |       |       |      |
| Analysis Period (min)             |       |      | 15     |      |      |                           |       |       |      |       |       |      |
| c Critical Lane Group             |       |      |        |      |      |                           |       |       |      |       |       |      |



| Lane Group              | WBR   | NBT   | NBR  | SBL   | SBT  |
|-------------------------|-------|-------|------|-------|------|
| Lane Group Flow (vph)   | 1129  | 2280  | 10   | 612   | 1789 |
| v/c Ratio               | 1.39  | 1.06  | 0.01 | 1.19  | 0.79 |
| Control Delay           | 219.1 | 42.2  | 1.0  | 122.3 | 18.7 |
| Queue Delay             | 0.0   | 9.3   | 0.0  | 0.0   | 0.9  |
| Total Delay             | 219.1 | 51.5  | 1.0  | 122.3 | 19.6 |
| Queue Length 50th (ft)  | ~747  | ~1148 | 0    | ~662  | 377  |
| Queue Length 95th (ft)  | #898  | 410   | m0   | m#517 | m332 |
| Internal Link Dist (ft) |       | 324   |      |       | 498  |
| Turn Bay Length (ft)    |       |       |      | 100   |      |
| Base Capacity (vph)     | 813   | 2159  | 990  | 516   | 2262 |
| Starvation Cap Reductn  | 0     | 45    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0     | 0     | 0    | 0     | 219  |
| Storage Cap Reductn     | 0     | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 1.39  | 1.08  | 0.01 | 1.19  | 0.88 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

3: S Lamar Blvd & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

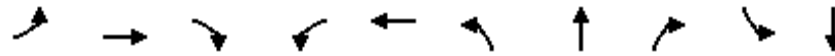
Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement                          | WBL   | WBR   | NBT    | NBR  | SBL                       | SBT   |
|-----------------------------------|-------|-------|--------|------|---------------------------|-------|
| Lane Configurations               |       | ↔↔    | ↕↕     | ↗    | ↘                         | ↕↕    |
| Traffic Volume (vph)              | 0     | 1073  | 1710   | 6    | 520                       | 1592  |
| Future Volume (vph)               | 0     | 1073  | 1710   | 6    | 520                       | 1592  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900   | 1900 | 1900                      | 1900  |
| Total Lost time (s)               |       | 6.0   | 6.0    | 6.0  | 6.0                       | 6.0   |
| Lane Util. Factor                 |       | 0.88  | 0.95   | 1.00 | 1.00                      | 0.95  |
| Frbp, ped/bikes                   |       | 1.00  | 1.00   | 0.98 | 1.00                      | 1.00  |
| Flpb, ped/bikes                   |       | 1.00  | 1.00   | 1.00 | 1.00                      | 1.00  |
| Frt                               |       | 0.85  | 1.00   | 0.85 | 1.00                      | 1.00  |
| Flt Protected                     |       | 1.00  | 1.00   | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |       | 2787  | 3471   | 1589 | 1787                      | 3471  |
| Flt Permitted                     |       | 1.00  | 1.00   | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |       | 2787  | 3471   | 1589 | 1787                      | 3471  |
| Peak-hour factor, PHF             | 0.92  | 0.95  | 0.75   | 0.60 | 0.85                      | 0.89  |
| Adj. Flow (vph)                   | 0     | 1129  | 2280   | 10   | 612                       | 1789  |
| RTOR Reduction (vph)              | 0     | 9     | 0      | 2    | 0                         | 0     |
| Lane Group Flow (vph)             | 0     | 1120  | 2280   | 8    | 612                       | 1789  |
| Confl. Peds. (#/hr)               |       | 1     |        | 4    | 4                         |       |
| Heavy Vehicles (%)                | 2%    | 2%    | 4%     | 0%   | 1%                        | 4%    |
| Turn Type                         |       | pt+ov | NA     | Perm | Prot                      | NA    |
| Protected Phases                  |       | 1 4   | 2 3    |      | 1 4                       | 1 2   |
| Permitted Phases                  |       |       |        | 2 3  |                           |       |
| Actuated Green, G (s)             |       | 39.0  | 84.0   | 84.0 | 39.0                      | 88.0  |
| Effective Green, g (s)            |       | 39.0  | 84.0   | 84.0 | 39.0                      | 88.0  |
| Actuated g/C Ratio                |       | 0.29  | 0.62   | 0.62 | 0.29                      | 0.65  |
| Clearance Time (s)                |       |       |        |      |                           |       |
| Vehicle Extension (s)             |       |       |        |      |                           |       |
| Lane Grp Cap (vph)                |       | 805   | 2159   | 988  | 516                       | 2262  |
| v/s Ratio Prot                    |       | c0.40 | c0.66  |      | 0.34                      | c0.52 |
| v/s Ratio Perm                    |       |       |        | 0.00 |                           |       |
| v/c Ratio                         |       | 1.39  | 1.06   | 0.01 | 1.19                      | 0.79  |
| Uniform Delay, d1                 |       | 48.0  | 25.5   | 9.7  | 48.0                      | 16.9  |
| Progression Factor                |       | 1.00  | 0.39   | 0.14 | 0.84                      | 1.06  |
| Incremental Delay, d2             |       | 184.0 | 29.7   | 0.0  | 85.7                      | 0.3   |
| Delay (s)                         |       | 232.0 | 39.6   | 1.4  | 125.9                     | 18.2  |
| Level of Service                  |       | F     | D      | A    | F                         | B     |
| Approach Delay (s)                | 232.0 |       | 39.4   |      |                           | 45.7  |
| Approach LOS                      | F     |       | D      |      |                           | D     |
| <b>Intersection Summary</b>       |       |       |        |      |                           |       |
| HCM 2000 Control Delay            |       |       | 79.3   |      | HCM 2000 Level of Service | E     |
| HCM 2000 Volume to Capacity ratio |       |       | 1.30   |      |                           |       |
| Actuated Cycle Length (s)         |       |       | 135.0  |      | Sum of lost time (s)      | 24.0  |
| Intersection Capacity Utilization |       |       | 102.7% |      | ICU Level of Service      | G     |
| Analysis Period (min)             |       |       | 15     |      |                           |       |
| c Critical Lane Group             |       |       |        |      |                           |       |

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
Queues

Brodie Oaks Center TIA  
Imps-Phase 3-2036 Site+Forecasted AM



| Lane Group              | EBL   | EBT  | EBR  | WBL   | WBT  | NBL   | NBT  | NBR  | SBL   | SBT  |
|-------------------------|-------|------|------|-------|------|-------|------|------|-------|------|
| Lane Group Flow (vph)   | 233   | 200  | 316  | 161   | 223  | 231   | 2107 | 72   | 66    | 1784 |
| v/c Ratio               | 1.10  | 0.53 | 0.77 | 0.93  | 0.32 | 1.75  | 0.93 | 0.07 | 2.54  | 0.87 |
| Control Delay           | 140.2 | 54.3 | 44.3 | 105.6 | 47.1 | 380.0 | 8.4  | 0.0  | 778.8 | 7.7  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 18.7 | 0.0  | 0.0   | 0.1  |
| Total Delay             | 140.2 | 54.3 | 44.3 | 105.6 | 47.1 | 380.0 | 27.0 | 0.0  | 778.8 | 7.8  |
| Queue Length 50th (ft)  | ~230  | 159  | 166  | 140   | 87   | ~301  | 291  | 0    | ~96   | 381  |
| Queue Length 95th (ft)  | #223  | 228  | 271  | #167  | 112  | m#278 | 165  | m0   | #115  | 359  |
| Internal Link Dist (ft) |       | 257  |      |       | 238  |       | 436  |      |       | 324  |
| Turn Bay Length (ft)    | 90    |      |      | 100   |      | 125   |      | 160  | 100   |      |
| Base Capacity (vph)     | 212   | 376  | 413  | 173   | 706  | 132   | 2262 | 1013 | 26    | 2043 |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0     | 15   |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0     | 0    | 0     | 227  | 0    | 0     | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 1.10  | 0.53 | 0.77 | 0.93  | 0.32 | 1.75  | 1.04 | 0.07 | 2.54  | 0.88 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

| Movement                          | EBL   | EBT  | EBR    | WBL   | WBT  | WBR  | NBL                       | NBT   | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|------|--------|-------|------|------|---------------------------|-------|------|-------|------|------|
| Lane Configurations               |       |      |        |       |      |      |                           |       |      |       |      |      |
| Traffic Volume (vph)              | 147   | 172  | 278    | 106   | 172  | 8    | 196                       | 1559  | 67   | 37    | 1461 | 87   |
| Future Volume (vph)               | 147   | 172  | 278    | 106   | 172  | 8    | 196                       | 1559  | 67   | 37    | 1461 | 87   |
| 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   | 6.0  | 6.0   | 6.0  |      |
| Lane Util. Factor                 | 1.00  | 1.00 | 1.00   | 1.00  | 0.95 |      | 1.00                      | 0.95  | 1.00 | 1.00  | 0.95 |      |
| Frpb, ped/bikes                   | 1.00  | 1.00 | 0.98   | 1.00  | 1.00 |      | 1.00                      | 1.00  | 0.98 | 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  | 1.00 | 0.85   | 1.00  | 0.99 |      | 1.00                      | 1.00  | 0.85 | 1.00  | 0.99 |      |
| Flt Protected                     | 0.95  | 1.00 | 1.00   | 0.95  | 1.00 |      | 0.95                      | 1.00  | 1.00 | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1748  | 1881 | 1583   | 1797  | 3523 |      | 1787                      | 3471  | 1516 | 1805  | 3441 |      |
| Flt Permitted                     | 0.58  | 1.00 | 1.00   | 0.46  | 1.00 |      | 0.95                      | 1.00  | 1.00 | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 | 1063  | 1881 | 1583   | 864   | 3523 |      | 1787                      | 3471  | 1516 | 1805  | 3441 |      |
| Peak-hour factor, PHF             | 0.63  | 0.86 | 0.88   | 0.66  | 0.80 | 0.95 | 0.85                      | 0.74  | 0.93 | 0.56  | 0.88 | 0.70 |
| Adj. Flow (vph)                   | 233   | 200  | 316    | 161   | 215  | 8    | 231                       | 2107  | 72   | 66    | 1660 | 124  |
| RTOR Reduction (vph)              | 0     | 0    | 97     | 0     | 2    | 0    | 0                         | 0     | 25   | 0     | 4    | 0    |
| Lane Group Flow (vph)             | 233   | 200  | 219    | 161   | 221  | 0    | 231                       | 2107  | 47   | 66    | 1780 | 0    |
| Confl. Peds. (#/hr)               | 2     |      | 4      | 4     |      | 2    | 2                         |       | 4    | 4     |      | 2    |
| Confl. Bikes (#/hr)               |       |      | 1      |       |      |      |                           |       | 1    |       |      | 2    |
| Heavy Vehicles (%)                | 3%    | 1%   | 0%     | 0%    | 1%   | 25%  | 1%                        | 4%    | 4%   | 0%    | 4%   | 0%   |
| Turn Type                         | Perm  | NA   | Perm   | Perm  | NA   |      | Prot                      | NA    | Perm | Prot  | NA   |      |
| Protected Phases                  |       | 8    |        |       | 8    |      | 5                         | 5 6   |      | 7     | 6 7  |      |
| Permitted Phases                  | 8     |      | 8      | 8     |      |      |                           |       | 5 6  |       |      |      |
| Actuated Green, G (s)             | 27.0  | 27.0 | 27.0   | 27.0  | 27.0 |      | 10.0                      | 88.0  | 88.0 | 2.0   | 80.0 |      |
| Effective Green, g (s)            | 27.0  | 27.0 | 27.0   | 27.0  | 27.0 |      | 10.0                      | 88.0  | 88.0 | 2.0   | 80.0 |      |
| Actuated g/C Ratio                | 0.20  | 0.20 | 0.20   | 0.20  | 0.20 |      | 0.07                      | 0.65  | 0.65 | 0.01  | 0.59 |      |
| 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  |      | 1.0                       |       |      | 1.0   |      |      |
| Lane Grp Cap (vph)                | 212   | 376  | 316    | 172   | 704  |      | 132                       | 2262  | 988  | 26    | 2039 |      |
| v/s Ratio Prot                    |       | 0.11 |        |       | 0.06 |      | c0.13                     | c0.61 |      | c0.04 | 0.52 |      |
| v/s Ratio Perm                    | c0.22 |      | 0.14   | 0.19  |      |      |                           |       | 0.03 |       |      |      |
| v/c Ratio                         | 1.10  | 0.53 | 0.69   | 0.94  | 0.31 |      | 1.75                      | 0.93  | 0.05 | 2.54  | 0.87 |      |
| Uniform Delay, d1                 | 54.0  | 48.3 | 50.2   | 53.2  | 46.1 |      | 62.5                      | 20.8  | 8.4  | 66.5  | 23.2 |      |
| Progression Factor                | 1.00  | 1.00 | 1.00   | 1.00  | 1.00 |      | 1.23                      | 0.32  | 0.01 | 0.67  | 0.17 |      |
| Incremental Delay, d2             | 90.8  | 5.3  | 11.9   | 53.5  | 1.2  |      | 340.3                     | 0.9   | 0.0  | 757.3 | 2.8  |      |
| Delay (s)                         | 144.8 | 53.6 | 62.0   | 106.7 | 47.3 |      | 417.0                     | 7.6   | 0.1  | 801.9 | 6.7  |      |
| Level of Service                  | F     | D    | E      | F     | D    |      | F                         | A     | A    | F     | A    |      |
| Approach Delay (s)                |       | 85.5 |        |       | 72.2 |      |                           | 46.6  |      |       | 35.1 |      |
| Approach LOS                      |       | F    |        |       | E    |      |                           | D     |      |       | D    |      |
| <b>Intersection Summary</b>       |       |      |        |       |      |      |                           |       |      |       |      |      |
| HCM 2000 Control Delay            |       |      | 49.9   |       |      |      | HCM 2000 Level of Service |       |      | D     |      |      |
| HCM 2000 Volume to Capacity ratio |       |      | 1.12   |       |      |      |                           |       |      |       |      |      |
| Actuated Cycle Length (s)         |       |      | 135.0  |       |      |      | Sum of lost time (s)      |       |      | 24.0  |      |      |
| Intersection Capacity Utilization |       |      | 106.5% |       |      |      | ICU Level of Service      |       |      | G     |      |      |
| Analysis Period (min)             |       |      | 15     |       |      |      |                           |       |      |       |      |      |
| c Critical Lane Group             |       |      |        |       |      |      |                           |       |      |       |      |      |



























| Lane Group              | EBT  | WBL   | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  |
|-------------------------|------|-------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph)   | 131  | 238   | 7    | 306  | 33   | 2521  | 275  | 296   | 1780 |
| v/c Ratio               | 0.42 | 0.98  | 0.02 | 0.84 | 0.30 | 1.11  | 0.26 | 2.55  | 0.71 |
| Control Delay           | 45.3 | 104.7 | 43.0 | 61.5 | 19.2 | 79.5  | 4.3  | 730.9 | 5.2  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| Total Delay             | 45.3 | 104.7 | 43.0 | 61.5 | 19.2 | 79.5  | 4.3  | 730.9 | 5.2  |
| Queue Length 50th (ft)  | 88   | 209   | 5    | 210  | 12   | ~1322 | 33   | ~386  | 96   |
| Queue Length 95th (ft)  | 96   | 207   | 12   | 258  | 25   | 760   | 39   | m#464 | m202 |
| Internal Link Dist (ft) | 270  |       | 212  |      |      | 208   |      |       | 469  |
| Turn Bay Length (ft)    |      | 120   |      | 100  | 95   |       |      | 125   |      |
| Base Capacity (vph)     | 313  | 244   | 394  | 363  | 111  | 2280  | 1060 | 116   | 2508 |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.42 | 0.98  | 0.02 | 0.84 | 0.30 | 1.11  | 0.26 | 2.55  | 0.71 |

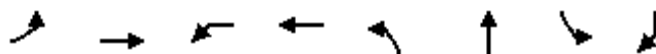
**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

5: S Lamar Blvd & Private Driveway/Panther Trail  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

|                              |  |  |  |  |  |   |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|--|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR  | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 41  | 10  | 27  | 152   | 4   | 236  | 23  | 1765  | 195   | 225   | 1625  | 25  |
| Future Volume (veh/h)        | 41  | 10  | 27  | 152   | 4   | 236  | 23  | 1765  | 195   | 225   | 1625  | 25  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18   | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.99  |   | 0.99  | 0.99  |   | 0.99   | 1.00  |   | 1.00  | 1.00  |   | 0.97  |
| 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  |
| Adj Sat Flow, veh/h/ln       | 1900  | 1852  | 1900  | 1827  | 1900  | 1810   | 1900  | 1863  | 1881  | 1810  | 1843  | 1900  |
| Adj Flow Rate, veh/h         | 73  | 16  | 42  | 238   | 7   | 306  | 33  | 2521  | 275   | 296   | 1747  | 33  |
| Adj No. of Lanes             | 0   | 1   | 0   | 1   | 1   | 1  | 1   | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 0.56  | 0.62  | 0.65  | 0.64  | 0.60  | 0.77   | 0.69  | 0.70  | 0.71  | 0.76  | 0.93  | 0.75  |
| Percent Heavy Veh, %         | 0   | 0   | 8   | 4   | 0   | 5  | 0   | 2   | 1   | 5   | 3   | 8   |
| Cap, veh/h                   | 177   | 44  | 85  | 305   | 394   | 316  | 172   | 2281  | 1027  | 117   | 2525  | 48  |
| Arrive On Green              | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21   | 0.64  | 0.64  | 0.64  | 0.04  | 0.72  | 0.72  |
| Sat Flow, veh/h              | 656   | 211   | 409   | 1306  | 1900  | 1525   | 271   | 3539  | 1594  | 1723  | 3514  | 66  |
| Grp Volume(v), veh/h         | 131   | 0   | 0   | 238   | 7   | 306  | 33  | 2521  | 275   | 296   | 868   | 912   |
| Grp Sat Flow(s),veh/h/ln     | 1276  | 0   | 0   | 1306  | 1900  | 1525   | 271   | 1770  | 1594  | 1723  | 1751  | 1829  |
| Q Serve(g_s), s              | 10.3  | 0.0   | 0.0   | 14.4  | 0.4   | 26.9   | 10.5  | 87.0  | 10.0  | 5.0   | 37.4  | 37.8  |
| Cycle Q Clear(g_c), s        | 11.8  | 0.0   | 0.0   | 26.3  | 0.4   | 26.9   | 38.3  | 87.0  | 10.0  | 5.0   | 37.4  | 37.8  |
| Prop In Lane                 | 0.56  |   | 0.32  | 1.00  |   | 1.00   | 1.00  |   | 1.00  | 1.00  |   | 0.04  |
| Lane Grp Cap(c), veh/h       | 306   | 0   | 0   | 305   | 394   | 316  | 172   | 2281  | 1027  | 117   | 1258  | 1314  |
| V/C Ratio(X)                 | 0.43  | 0.00  | 0.00  | 0.78  | 0.02  | 0.97   | 0.19  | 1.11  | 0.27  | 2.53  | 0.69  | 0.69  |
| Avail Cap(c_a), veh/h        | 306   | 0   | 0   | 305   | 394   | 316  | 172   | 2281  | 1027  | 117   | 1258  | 1314  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 46.9  | 0.0   | 0.0   | 53.4  | 42.6  | 53.1   | 24.2  | 24.0  | 10.3  | 45.2  | 10.6  | 10.7  |
| Incr Delay (d2), s/veh       | 4.3   | 0.0   | 0.0   | 17.8  | 0.1   | 43.0   | 2.5   | 54.6  | 0.6   | 711.4   | 3.1   | 3.0   |
| 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     | 4.7   | 0.0   | 0.0   | 10.3  | 0.2   | 15.1   | 0.9   | 59.4  | 4.5   | 27.5  | 18.9  | 19.9  |
| LnGrp Delay(d),s/veh         | 51.2  | 0.0   | 0.0   | 71.2  | 42.6  | 96.1   | 26.7  | 78.6  | 11.0  | 756.6   | 13.7  | 13.7  |
| LnGrp LOS                    | D   |   |   | E   | D   | F  | C   | F   | B   | F   | B   | B   |
| Approach Vol, veh/h          |   | 131   |   |   | 551   |  |   | 2829  |   |   | 2076  |   |
| Approach Delay, s/veh        |   | 51.2  |   |   | 84.7  |  |   | 71.4  |   |   | 119.6   |   |
| Approach LOS                 |   | D   |   |   | F   |  |   | E   |   |   | F   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6  | 7   | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6  |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 10.0  | 92.0  |   | 33.0  |   | 102.0  |   | 33.0  |   |   |   |   |
| Change Period (Y+Rc), s      | 5.0   | 5.0   |   | 5.0   |   | 5.0  |   | 5.0   |   |   |   |   |
| Max Green Setting (Gmax), s  | 5.0   | 87.0  |   | 28.0  |   | 97.0   |   | 28.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 7.0   | 89.0  |   | 13.8  |   | 39.8   |   | 28.9  |   |   |   |   |
| Green Ext Time (p_c), s      | 0.0   | 0.0   |   | 0.3   |   | 5.2  |   | 0.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |  |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 90.2  |   |   |  |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | F   |   |   |  |   |   |   |   |   |   |



| Lane Group              | EBL   | EBT  | WBL  | WBT  | NBL   | NBT   | SBL   | SBR  |
|-------------------------|-------|------|------|------|-------|-------|-------|------|
| Lane Group Flow (vph)   | 464   | 300  | 134  | 169  | 556   | 3045  | 160   | 1653 |
| v/c Ratio               | 1.72  | 0.66 | 0.79 | 0.37 | 1.90  | 1.25  | 1.10  | 0.85 |
| Control Delay           | 369.6 | 26.5 | 69.4 | 14.0 | 450.7 | 147.9 | 156.5 | 32.8 |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Delay             | 369.6 | 26.5 | 69.4 | 14.0 | 450.7 | 147.9 | 156.5 | 32.8 |
| Queue Length 50th (ft)  | ~575  | 91   | 87   | 24   | ~370  | ~1177 | ~152  | 437  |
| Queue Length 95th (ft)  | #334  | 72   | 105  | 28   | #369  | #891  | #187  | 516  |
| Internal Link Dist (ft) |       | 165  |      | 155  |       | 606   |       |      |
| Turn Bay Length (ft)    |       |      |      |      |       |       | 160   |      |
| Base Capacity (vph)     | 270   | 455  | 170  | 455  | 292   | 2433  | 146   | 1938 |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0     | 0     | 0     | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0     | 0     | 0     | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0     | 0     | 0     | 0    |
| Reduced v/c Ratio       | 1.72  | 0.66 | 0.79 | 0.37 | 1.90  | 1.25  | 1.10  | 0.85 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

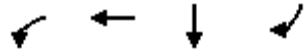
6: S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement               | EBL   | EBT   | EBR2 | WBL   | WBT  | WBR  | NBL   | NBT   | NBR  | SBL   | SBR  | SBR2 |
|------------------------|-------|-------|------|-------|------|------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↖     | ↗     |      | ↖     | ↗    |      | ↖↗    | ↑↑↑   |      | ↖     | ↗↗↗  |      |
| Traffic Volume (vph)   | 246   | 11    | 217  | 91    | 22   | 78   | 406   | 2161  | 69   | 107   | 1242 | 169  |
| Future Volume (vph)    | 246   | 11    | 217  | 91    | 22   | 78   | 406   | 2161  | 69   | 107   | 1242 | 169  |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 6.5   | 6.5   |      | 6.5   | 6.5  |      | 7.5   | 5.5   |      | 7.0   | 5.5  |      |
| Lane Util. Factor      | 1.00  | 1.00  |      | 1.00  | 1.00 |      | 0.97  | 0.91  |      | 1.00  | 0.64 |      |
| Frbp, ped/bikes        | 1.00  | 1.00  |      | 1.00  | 0.99 |      | 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 |      |
| Frt                    | 1.00  | 0.86  |      | 1.00  | 0.88 |      | 1.00  | 0.99  |      | 1.00  | 0.85 |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 1.00 |      | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1804  | 1632  |      | 1770  | 1656 |      | 3303  | 5053  |      | 1736  | 3939 |      |
| Flt Permitted          | 0.62  | 1.00  |      | 0.21  | 1.00 |      | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1179  | 1632  |      | 387   | 1656 |      | 3303  | 5053  |      | 1736  | 3939 |      |
| Peak-hour factor, PHF  | 0.53  | 0.62  | 0.77 | 0.68  | 0.62 | 0.58 | 0.73  | 0.74  | 0.55 | 0.67  | 0.90 | 0.62 |
| Adj. Flow (vph)        | 464   | 18    | 282  | 134   | 35   | 134  | 556   | 2920  | 125  | 160   | 1380 | 273  |
| RTOR Reduction (vph)   | 0     | 148   | 0    | 0     | 106  | 0    | 0     | 4     | 0    | 0     | 75   | 0    |
| Lane Group Flow (vph)  | 464   | 152   | 0    | 134   | 63   | 0    | 556   | 3041  | 0    | 160   | 1578 | 0    |
| Confl. Peds. (#/hr)    | 1     |       |      |       |      |      | 1     | 3     |      | 1     | 1    | 3    |
| Confl. Bikes (#/hr)    |       |       |      |       |      |      | 1     |       |      |       |      | 2    |
| Heavy Vehicles (%)     | 0%    | 0%    | 0%   | 2%    | 0%   | 0%   | 6%    | 2%    | 0%   | 4%    | 2%   | 20%  |
| Turn Type              | pm+pt | NA    |      | pm+pt | NA   |      | Prot  | NA    |      | Prot  | Prot |      |
| Protected Phases       | 7     | 4     |      | 3     | 8    |      | 5     | 2     |      | 1     | 6    |      |
| Permitted Phases       | 4     |       |      | 8     |      |      |       |       |      |       |      |      |
| Actuated Green, G (s)  | 28.0  | 24.5  |      | 34.0  | 27.5 |      | 11.5  | 62.5  |      | 11.0  | 61.5 |      |
| Effective Green, g (s) | 28.0  | 24.5  |      | 34.0  | 27.5 |      | 11.5  | 62.5  |      | 11.0  | 61.5 |      |
| Actuated g/C Ratio     | 0.22  | 0.19  |      | 0.26  | 0.21 |      | 0.09  | 0.48  |      | 0.08  | 0.47 |      |
| Clearance Time (s)     | 6.5   | 6.5   |      | 6.5   | 6.5  |      | 7.5   | 5.5   |      | 7.0   | 5.5  |      |
| Vehicle Extension (s)  | 1.0   | 3.0   |      | 3.0   | 3.0  |      | 3.0   | 3.0   |      | 2.0   | 2.0  |      |
| Lane Grp Cap (vph)     | 270   | 307   |      | 170   | 350  |      | 292   | 2429  |      | 146   | 1863 |      |
| v/s Ratio Prot         | c0.05 | 0.09  |      | 0.04  | 0.04 |      | c0.17 | c0.60 |      | 0.09  | 0.40 |      |
| v/s Ratio Perm         | c0.32 |       |      | c0.17 |      |      |       |       |      |       |      |      |
| v/c Ratio              | 1.72  | 0.50  |      | 0.79  | 0.18 |      | 1.90  | 1.25  |      | 1.10  | 0.85 |      |
| Uniform Delay, d1      | 50.7  | 47.2  |      | 42.4  | 42.0 |      | 59.2  | 33.8  |      | 59.5  | 30.1 |      |
| Progression Factor     | 1.00  | 1.00  |      | 1.00  | 1.00 |      | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 338.6 | 5.6   |      | 21.0  | 1.1  |      | 419.4 | 117.0 |      | 102.5 | 5.0  |      |
| Delay (s)              | 389.2 | 52.9  |      | 63.4  | 43.2 |      | 478.7 | 150.8 |      | 162.0 | 35.1 |      |
| Level of Service       | F     | D     |      | E     | D    |      | F     | F     |      | F     | D    |      |
| Approach Delay (s)     |       | 257.1 |      |       | 52.1 |      |       | 201.4 |      |       |      |      |
| Approach LOS           |       | F     |      |       | D    |      |       | F     |      |       |      |      |

| Intersection Summary              |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 157.6  | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio | 1.43   |                           |      |
| Actuated Cycle Length (s)         | 130.0  | Sum of lost time (s)      | 26.0 |
| Intersection Capacity Utilization | 121.6% | ICU Level of Service      | H    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |



| Lane Group              | WBL  | WBT   | SBT  | SBR  |
|-------------------------|------|-------|------|------|
| Lane Group Flow (vph)   | 713  | 2311  | 977  | 413  |
| v/c Ratio               | 0.67 | 1.05  | 0.59 | 0.26 |
| Control Delay           | 9.1  | 45.1  | 44.9 | 0.4  |
| Queue Delay             | 0.0  | 0.2   | 0.2  | 0.0  |
| Total Delay             | 9.1  | 45.3  | 45.1 | 0.4  |
| Queue Length 50th (ft)  | 600  | ~1219 | 218  | 0    |
| Queue Length 95th (ft)  | m136 | m890  | 245  | 0    |
| Internal Link Dist (ft) |      | 23    | 453  |      |
| Turn Bay Length (ft)    |      |       |      |      |
| Base Capacity (vph)     | 1059 | 2211  | 1644 | 1564 |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0    |
| Spillback Cap Reductn   | 2    | 1     | 165  | 0    |
| Storage Cap Reductn     | 0    | 0     | 0    | 0    |
| Reduced v/c Ratio       | 0.67 | 1.05  | 0.66 | 0.26 |

**Intersection Summary**

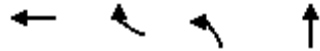
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

7: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement                          | EBL  | EBT  | EBR   | WBL     | WBT     | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR                         |
|-----------------------------------|------|------|-------|---------|---------|------|------|------|------|------|-------|-----------------------------|
| Lane Configurations               |      |      |       | ↖       | ↕       |      |      |      |      |      | ↑↑↑↑  | ↗                           |
| Traffic Volume (vph)              | 0    | 0    | 0     | 665     | 2076    | 0    | 0    | 0    | 0    | 0    | 850   | 363                         |
| Future Volume (vph)               | 0    | 0    | 0     | 665     | 2076    | 0    | 0    | 0    | 0    | 0    | 850   | 363                         |
| 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   | 4.0                         |
| Lane Util. Factor                 |      |      |       | 0.91    | 0.91    |      |      |      |      |      | 0.86  | 1.00                        |
| Frbp, ped/bikes                   |      |      |       | 1.00    | 1.00    |      |      |      |      |      | 1.00  | 0.99                        |
| Flpb, ped/bikes                   |      |      |       | 1.00    | 1.00    |      |      |      |      |      | 1.00  | 1.00                        |
| Frt                               |      |      |       | 1.00    | 1.00    |      |      |      |      |      | 1.00  | 0.85                        |
| Flt Protected                     |      |      |       | 0.95    | 1.00    |      |      |      |      |      | 1.00  | 1.00                        |
| Satd. Flow (prot)                 |      |      |       | 1595    | 3383    |      |      |      |      |      | 6166  | 1564                        |
| Flt Permitted                     |      |      |       | 0.95    | 1.00    |      |      |      |      |      | 1.00  | 1.00                        |
| Satd. Flow (perm)                 |      |      |       | 1595    | 3383    |      |      |      |      |      | 6166  | 1564                        |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92  | 0.84    | 0.93    | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.87  | 0.88                        |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 792     | 2232    | 0    | 0    | 0    | 0    | 0    | 977   | 412                         |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 37      | 37      | 0    | 0    | 0    | 0    | 0    | 0     | 0                           |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 676     | 2274    | 0    | 0    | 0    | 0    | 0    | 977   | 413                         |
| Confl. Peds. (#/hr)               |      |      |       |         |         |      |      |      |      |      |       | 1                           |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%    | 3%      | 2%      | 2%   | 2%   | 2%   | 2%   | 2%   | 6%    | 2%                          |
| Turn Type                         |      |      |       | custom  | NA      |      |      |      |      |      | NA    | Free                        |
| Protected Phases                  |      |      |       | 1 2 4 8 | 1 2 4 8 |      |      |      |      |      | 5 6 7 |                             |
| Permitted Phases                  |      |      |       | 3       | 3       |      |      |      |      |      |       | Free                        |
| Actuated Green, G (s)             |      |      |       | 79.0    | 79.0    |      |      |      |      |      | 40.0  | 135.0                       |
| Effective Green, g (s)            |      |      |       | 79.0    | 79.0    |      |      |      |      |      | 40.0  | 135.0                       |
| Actuated g/C Ratio                |      |      |       | 0.59    | 0.59    |      |      |      |      |      | 0.30  | 1.00                        |
| Clearance Time (s)                |      |      |       |         |         |      |      |      |      |      |       |                             |
| Vehicle Extension (s)             |      |      |       |         |         |      |      |      |      |      |       |                             |
| Lane Grp Cap (vph)                |      |      |       | 1004    | 2130    |      |      |      |      |      | 1826  | 1564                        |
| v/s Ratio Prot                    |      |      |       | 0.35    | 0.55    |      |      |      |      |      | 0.16  |                             |
| v/s Ratio Perm                    |      |      |       | 0.07    | 0.12    |      |      |      |      |      |       | 0.26                        |
| v/c Ratio                         |      |      |       | 0.67    | 1.07    |      |      |      |      |      | 0.54  | 0.26                        |
| Uniform Delay, d1                 |      |      |       | 19.2    | 28.0    |      |      |      |      |      | 39.7  | 0.0                         |
| Progression Factor                |      |      |       | 0.66    | 0.98    |      |      |      |      |      | 1.00  | 1.00                        |
| Incremental Delay, d2             |      |      |       | 0.1     | 31.6    |      |      |      |      |      | 1.1   | 0.4                         |
| Delay (s)                         |      |      |       | 12.7    | 59.0    |      |      |      |      |      | 40.9  | 0.4                         |
| Level of Service                  |      |      |       | B       | E       |      |      |      |      |      | D     | A                           |
| Approach Delay (s)                |      | 0.0  |       |         | 48.1    |      |      | 0.0  |      |      | 28.8  |                             |
| Approach LOS                      |      | A    |       |         | D       |      |      | A    |      |      | C     |                             |
| <b>Intersection Summary</b>       |      |      |       |         |         |      |      |      |      |      |       |                             |
| HCM 2000 Control Delay            |      |      | 42.0  |         |         |      |      |      |      |      |       | HCM 2000 Level of Service D |
| HCM 2000 Volume to Capacity ratio |      |      | 1.18  |         |         |      |      |      |      |      |       |                             |
| Actuated Cycle Length (s)         |      |      | 135.0 |         |         |      |      |      |      | 40.0 |       | Sum of lost time (s)        |
| Intersection Capacity Utilization |      |      | 95.7% |         |         |      |      |      |      |      |       | ICU Level of Service F      |
| Analysis Period (min)             |      |      | 15    |         |         |      |      |      |      |      |       |                             |
| c Critical Lane Group             |      |      |       |         |         |      |      |      |      |      |       |                             |















| Lane Group              | WBT   | WBR   | NBL  | NBT  |
|-------------------------|-------|-------|------|------|
| Lane Group Flow (vph)   | 2373  | 965   | 431  | 1357 |
| v/c Ratio               | 1.31  | 1.48  | 0.48 | 0.50 |
| Control Delay           | 177.3 | 245.2 | 3.1  | 5.2  |
| Queue Delay             | 0.5   | 0.0   | 7.0  | 6.8  |
| Total Delay             | 177.8 | 245.2 | 10.1 | 12.0 |
| Queue Length 50th (ft)  | ~971  | ~1042 | 8    | 27   |
| Queue Length 95th (ft)  | m#793 | m#798 | m27  | m37  |
| Internal Link Dist (ft) | 133   |       |      | 295  |
| Turn Bay Length (ft)    |       |       |      |      |
| Base Capacity (vph)     | 1808  | 654   | 901  | 2701 |
| Starvation Cap Reductn  | 0     | 0     | 415  | 1292 |
| Spillback Cap Reductn   | 260   | 0     | 97   | 145  |
| Storage Cap Reductn     | 0     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.53  | 1.48  | 0.89 | 0.96 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |  |
| Lane Configurations               |   |   |   |   | ↑↑↑   | ↑   | ↑  | ↑↑↑   |   |   |   |   |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 0   | 2254  | 762   | 498  | 933   | 0   | 0   | 0   | 0   |  |
| Future Volume (vph)               | 0   | 0   | 0   | 0   | 2254  | 762   | 498  | 933   | 0   | 0   | 0   | 0   |  |
| 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   |   |   |   |   |  |
| Lane Util. Factor                 |   |   |   |   | 0.91  | 1.00  | 0.86   | 0.86  |   |   |   |   |  |
| Frbp, ped/bikes                   |   |   |   |   | 1.00  | 0.99  | 1.00   | 1.00  |   |   |   |   |  |
| Flpb, ped/bikes                   |   |   |   |   | 1.00  | 1.00  | 1.00   | 1.00  |   |   |   |   |  |
| Frt                               |   |   |   |   | 1.00  | 0.85  | 1.00   | 1.00  |   |   |   |   |  |
| Flt Protected                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (prot)                 |   |   |   |   | 5085  | 1504  | 1552   | 4792  |   |   |   |   |  |
| Flt Permitted                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (perm)                 |   |   |   |   | 5085  | 1504  | 1552   | 4792  |   |   |   |   |  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.92  | 0.95  | 0.79  | 0.89   | 0.76  | 0.92  | 0.92  | 0.92  | 0.92  |  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 0   | 2373  | 965   | 560  | 1228  | 0   | 0   | 0   | 0   |  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 123   | 45   | 45  | 0   | 0   | 0   | 0   |  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 0   | 2373  | 842   | 386  | 1312  | 0   | 0   | 0   | 0   |  |
| Confl. Peds. (#/hr)               |   |   |   |   |   | 1   |  |   |   |   |   |   |  |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 2%  | 2%  | 6%  | 0%   | 2%  | 2%  | 2%  | 2%  | 2%  |  |
| Turn Type                         |   |   |   |   | NA  | Perm  | custom   | NA  |   |   |   |   |  |
| Protected Phases                  |   |   |   |   | 1 7 8   |   | 2 3 4 5  | 2 3 4 5   |   |   |   |   |  |
| Permitted Phases                  |   |   |   |   |   | 1 7 8   | 6  | 6   |   |   |   |   |  |
| Actuated Green, G (s)             |   |   |   |   | 48.0  | 48.0  | 69.0   | 69.0  |   |   |   |   |  |
| Effective Green, g (s)            |   |   |   |   | 46.0  | 46.0  | 67.0   | 67.0  |   |   |   |   |  |
| Actuated g/C Ratio                |   |   |   |   | 0.34  | 0.34  | 0.50   | 0.50  |   |   |   |   |  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Lane Grp Cap (vph)                |   |   |   |   | 1732  | 512   | 839  | 2591  |   |   |   |   |  |
| v/s Ratio Prot                    |   |   |   |   | 0.47  |   | 0.19   | c0.21   |   |   |   |   |  |
| v/s Ratio Perm                    |   |   |   |   |   | c0.56   | 0.05   | 0.06  |   |   |   |   |  |
| v/c Ratio                         |   |   |   |   | 1.37  | 1.65  | 0.46   | 0.51  |   |   |   |   |  |
| Uniform Delay, d1                 |   |   |   |   | 44.5  | 44.5  | 22.2   | 22.9  |   |   |   |   |  |
| Progression Factor                |   |   |   |   | 0.92  | 0.88  | 0.20   | 0.30  |   |   |   |   |  |
| Incremental Delay, d2             |   |   |   |   | 169.0   | 296.2   | 0.0  | 0.0   |   |   |   |   |  |
| Delay (s)                         |   |   |   |   | 209.8   | 335.4   | 4.6  | 6.8   |   |   |   |   |  |
| Level of Service                  |   |   |   |   | F   | F   | A  | A   |   |   |   |   |  |
| Approach Delay (s)                |   | 0.0   |   |   | 246.1   |   |  | 6.2   |   |   | 0.0   |   |  |
| Approach LOS                      |   | A   |   |   | F   |   |  | A   |   |   | A   |   |  |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |  |
| HCM 2000 Control Delay            |   |   | 162.4   |   | HCM 2000 Level of Service   |   |  |   | F   |   |   |   |  |
| HCM 2000 Volume to Capacity ratio |   |   | 1.19  |   |   |   |  |   |   |   |   |   |  |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |  |   | 40.0  |   |   |   |  |
| Intersection Capacity Utilization |   |   | 93.0%   |   | ICU Level of Service  |   |  |   | F   |   |   |   |  |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |  |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |  |





| Lane Group              | EBT   | SBL  | SBT  |
|-------------------------|-------|------|------|
| Lane Group Flow (vph)   | 1156  | 439  | 1371 |
| v/c Ratio               | 1.12  | 0.43 | 0.46 |
| Control Delay           | 114.6 | 5.3  | 9.6  |
| Queue Delay             | 0.1   | 2.7  | 4.3  |
| Total Delay             | 114.7 | 8.0  | 13.9 |
| Queue Length 50th (ft)  | ~426  | 212  | 275  |
| Queue Length 95th (ft)  | #522  | m276 | m341 |
| Internal Link Dist (ft) | 69    |      | 291  |
| Turn Bay Length (ft)    |       |      |      |
| Base Capacity (vph)     | 1034  | 1013 | 3005 |
| Starvation Cap Reductn  | 0     | 445  | 1536 |
| Spillback Cap Reductn   | 18    | 71   | 94   |
| Storage Cap Reductn     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.14  | 0.77 | 0.93 |

**Intersection Summary**

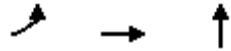
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL     | SBT     | SBR  |  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|------|------|------|---------|---------|------|--|
| Lane Configurations               |      | ↑↑↑   |       |      |                           |      |      |      |      | ↘       | ↑↑↑     |      |  |
| Traffic Volume (vph)              | 0    | 1052  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 449     | 1126    | 0    |  |
| Future Volume (vph)               | 0    | 1052  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 449     | 1126    | 0    |  |
| 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     |      |  |
| Lane Util. Factor                 |      | 0.91  |       |      |                           |      |      |      |      | 0.86    | 0.86    |      |  |
| Frbp, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flpb, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Frt                               |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flt Protected                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 1.00    |      |  |
| Satd. Flow (prot)                 |      | 4988  |       |      |                           |      |      |      |      | 1437    | 4777    |      |  |
| Flt Permitted                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 1.00    |      |  |
| Satd. Flow (perm)                 |      | 4988  |       |      |                           |      |      |      |      | 1437    | 4777    |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.91  | 0.88  | 0.92 | 0.92                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.87    | 0.87    | 0.92 |  |
| Adj. Flow (vph)                   | 0    | 1156  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 516     | 1294    | 0    |  |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 139     | 39      | 0    |  |
| Lane Group Flow (vph)             | 0    | 1156  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 300     | 1332    | 0    |  |
| Confl. Bikes (#/hr)               |      |       | 1     |      |                           |      |      |      |      |         |         |      |  |
| Heavy Vehicles (%)                | 2%   | 4%    | 2%    | 2%   | 2%                        | 2%   | 2%   | 2%   | 2%   | 8%      | 2%      | 2%   |  |
| Turn Type                         |      | NA    |       |      |                           |      |      |      |      | custom  | NA      |      |  |
| Protected Phases                  |      | 4 5   |       |      |                           |      |      |      |      | 1 2 6 8 | 1 2 6 8 |      |  |
| Permitted Phases                  |      |       |       |      |                           |      |      |      |      | 7       | 7       |      |  |
| Actuated Green, G (s)             |      | 28.0  |       |      |                           |      |      |      |      | 76.0    | 76.0    |      |  |
| Effective Green, g (s)            |      | 28.0  |       |      |                           |      |      |      |      | 76.0    | 76.0    |      |  |
| Actuated g/C Ratio                |      | 0.21  |       |      |                           |      |      |      |      | 0.56    | 0.56    |      |  |
| Clearance Time (s)                |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Vehicle Extension (s)             |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Lane Grp Cap (vph)                |      | 1034  |       |      |                           |      |      |      |      | 872     | 2901    |      |  |
| v/s Ratio Prot                    |      | c0.23 |       |      |                           |      |      |      |      | 0.17    | c0.23   |      |  |
| v/s Ratio Perm                    |      |       |       |      |                           |      |      |      |      | 0.04    | 0.05    |      |  |
| v/c Ratio                         |      | 1.12  |       |      |                           |      |      |      |      | 0.34    | 0.46    |      |  |
| Uniform Delay, d1                 |      | 53.5  |       |      |                           |      |      |      |      | 16.0    | 17.4    |      |  |
| Progression Factor                |      | 1.00  |       |      |                           |      |      |      |      | 1.28    | 0.74    |      |  |
| Incremental Delay, d2             |      | 66.3  |       |      |                           |      |      |      |      | 0.1     | 0.0     |      |  |
| Delay (s)                         |      | 119.8 |       |      |                           |      |      |      |      | 20.6    | 12.9    |      |  |
| Level of Service                  |      | F     |       |      |                           |      |      |      |      | C       | B       |      |  |
| Approach Delay (s)                |      | 119.8 |       |      | 0.0                       |      |      | 0.0  |      |         | 14.7    |      |  |
| Approach LOS                      |      | F     |       |      | A                         |      |      | A    |      |         | B       |      |  |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| HCM 2000 Control Delay            |      |       | 55.7  |      | HCM 2000 Level of Service |      |      |      |      |         | E       |      |  |
| HCM 2000 Volume to Capacity ratio |      |       | 0.73  |      |                           |      |      |      |      |         |         |      |  |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      |      |      |      |      | 40.0    |         |      |  |
| Intersection Capacity Utilization |      |       | 73.4% |      | ICU Level of Service      |      |      |      |      | D       |         |      |  |
| Analysis Period (min)             |      |       | 15    |      |                           |      |      |      |      |         |         |      |  |
| c Critical Lane Group             |      |       |       |      |                           |      |      |      |      |         |         |      |  |





















| Lane Group              | EBL  | EBT  | NBT  |
|-------------------------|------|------|------|
| Lane Group Flow (vph)   | 581  | 1208 | 1720 |
| v/c Ratio               | 0.54 | 0.56 | 1.03 |
| Control Delay           | 5.2  | 6.3  | 77.5 |
| Queue Delay             | 15.1 | 22.2 | 13.1 |
| Total Delay             | 20.3 | 28.4 | 90.5 |
| Queue Length 50th (ft)  | 26   | 465  | ~458 |
| Queue Length 95th (ft)  | 15   | m454 | #536 |
| Internal Link Dist (ft) |      | 38   | 673  |
| Turn Bay Length (ft)    |      |      |      |
| Base Capacity (vph)     | 1080 | 2154 | 1669 |
| Starvation Cap Reductn  | 486  | 980  | 0    |
| Spillback Cap Reductn   | 0    | 0    | 54   |
| Storage Cap Reductn     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.98 | 1.03 | 1.07 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

|                                   |  |   |  |  |  |  |  |    |  |  |  |  |
|-----------------------------------|---|--|---|---|---|---|--|---|---|---|---|---|
| Movement                          | EBL   | EBT  | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |  | <br> |   |   |   |   |  | <br><br> |   |   |   |   |
| Traffic Volume (vph)              | 443   | 1042   | 0   | 0   | 0   | 0   | 0  | 1220  | 326   | 0   | 0   | 0   |
| Future Volume (vph)               | 443   | 1042   | 0   | 0   | 0   | 0   | 0  | 1220  | 326   | 0   | 0   | 0   |
| 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   |   |   |   |   |
| Lane Util. Factor                 | 0.91  | 0.91   |   |   |   |   |  | 0.86  |   |   |   |   |
| Frt                               | 1.00  | 1.00   |   |   |   |   |  | 0.97  |   |   |   |   |
| Flt Protected                     | 0.95  | 1.00   |   |   |   |   |  | 1.00  |   |   |   |   |
| Satd. Flow (prot)                 | 1610  | 3259   |   |   |   |   |  | 6292  |   |   |   |   |
| Flt Permitted                     | 0.95  | 1.00   |   |   |   |   |  | 1.00  |   |   |   |   |
| Satd. Flow (perm)                 | 1610  | 3259   |   |   |   |   |  | 6292  |   |   |   |   |
| Peak-hour factor, PHF             | 0.64  | 0.95   | 0.92  | 0.92  | 0.92  | 0.92  | 0.92   | 0.91  | 0.86  | 0.92  | 0.92  | 0.92  |
| Adj. Flow (vph)                   | 692   | 1097   | 0   | 0   | 0   | 0   | 0  | 1341  | 379   | 0   | 0   | 0   |
| RTOR Reduction (vph)              | 36  | 36   | 0   | 0   | 0   | 0   | 0  | 36  | 0   | 0   | 0   | 0   |
| Lane Group Flow (vph)             | 545   | 1172   | 0   | 0   | 0   | 0   | 0  | 1684  | 0   | 0   | 0   | 0   |
| Heavy Vehicles (%)                | 2%  | 6%   | 2%  | 2%  | 2%  | 2%  | 2%   | 0%  | 2%  | 2%  | 2%  | 2%  |
| Turn Type                         | custom  | NA   |   |   |   |   |  | NA  |   |   |   |   |
| Protected Phases                  | 4 5 6 8   | 4 5 6 8  |   |   |   |   |  | 1 2 3   |   |   |   |   |
| Permitted Phases                  | 7   | 7  |   |   |   |   |  |   |   |   |   |   |
| Actuated Green, G (s)             | 80.0  | 80.0   |   |   |   |   |  | 39.0  |   |   |   |   |
| Effective Green, g (s)            | 80.0  | 80.0   |   |   |   |   |  | 39.0  |   |   |   |   |
| Actuated g/C Ratio                | 0.59  | 0.59   |   |   |   |   |  | 0.29  |   |   |   |   |
| Clearance Time (s)                |   |  |   |   |   |   |  |   |   |   |   |   |
| Vehicle Extension (s)             |   |  |   |   |   |   |  |   |   |   |   |   |
| Lane Grp Cap (vph)                | 1025  | 2076   |   |   |   |   |  | 1817  |   |   |   |   |
| v/s Ratio Prot                    | 0.28  | c0.30  |   |   |   |   |  | c0.27   |   |   |   |   |
| v/s Ratio Perm                    | 0.06  | 0.06   |   |   |   |   |  |   |   |   |   |   |
| v/c Ratio                         | 0.53  | 0.56   |   |   |   |   |  | 0.93  |   |   |   |   |
| Uniform Delay, d1                 | 16.4  | 16.8   |   |   |   |   |  | 46.6  |   |   |   |   |
| Progression Factor                | 0.40  | 0.48   |   |   |   |   |  | 1.00  |   |   |   |   |
| Incremental Delay, d2             | 0.1   | 0.1  |   |   |   |   |  | 9.7   |   |   |   |   |
| Delay (s)                         | 6.7   | 8.2  |   |   |   |   |  | 56.3  |   |   |   |   |
| Level of Service                  | A   | A  |   |   |   |   |  | E   |   |   |   |   |
| Approach Delay (s)                |   | 7.7  |   |   | 0.0   |   |  | 56.3  |   |   | 0.0   |   |
| Approach LOS                      |   | A  |   |   | A   |   |  | E   |   |   | A   |   |
| <b>Intersection Summary</b>       |   |  |   |   |   |   |  |   |   |   |   |   |
| HCM 2000 Control Delay            |   |  | 31.5  |   |   |   |  | HCM 2000 Level of Service   |   | C   |   |   |
| HCM 2000 Volume to Capacity ratio |   |  | 0.89  |   |   |   |  |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |  | 135.0   |   |   |   |  | Sum of lost time (s)  |   | 40.0  |   |   |
| Intersection Capacity Utilization |   |  | 78.4%   |   |   |   |  | ICU Level of Service  |   | D   |   |   |
| Analysis Period (min)             |   |  | 15  |   |   |   |  |   |   |   |   |   |
| c Critical Lane Group             |   |  |   |   |   |   |  |   |   |   |   |   |



| Lane Group              | WBL  | WBT  | NBL  | NBT  | SBT  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 746  | 1119 | 236  | 353  | 33   |
| v/c Ratio               | 0.98 | 0.98 | 0.32 | 0.23 | 0.03 |
| Control Delay           | 54.8 | 48.1 | 3.7  | 1.5  | 11.8 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 54.8 | 48.1 | 3.7  | 1.5  | 11.8 |
| Queue Length 50th (ft)  | 152  | 153  | 0    | 0    | 1    |
| Queue Length 95th (ft)  | #257 | #214 | m0   | m0   | 8    |
| Internal Link Dist (ft) |      | 364  |      | 236  | 206  |
| Turn Bay Length (ft)    | 300  |      |      |      |      |
| Base Capacity (vph)     | 765  | 1142 | 738  | 1549 | 1241 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.98 | 0.98 | 0.32 | 0.23 | 0.03 |

**Intersection Summary**

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: West Gate Blvd & US 290 WBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT                       | WBR  | NBL     | NBT     | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|------|------|-------|------|---------------------------|------|---------|---------|------|------|------|------|--|
| Lane Configurations               |      |      |       | ↔↔   | ↑↑↑                       |      | ↔       | ↔↑      |      |      | ↑↑↑  |      |  |
| Traffic Volume (vph)              | 0    | 0    | 0     | 701  | 778                       | 106  | 435     | 102     | 0    | 0    | 15   | 12   |  |
| Future Volume (vph)               | 0    | 0    | 0     | 701  | 778                       | 106  | 435     | 102     | 0    | 0    | 15   | 12   |  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900                      | 1900 | 1900    | 1900    | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)               |      |      |       | 5.5  | 5.5                       |      | 6.0     | 6.0     |      |      | 6.0  |      |  |
| Lane Util. Factor                 |      |      |       | 0.97 | 0.91                      |      | 0.91    | 0.91    |      |      | 0.91 |      |  |
| Frbp, ped/bikes                   |      |      |       | 1.00 | 1.00                      |      | 1.00    | 1.00    |      |      | 1.00 |      |  |
| Flpb, ped/bikes                   |      |      |       | 1.00 | 1.00                      |      | 1.00    | 1.00    |      |      | 1.00 |      |  |
| Frt                               |      |      |       | 1.00 | 0.97                      |      | 1.00    | 1.00    |      |      | 0.93 |      |  |
| Flt Protected                     |      |      |       | 0.95 | 1.00                      |      | 0.95    | 0.97    |      |      | 1.00 |      |  |
| Satd. Flow (prot)                 |      |      |       | 3433 | 4903                      |      | 1595    | 3280    |      |      | 4444 |      |  |
| Flt Permitted                     |      |      |       | 0.95 | 1.00                      |      | 0.73    | 0.76    |      |      | 1.00 |      |  |
| Satd. Flow (perm)                 |      |      |       | 3433 | 4903                      |      | 1231    | 2583    |      |      | 4444 |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92  | 0.94 | 0.84                      | 0.55 | 0.92    | 0.88    | 0.92 | 0.92 | 0.88 | 0.75 |  |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 746  | 926                       | 193  | 473     | 116     | 0    | 0    | 17   | 16   |  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 49                        | 0    | 0       | 0       | 0    | 0    | 11   | 0    |  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 746  | 1070                      | 0    | 236     | 353     | 0    | 0    | 22   | 0    |  |
| Confl. Peds. (#/hr)               |      |      |       |      |                           | 1    |         |         |      |      |      |      |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%    | 2%   | 3%                        | 2%   | 3%      | 0%      | 2%   | 2%   | 0%   | 17%  |  |
| Turn Type                         |      |      |       | Perm | NA                        |      | Perm    | NA      |      |      | NA   |      |  |
| Protected Phases                  |      |      |       |      | 4 5                       |      |         | 1 2 6 7 |      |      | 1 2  |      |  |
| Permitted Phases                  |      |      |       | 4 5  |                           |      | 1 2 6 7 |         |      |      |      |      |  |
| Actuated Green, G (s)             |      |      |       | 14.0 | 14.0                      |      | 39.5    | 39.5    |      |      | 18.5 |      |  |
| Effective Green, g (s)            |      |      |       | 14.0 | 14.0                      |      | 28.5    | 28.5    |      |      | 18.5 |      |  |
| Actuated g/C Ratio                |      |      |       | 0.22 | 0.22                      |      | 0.44    | 0.44    |      |      | 0.28 |      |  |
| Clearance Time (s)                |      |      |       |      |                           |      |         |         |      |      |      |      |  |
| Vehicle Extension (s)             |      |      |       |      |                           |      |         |         |      |      |      |      |  |
| Lane Grp Cap (vph)                |      |      |       | 739  | 1056                      |      | 539     | 1132    |      |      | 1264 |      |  |
| v/s Ratio Prot                    |      |      |       |      | c0.22                     |      |         |         |      |      | 0.00 |      |  |
| v/s Ratio Perm                    |      |      |       | 0.22 |                           |      | c0.19   | 0.14    |      |      |      |      |  |
| v/c Ratio                         |      |      |       | 1.01 | 1.01                      |      | 0.44    | 0.31    |      |      | 0.02 |      |  |
| Uniform Delay, d1                 |      |      |       | 25.5 | 25.5                      |      | 12.7    | 11.9    |      |      | 16.7 |      |  |
| Progression Factor                |      |      |       | 1.00 | 1.00                      |      | 0.45    | 0.21    |      |      | 1.00 |      |  |
| Incremental Delay, d2             |      |      |       | 35.5 | 30.9                      |      | 0.1     | 0.0     |      |      | 0.0  |      |  |
| Delay (s)                         |      |      |       | 61.0 | 56.4                      |      | 5.8     | 2.5     |      |      | 16.7 |      |  |
| Level of Service                  |      |      |       | E    | E                         |      | A       | A       |      |      | B    |      |  |
| Approach Delay (s)                |      | 0.0  |       |      | 58.2                      |      |         | 3.8     |      |      | 16.7 |      |  |
| Approach LOS                      |      | A    |       |      | E                         |      |         | A       |      |      | B    |      |  |
| <b>Intersection Summary</b>       |      |      |       |      |                           |      |         |         |      |      |      |      |  |
| HCM 2000 Control Delay            |      |      | 44.8  |      | HCM 2000 Level of Service |      |         |         |      |      | D    |      |  |
| HCM 2000 Volume to Capacity ratio |      |      | 0.86  |      |                           |      |         |         |      |      |      |      |  |
| Actuated Cycle Length (s)         |      |      | 65.0  |      | Sum of lost time (s)      |      |         |         |      | 34.0 |      |      |  |
| Intersection Capacity Utilization |      |      | 85.8% |      | ICU Level of Service      |      |         |         |      | E    |      |      |  |
| Analysis Period (min)             |      |      | 15    |      |                           |      |         |         |      |      |      |      |  |
| c Critical Lane Group             |      |      |       |      |                           |      |         |         |      |      |      |      |  |



| Lane Group              | EBL  | EBT  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 75   | 1037 | 513  | 909  | 75   | 704  |
| v/c Ratio               | 0.14 | 1.00 | 0.87 | 0.90 | 0.16 | 0.37 |
| Control Delay           | 17.9 | 52.8 | 43.6 | 21.3 | 40.1 | 1.6  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  |
| Total Delay             | 17.9 | 52.8 | 43.6 | 21.3 | 40.1 | 1.6  |
| Queue Length 50th (ft)  | 22   | ~204 | 105  | 52   | 34   | 2    |
| Queue Length 95th (ft)  | 39   | #331 | #184 | #172 | m36  | m1   |
| Internal Link Dist (ft) |      | 52   | 369  |      |      | 236  |
| Turn Bay Length (ft)    |      |      |      | 90   |      |      |
| Base Capacity (vph)     | 527  | 1034 | 593  | 1012 | 467  | 1878 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 184  |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.14 | 1.00 | 0.87 | 0.90 | 0.16 | 0.42 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

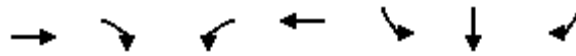
12: West Gate Blvd & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

| Movement                          | EBL   | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT     | SBR                       |      |
|-----------------------------------|-------|-------|-------|------|------|------|------|-------|------|------|---------|---------------------------|------|
| Lane Configurations               |       |       |       |      |      |      |      |       |      |      |         |                           |      |
| Traffic Volume (vph)              | 54    | 708   | 195   | 0    | 0    | 0    | 0    | 487   | 827  | 52   | 676     | 0                         |      |
| Future Volume (vph)               | 54    | 708   | 195   | 0    | 0    | 0    | 0    | 487   | 827  | 52   | 676     | 0                         |      |
| 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  | 5.5  | 5.5     |                           |      |
| Lane Util. Factor                 | 1.00  | 0.95  |       |      |      |      |      | 0.95  | 0.88 | 1.00 | 0.95    |                           |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  |       |      |      |      |      | 1.00  | 0.98 | 1.00 | 1.00    |                           |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  |       |      |      |      |      | 1.00  | 1.00 | 1.00 | 1.00    |                           |      |
| Frt                               | 1.00  | 0.97  |       |      |      |      |      | 1.00  | 0.85 | 1.00 | 1.00    |                           |      |
| Flt Protected                     | 0.95  | 1.00  |       |      |      |      |      | 1.00  | 1.00 | 0.95 | 1.00    |                           |      |
| Satd. Flow (prot)                 | 1805  | 3389  |       |      |      |      |      | 3505  | 2750 | 1736 | 3539    |                           |      |
| Flt Permitted                     | 0.95  | 1.00  |       |      |      |      |      | 1.00  | 1.00 | 0.95 | 1.00    |                           |      |
| Satd. Flow (perm)                 | 1805  | 3389  |       |      |      |      |      | 3505  | 2750 | 1736 | 3539    |                           |      |
| Peak-hour factor, PHF             | 0.72  | 0.89  | 0.81  | 0.92 | 0.92 | 0.92 | 0.92 | 0.95  | 0.91 | 0.69 | 0.96    | 0.92                      |      |
| Adj. Flow (vph)                   | 75    | 796   | 241   | 0    | 0    | 0    | 0    | 513   | 909  | 75   | 704     | 0                         |      |
| RTOR Reduction (vph)              | 0     | 49    | 0     | 0    | 0    | 0    | 0    | 0     | 542  | 0    | 0       | 0                         |      |
| Lane Group Flow (vph)             | 75    | 988   | 0     | 0    | 0    | 0    | 0    | 513   | 367  | 75   | 704     | 0                         |      |
| Confl. Peds. (#/hr)               |       |       | 2     |      |      |      |      |       | 1    | 1    |         |                           |      |
| Heavy Vehicles (%)                | 0%    | 2%    | 4%    | 2%   | 2%   | 2%   | 2%   | 3%    | 1%   | 4%   | 2%      | 2%                        |      |
| Turn Type                         | Split | NA    |       |      |      |      |      | NA    | Perm | Prot | NA      |                           |      |
| Protected Phases                  | 1 7   | 1 7   |       |      |      |      |      | 5 6   |      | 2 4  | 2 4 5 6 |                           |      |
| Permitted Phases                  |       |       |       |      |      |      |      |       | 5 6  |      |         |                           |      |
| Actuated Green, G (s)             | 19.0  | 19.0  |       |      |      |      |      | 11.5  | 11.5 | 17.5 | 34.5    |                           |      |
| Effective Green, g (s)            | 13.5  | 13.5  |       |      |      |      |      | 11.5  | 11.5 | 17.5 | 28.5    |                           |      |
| Actuated g/C Ratio                | 0.21  | 0.21  |       |      |      |      |      | 0.18  | 0.18 | 0.27 | 0.44    |                           |      |
| Clearance Time (s)                |       |       |       |      |      |      |      |       |      |      |         |                           |      |
| Vehicle Extension (s)             |       |       |       |      |      |      |      |       |      |      |         |                           |      |
| Lane Grp Cap (vph)                | 374   | 703   |       |      |      |      |      | 620   | 486  | 467  | 1551    |                           |      |
| v/s Ratio Prot                    | 0.04  | c0.29 |       |      |      |      |      | c0.15 |      | 0.04 | c0.20   |                           |      |
| v/s Ratio Perm                    |       |       |       |      |      |      |      |       | 0.13 |      |         |                           |      |
| v/c Ratio                         | 0.20  | 1.41  |       |      |      |      |      | 0.83  | 0.76 | 0.16 | 0.45    |                           |      |
| Uniform Delay, d1                 | 21.3  | 25.8  |       |      |      |      |      | 25.8  | 25.4 | 18.1 | 12.8    |                           |      |
| Progression Factor                | 1.00  | 1.00  |       |      |      |      |      | 1.00  | 1.00 | 2.15 | 0.15    |                           |      |
| Incremental Delay, d2             | 0.1   | 190.8 |       |      |      |      |      | 12.0  | 10.5 | 0.3  | 0.3     |                           |      |
| Delay (s)                         | 21.4  | 216.6 |       |      |      |      |      | 37.8  | 35.9 | 39.2 | 2.3     |                           |      |
| Level of Service                  | C     | F     |       |      |      |      |      | D     | D    | D    | A       |                           |      |
| Approach Delay (s)                |       | 203.4 |       |      | 0.0  |      |      | 36.6  |      |      | 5.8     |                           |      |
| Approach LOS                      |       | F     |       |      | A    |      |      | D     |      |      | A       |                           |      |
| <b>Intersection Summary</b>       |       |       |       |      |      |      |      |       |      |      |         |                           |      |
| HCM 2000 Control Delay            |       |       | 85.4  |      |      |      |      |       |      |      |         | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |       |       | 1.22  |      |      |      |      |       |      |      |         |                           |      |
| Actuated Cycle Length (s)         |       |       | 65.0  |      |      |      |      |       |      |      |         | Sum of lost time (s)      | 34.0 |
| Intersection Capacity Utilization |       |       | 85.8% |      |      |      |      |       |      |      |         | ICU Level of Service      | E    |
| Analysis Period (min)             |       |       | 15    |      |      |      |      |       |      |      |         |                           |      |

c Critical Lane Group





| Lane Group              | EBT  | EBR  | WBL  | WBT   | SBL   | SBT   | SBR  |
|-------------------------|------|------|------|-------|-------|-------|------|
| Lane Group Flow (vph)   | 2063 | 819  | 222  | 5672  | 207   | 212   | 720  |
| v/c Ratio               | 0.64 | 0.29 | 0.81 | 1.38  | 1.06  | 1.02  | 0.46 |
| Control Delay           | 19.9 | 0.3  | 48.2 | 201.9 | 151.6 | 143.3 | 1.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.3   | 0.0   | 0.0   | 0.0  |
| Total Delay             | 19.9 | 0.3  | 48.2 | 202.2 | 151.6 | 143.3 | 1.0  |
| Queue Length 50th (ft)  | 510  | 0    | 174  | ~3317 | ~278  | ~278  | 0    |
| Queue Length 95th (ft)  | 551  | 0    | m71  | m1716 | #374  | 204   | 0    |
| Internal Link Dist (ft) | 834  |      |      | 1419  |       | 192   |      |
| Turn Bay Length (ft)    |      |      | 950  |       |       |       |      |
| Base Capacity (vph)     | 3242 | 2777 | 275  | 4096  | 196   | 207   | 1553 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 720   | 0     | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0     | 0     | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0     | 0     | 0     | 0    |
| Reduced v/c Ratio       | 0.64 | 0.29 | 0.81 | 1.68  | 1.06  | 1.02  | 0.46 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

13: Capital of Texas Hwy & Mopac SBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement                          | EBL  | EBT   | EBR    | WBL   | WBT   | WBR                       | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-----------------------------------|------|-------|--------|-------|-------|---------------------------|------|------|------|-------|-------|-------|
| Lane Configurations               |      | ↑↑↑   | ↑↑     | ↑     | ↑↑↑   |                           |      |      |      | ↑     | ↑     | ↑     |
| Traffic Volume (vph)              | 0    | 1980  | 688    | 131   | 5275  | 0                         | 0    | 0    | 0    | 231   | 64    | 655   |
| Future Volume (vph)               | 0    | 1980  | 688    | 131   | 5275  | 0                         | 0    | 0    | 0    | 231   | 64    | 655   |
| Ideal Flow (vphp)                 | 1900 | 1900  | 1900   | 1900  | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  |
| Total Lost time (s)               |      | 7.0   | 4.0    | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5   | 4.0   |
| Lane Util. Factor                 |      | 0.91  | 0.88   | 1.00  | 0.91  |                           |      |      |      | 0.95  | 0.95  | 1.00  |
| Frbp, ped/bikes                   |      | 1.00  | 0.99   | 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  |
| Frt                               |      | 1.00  | 0.85   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00  | 0.85  |
| Flt Protected                     |      | 1.00  | 1.00   | 0.95  | 1.00  |                           |      |      |      | 0.95  | 0.98  | 1.00  |
| Satd. Flow (prot)                 |      | 4988  | 2777   | 1752  | 5085  |                           |      |      |      | 1649  | 1739  | 1553  |
| Flt Permitted                     |      | 1.00  | 1.00   | 0.06  | 1.00  |                           |      |      |      | 0.95  | 0.98  | 1.00  |
| Satd. Flow (perm)                 |      | 4988  | 2777   | 103   | 5085  |                           |      |      |      | 1649  | 1739  | 1553  |
| Peak-hour factor, PHF             | 0.92 | 0.96  | 0.84   | 0.59  | 0.93  | 0.92                      | 0.92 | 0.92 | 0.92 | 0.78  | 0.52  | 0.91  |
| Adj. Flow (vph)                   | 0    | 2062  | 819    | 222   | 5672  | 0                         | 0    | 0    | 0    | 296   | 123   | 720   |
| RTOR Reduction (vph)              | 0    | 0     | 0      | 0     | 0     | 0                         | 0    | 0    | 0    | 0     | 0     | 0     |
| Lane Group Flow (vph)             | 0    | 2063  | 819    | 222   | 5672  | 0                         | 0    | 0    | 0    | 207   | 212   | 720   |
| Confl. Bikes (#/hr)               |      |       | 6      |       |       |                           |      |      |      |       |       |       |
| Heavy Vehicles (%)                | 2%   | 4%    | 1%     | 3%    | 2%    | 2%                        | 2%   | 2%   | 2%   | 4%    | 0%    | 4%    |
| Turn Type                         |      | NA    | Free   | pm+pt | NA    |                           |      |      |      | Perm  | NA    | Free  |
| Protected Phases                  |      | 2     |        | 1     | 6     |                           |      |      |      |       | 8     |       |
| Permitted Phases                  |      |       | Free   | 6     |       |                           |      |      |      | 8     |       | Free  |
| Actuated Green, G (s)             |      | 117.0 | 180.0  | 145.0 | 145.0 |                           |      |      |      | 21.5  | 21.5  | 180.0 |
| Effective Green, g (s)            |      | 117.0 | 180.0  | 145.0 | 145.0 |                           |      |      |      | 21.5  | 21.5  | 180.0 |
| Actuated g/C Ratio                |      | 0.65  | 1.00   | 0.81  | 0.81  |                           |      |      |      | 0.12  | 0.12  | 1.00  |
| Clearance Time (s)                |      | 7.0   |        | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5   |       |
| Vehicle Extension (s)             |      | 4.0   |        | 2.0   | 4.0   |                           |      |      |      | 2.0   | 2.0   |       |
| Lane Grp Cap (vph)                |      | 3242  | 2777   | 275   | 4096  |                           |      |      |      | 196   | 207   | 1553  |
| v/s Ratio Prot                    |      | 0.41  |        | 0.09  | c1.12 |                           |      |      |      |       |       |       |
| v/s Ratio Perm                    |      |       | 0.29   | 0.55  |       |                           |      |      |      | c0.13 | 0.12  | 0.46  |
| v/c Ratio                         |      | 0.64  | 0.29   | 0.81  | 1.38  |                           |      |      |      | 1.06  | 1.02  | 0.46  |
| Uniform Delay, d1                 |      | 18.8  | 0.0    | 50.6  | 17.5  |                           |      |      |      | 79.2  | 79.2  | 0.0   |
| Progression Factor                |      | 1.00  | 1.00   | 1.06  | 1.81  |                           |      |      |      | 1.00  | 1.00  | 1.00  |
| Incremental Delay, d2             |      | 1.0   | 0.3    | 2.4   | 173.3 |                           |      |      |      | 79.9  | 69.0  | 1.0   |
| Delay (s)                         |      | 19.8  | 0.3    | 56.1  | 205.0 |                           |      |      |      | 159.1 | 148.2 | 1.0   |
| Level of Service                  |      | B     | A      | E     | F     |                           |      |      |      | F     | F     | A     |
| Approach Delay (s)                |      | 14.2  |        |       | 199.4 |                           |      | 0.0  |      |       | 57.1  |       |
| Approach LOS                      |      | B     |        |       | F     |                           |      | A    |      |       | E     |       |
| <b>Intersection Summary</b>       |      |       |        |       |       |                           |      |      |      |       |       |       |
| HCM 2000 Control Delay            |      |       | 129.3  |       |       | HCM 2000 Level of Service |      |      |      | F     |       |       |
| HCM 2000 Volume to Capacity ratio |      |       | 1.40   |       |       |                           |      |      |      |       |       |       |
| Actuated Cycle Length (s)         |      |       | 180.0  |       |       | Sum of lost time (s)      |      |      |      | 20.5  |       |       |
| Intersection Capacity Utilization |      |       | 143.1% |       |       | ICU Level of Service      |      |      |      | H     |       |       |
| Analysis Period (min)             |      |       | 15     |       |       |                           |      |      |      |       |       |       |

c Critical Lane Group



| Lane Group              | EBL   | EBT  | WBT   | WBR    | NBL   | NBT  | NBR   |
|-------------------------|-------|------|-------|--------|-------|------|-------|
| Lane Group Flow (vph)   | 439   | 1967 | 3684  | 3691   | 2094  | 249  | 511   |
| v/c Ratio               | 1.53  | 0.79 | 1.34  | 2.38   | 1.99  | 0.63 | 1.34  |
| Control Delay           | 290.6 | 15.8 | 196.8 | 640.6  | 483.8 | 73.0 | 212.9 |
| Queue Delay             | 0.0   | 0.0  | 3.6   | 0.0    | 0.0   | 0.0  | 0.0   |
| Total Delay             | 290.6 | 15.8 | 200.4 | 640.6  | 483.8 | 73.0 | 212.9 |
| Queue Length 50th (ft)  | ~680  | 434  | ~2071 | ~6951  | ~1360 | 272  | ~719  |
| Queue Length 95th (ft)  | m#881 | m451 | m797  | m#3085 | #1441 | 327  | #711  |
| Internal Link Dist (ft) |       | 1419 | 756   |        |       | 675  |       |
| Turn Bay Length (ft)    |       |      |       |        | 300   |      |       |
| Base Capacity (vph)     | 286   | 2487 | 2740  | 1549   | 1050  | 395  | 382   |
| Starvation Cap Reductn  | 0     | 0    | 0     | 0      | 0     | 0    | 0     |
| Spillback Cap Reductn   | 0     | 0    | 1803  | 0      | 0     | 0    | 0     |
| Storage Cap Reductn     | 0     | 0    | 0     | 0      | 0     | 0    | 0     |
| Reduced v/c Ratio       | 1.53  | 0.79 | 3.93  | 2.38   | 1.99  | 0.63 | 1.34  |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Mopac NBFR & Capital of Texas Hwy  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |  |  |  |   |   |   |
| Traffic Volume (veh/h)       | 404   | 1849  | 0   | 0   | 3426  | 3580  | 1968   | 199   | 383   | 0   | 0   | 0   |
| Future Volume (veh/h)        | 404   | 1849  | 0   | 0   | 3426  | 3580  | 1968   | 199   | 383   | 0   | 0   | 0   |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  | 7  | 4   | 14  |   |   |   |
| 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  |   |   |   |
| Adj Sat Flow, veh/h/ln       | 1863  | 1827  | 0   | 0   | 1863  | 1845  | 1881   | 1900  | 1863  |   |   |   |
| Adj Flow Rate, veh/h         | 439   | 1967  | 0   | 0   | 3684  | 0   | 2094   | 249   | 0   |   |   |   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 3   | 1   | 3  | 1   | 1   |   |   |   |
| Peak Hour Factor             | 0.92  | 0.94  | 0.92  | 0.92  | 0.93  | 0.97  | 0.94   | 0.80  | 0.75  |   |   |   |
| Percent Heavy Veh, %         | 2   | 4   | 0   | 0   | 2   | 3   | 1  | 0   | 2   |   |   |   |
| Cap, veh/h                   | 286   | 2488  | 0   | 0   | 2740  | 845   | 1053   | 396   | 330   |   |   |   |
| Arrive On Green              | 0.28  | 1.00  | 0.00  | 0.00  | 0.54  | 0.00  | 0.21   | 0.21  | 0.00  |   |   |   |
| Sat Flow, veh/h              | 1774  | 3563  | 0   | 0   | 5253  | 1568  | 5052   | 1900  | 1583  |   |   |   |
| Grp Volume(v), veh/h         | 439   | 1967  | 0   | 0   | 3684  | 0   | 2094   | 249   | 0   |   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1774  | 1736  | 0   | 0   | 1695  | 1568  | 1684   | 1900  | 1583  |   |   |   |
| Q Serve(g_s), s              | 25.0  | 0.0   | 0.0   | 0.0   | 97.0  | 0.0   | 37.5   | 21.5  | 0.0   |   |   |   |
| Cycle Q Clear(g_c), s        | 25.0  | 0.0   | 0.0   | 0.0   | 97.0  | 0.0   | 37.5   | 21.5  | 0.0   |   |   |   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.00  |   | 1.00  | 1.00   |   | 1.00  |   |   |   |
| Lane Grp Cap(c), veh/h       | 286   | 2488  | 0   | 0   | 2740  | 845   | 1053   | 396   | 330   |   |   |   |
| V/C Ratio(X)                 | 1.53  | 0.79  | 0.00  | 0.00  | 1.34  | 0.00  | 1.99   | 0.63  | 0.00  |   |   |   |
| Avail Cap(c_a), veh/h        | 286   | 2488  | 0   | 0   | 2740  | 845   | 1053   | 396   | 330   |   |   |   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Upstream Filter(I)           | 0.68  | 0.68  | 0.00  | 0.00  | 1.00  | 0.00  | 1.00   | 1.00  | 0.00  |   |   |   |
| Uniform Delay (d), s/veh     | 63.3  | 0.0   | 0.0   | 0.0   | 41.5  | 0.0   | 71.3   | 64.9  | 0.0   |   |   |   |
| Incr Delay (d2), s/veh       | 251.6   | 1.8   | 0.0   | 0.0   | 157.5   | 0.0   | 448.6  | 2.4   | 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     | 34.2  | 0.6   | 0.0   | 0.0   | 85.1  | 0.0   | 61.2   | 11.5  | 0.0   |   |   |   |
| LnGrp Delay(d),s/veh         | 314.8   | 1.8   | 0.0   | 0.0   | 199.0   | 0.0   | 519.9  | 67.3  | 0.0   |   |   |   |
| LnGrp LOS                    | F   | A   |   |   | F   |   | F  | E   |   |   |   |   |
| Approach Vol, veh/h          |   | 2406  |   |   | 3684  |   |  | 2343  |   |   |   |   |
| Approach Delay, s/veh        |   | 58.9  |   |   | 199.0   |   |  | 471.8   |   |   |   |   |
| Approach LOS                 |   | E   |   |   | F   |   |  | F   |   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   | 5   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 136.0   |   | 44.0  | 32.0  | 104.0   |  |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 7.0   |   | 6.5   | 7.0   | 7.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 129.0   |   | 37.5  | 25.0  | 97.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 39.5  | 27.0  | 99.0  |  |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 6.9   |   | 0.0   | 0.0   | 0.0   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 234.8   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | F   |   |   |  |   |   |   |   |   |



| Lane Group              | WBR  | NBT   | NBR  | SBL    | SBT    |
|-------------------------|------|-------|------|--------|--------|
| Lane Group Flow (vph)   | 210  | 7008  | 174  | 740    | 5032   |
| v/c Ratio               | 0.39 | 1.87  | 0.15 | 2.18   | 1.35   |
| Control Delay           | 66.5 | 412.1 | 7.0  | 569.6  | 184.3  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0    | 0.0    |
| Total Delay             | 66.5 | 412.1 | 7.0  | 569.6  | 184.3  |
| Queue Length 50th (ft)  | 125  | ~4594 | 54   | ~1409  | ~2858  |
| Queue Length 95th (ft)  | 149  | #4463 | 52   | m#1485 | m#2733 |
| Internal Link Dist (ft) |      | 1281  |      |        | 1273   |
| Turn Bay Length (ft)    |      |       | 430  | 550    |        |
| Base Capacity (vph)     | 536  | 3757  | 1194 | 340    | 3721   |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0      | 0      |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0      | 0      |
| Storage Cap Reductn     | 0    | 0     | 0    | 0      | 0      |
| Reduced v/c Ratio       | 0.39 | 1.87  | 0.15 | 2.18   | 1.35   |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Capital of Texas Hwy & Barton Creek Plaza Driveway  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement                          | WBL  | WBR  | NBT    | NBR   | SBL                       | SBT   |
|-----------------------------------|------|------|--------|-------|---------------------------|-------|
| Lane Configurations               |      | ↗↗   | ↕↕↕    | ↘     | ↘                         | ↕↕↕   |
| Traffic Volume (vph)              | 0    | 164  | 6868   | 108   | 622                       | 4780  |
| Future Volume (vph)               | 0    | 164  | 6868   | 108   | 622                       | 4780  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900                      | 1900  |
| Total Lost time (s)               |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Lane Util. Factor                 |      | 0.88 | 0.91   | 1.00  | 1.00                      | 0.91  |
| Frbp, ped/bikes                   |      | 1.00 | 1.00   | 1.00  | 1.00                      | 1.00  |
| Flpb, ped/bikes                   |      | 1.00 | 1.00   | 1.00  | 1.00                      | 1.00  |
| Frt                               |      | 0.85 | 1.00   | 0.85  | 1.00                      | 1.00  |
| Flt Protected                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |      | 2842 | 5085   | 1615  | 1805                      | 5036  |
| Flt Permitted                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |      | 2842 | 5085   | 1615  | 1805                      | 5036  |
| Peak-hour factor, PHF             | 0.92 | 0.78 | 0.98   | 0.62  | 0.84                      | 0.95  |
| Adj. Flow (vph)                   | 0    | 210  | 7008   | 174   | 740                       | 5032  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 1     | 0                         | 0     |
| Lane Group Flow (vph)             | 0    | 210  | 7008   | 173   | 740                       | 5032  |
| Confl. Bikes (#/hr)               |      |      |        | 1     |                           |       |
| Heavy Vehicles (%)                | 2%   | 0%   | 2%     | 0%    | 0%                        | 3%    |
| Turn Type                         |      | Over | NA     | Prot  | Prot                      | NA    |
| Protected Phases                  |      | 5    | 6      | 6     | 5                         | 6     |
| Permitted Phases                  |      |      |        |       |                           |       |
| Actuated Green, G (s)             |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Effective Green, g (s)            |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Actuated g/C Ratio                |      | 0.19 | 0.74   | 0.74  | 0.19                      | 0.74  |
| Clearance Time (s)                |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Vehicle Extension (s)             |      | 2.0  | 4.0    | 4.0   | 2.0                       | 4.0   |
| Lane Grp Cap (vph)                |      | 536  | 3757   | 1193  | 340                       | 3721  |
| v/s Ratio Prot                    |      | 0.07 | c1.38  | 0.11  | c0.41                     | 1.00  |
| v/s Ratio Perm                    |      |      |        |       |                           |       |
| v/c Ratio                         |      | 0.39 | 1.87   | 0.14  | 2.18                      | 1.35  |
| Uniform Delay, d1                 |      | 63.9 | 23.5   | 6.9   | 73.0                      | 23.5  |
| Progression Factor                |      | 1.00 | 1.00   | 1.00  | 1.05                      | 0.97  |
| Incremental Delay, d2             |      | 0.2  | 390.4  | 0.3   | 538.5                     | 160.3 |
| Delay (s)                         |      | 64.1 | 413.9  | 7.1   | 615.3                     | 183.0 |
| Level of Service                  |      | E    | F      | A     | F                         | F     |
| Approach Delay (s)                | 64.1 |      | 404.1  |       |                           | 238.4 |
| Approach LOS                      | E    |      | F      |       |                           | F     |
| <b>Intersection Summary</b>       |      |      |        |       |                           |       |
| HCM 2000 Control Delay            |      |      | 326.0  |       | HCM 2000 Level of Service | F     |
| HCM 2000 Volume to Capacity ratio |      |      | 1.93   |       |                           |       |
| Actuated Cycle Length (s)         |      |      | 180.0  |       | Sum of lost time (s)      | 13.0  |
| Intersection Capacity Utilization |      |      | 178.0% |       | ICU Level of Service      | H     |
| Analysis Period (min)             |      |      | 15     |       |                           |       |
| c Critical Lane Group             |      |      |        |       |                           |       |



| Lane Group              | WBL  | WBT    | NBL  | NBT  | SBT   | SBR  |
|-------------------------|------|--------|------|------|-------|------|
| Lane Group Flow (vph)   | 201  | 2071   | 122  | 408  | 487   | 239  |
| v/c Ratio               | 0.29 | 1.41   | 0.27 | 0.45 | 1.22  | 0.52 |
| Control Delay           | 27.9 | 219.2  | 11.0 | 14.3 | 163.1 | 20.4 |
| Queue Delay             | 0.4  | 0.0    | 0.9  | 4.0  | 0.7   | 0.0  |
| Total Delay             | 28.3 | 219.2  | 12.0 | 18.4 | 163.8 | 20.4 |
| Queue Length 50th (ft)  | 116  | ~1283  | 48   | 216  | ~547  | 57   |
| Queue Length 95th (ft)  | m168 | m#1387 | m56  | m166 | #618  | 48   |
| Internal Link Dist (ft) |      | 522    |      | 175  | 200   |      |
| Turn Bay Length (ft)    |      |        | 70   |      |       | 90   |
| Base Capacity (vph)     | 692  | 1473   | 511  | 893  | 399   | 462  |
| Starvation Cap Reductn  | 0    | 0      | 214  | 393  | 0     | 0    |
| Spillback Cap Reductn   | 190  | 0      | 0    | 0    | 26    | 0    |
| Storage Cap Reductn     | 0    | 0      | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.40 | 1.41   | 0.41 | 0.82 | 1.31  | 0.52 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.



















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: US 290 WBFR & Victory Drive  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |   |   |   |  |  |   |  |  |   |   |  |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 177   | 1701  | 230   | 115   | 253   | 0   | 0   | 370   | 146   |
| Future Volume (vph)               | 0   | 0   | 0   | 177   | 1701  | 230   | 115   | 253   | 0   | 0   | 370   | 146   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               |   |   |   | 5.5   | 5.5   |   | 5.5   | 4.5   |   |   | 4.5   | 4.5   |
| Lane Util. Factor                 |   |   |   | 1.00  | 0.95  |   | 1.00  | 1.00  |   |   | 1.00  | 1.00  |
| Frbp, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  | 0.98  |
| Flpb, ped/bikes                   |   |   |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   | 1.00  | 1.00  |
| Frt                               |   |   |   | 1.00  | 0.98  |   | 1.00  | 1.00  |   |   | 1.00  | 0.85  |
| Flt Protected                     |   |   |   | 0.95  | 1.00  |   | 0.95  | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (prot)                 |   |   |   | 1597  | 3378  |   | 1769  | 1827  |   |   | 1759  | 1488  |
| Flt Permitted                     |   |   |   | 0.95  | 1.00  |   | 0.15  | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (perm)                 |   |   |   | 1597  | 3378  |   | 284   | 1827  |   |   | 1759  | 1488  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.88  | 0.96  | 0.77  | 0.94  | 0.62  | 0.92  | 0.92  | 0.76  | 0.61  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 201   | 1772  | 299   | 122   | 408   | 0   | 0   | 487   | 239   |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 10  | 0   | 0   | 0   | 0   | 0   | 0   | 125   |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 201   | 2061  | 0   | 122   | 408   | 0   | 0   | 487   | 114   |
| Confl. Peds. (#/hr)               |   |   |   |   |   | 6   | 6   |   |   |   |   | 6   |
| Confl. Bikes (#/hr)               |   |   |   |   |   |   |   |   |   |   |   | 4   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 13%   | 3%  | 11%   | 2%  | 4%  | 2%  | 2%  | 8%  | 6%  |
| Turn Type                         |   |   |   | Split   | NA  |   | pm+pt   | NA  |   |   | NA  | Perm  |
| Protected Phases                  |   |   |   | 7 8   | 7 8   |   | 2 10 1 2 6 10   |   |   |   | 1 6   |   |
| Permitted Phases                  |   |   |   |   |   |   | 1 2 6 10  |   |   |   |   | 1 6   |
| Actuated Green, G (s)             |   |   |   | 58.0  | 58.0  |   | 61.0  | 66.5  |   |   | 30.7  | 30.7  |
| Effective Green, g (s)            |   |   |   | 58.0  | 58.0  |   | 50.5  | 55.0  |   |   | 30.7  | 30.7  |
| Actuated g/C Ratio                |   |   |   | 0.43  | 0.43  |   | 0.37  | 0.41  |   |   | 0.23  | 0.23  |
| Clearance Time (s)                |   |   |   |   |   |   |   |   |   |   |   |   |
| Vehicle Extension (s)             |   |   |   |   |   |   |   |   |   |   |   |   |
| Lane Grp Cap (vph)                |   |   |   | 686   | 1451  |   | 373   | 744   |   |   | 400   | 338   |
| v/s Ratio Prot                    |   |   |   | 0.13  | c0.61   |   | 0.06  | c0.22   |   |   | c0.28   |   |
| v/s Ratio Perm                    |   |   |   |   |   |   | 0.06  |   |   |   |   | 0.08  |
| v/c Ratio                         |   |   |   | 0.29  | 1.42  |   | 0.33  | 0.55  |   |   | 1.22  | 0.34  |
| Uniform Delay, d1                 |   |   |   | 25.1  | 38.5  |   | 30.4  | 30.5  |   |   | 52.1  | 43.6  |
| Progression Factor                |   |   |   | 1.07  | 1.05  |   | 0.52  | 0.59  |   |   | 1.00  | 1.00  |
| Incremental Delay, d2             |   |   |   | 0.1   | 193.2   |   | 0.1   | 0.3   |   |   | 118.7   | 0.2   |
| Delay (s)                         |   |   |   | 26.9  | 233.7   |   | 15.9  | 18.2  |   |   | 170.8   | 43.8  |
| Level of Service                  |   |   |   | C   | F   |   | B   | B   |   |   | F   | D   |
| Approach Delay (s)                |   | 0.0   |   |   | 215.4   |   |   | 17.7  |   |   | 129.0   |   |
| Approach LOS                      |   | A   |   |   | F   |   |   | B   |   |   | F   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 167.9   |   |   |   |   |   |   |   |   | F   |
| HCM 2000 Volume to Capacity ratio |   |   | 1.29  |   |   |   |   |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 135.0   |   |   |   |   |   | 32.0  |   |   |   |
| Intersection Capacity Utilization |   |   | 129.0%  |   |   |   |   |   |   |   |   | H   |
| Analysis Period (min)             |   |   | 15  |   |   |   |   |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |   |   |   |   |   |   |





| Lane Group              | EBT   | NBT  | NBR  | SBL  | SBT  |
|-------------------------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 2075  | 234  | 233  | 446  | 150  |
| v/c Ratio               | 1.26  | 0.31 | 0.35 | 0.74 | 0.16 |
| Control Delay           | 162.9 | 28.2 | 14.7 | 22.5 | 3.9  |
| Queue Delay             | 0.3   | 0.0  | 0.0  | 2.4  | 2.0  |
| Total Delay             | 163.2 | 28.2 | 14.7 | 24.8 | 5.9  |
| Queue Length 50th (ft)  | ~849  | 137  | 65   | 186  | 13   |
| Queue Length 95th (ft)  | m#863 | 193  | 112  | m160 | m19  |
| Internal Link Dist (ft) | 53    | 253  |      |      | 175  |
| Turn Bay Length (ft)    |       |      | 125  | 70   |      |
| Base Capacity (vph)     | 1641  | 751  | 662  | 605  | 926  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 71   | 641  |
| Spillback Cap Reductn   | 147   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.39  | 0.31 | 0.35 | 0.84 | 0.53 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.























# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

17: Pack Saddle Pass & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

|                                   |  |    |  |  |  |  |  |  |    |    |    |  |                      |   |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|----------------------|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |                      |   |
| Lane Configurations               |   |    |   |   |   |   |  |  |   |   |   |   |                      |   |
| Traffic Volume (vph)              | 151   | 1611  | 66  | 0   | 0   | 0   | 0  | 201   | 193   | 388   | 135   | 0   |                      |   |
| Future Volume (vph)               | 151   | 1611  | 66  | 0   | 0   | 0   | 0  | 201   | 193   | 388   | 135   | 0   |                      |   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900   | 1900  | 1900  | 1900  | 1900  | 1900  |                      |   |
| Total Lost time (s)               |   | 6.0   |   |   |   |   |  | 4.5   | 4.5   | 5.5   | 4.5   |   |                      |   |
| Lane Util. Factor                 |   | 0.91  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |                      |   |
| Frbp, ped/bikes                   |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |                      |   |
| Flpb, ped/bikes                   |   | 1.00  |   |   |   |   |  | 1.00  | 1.00  | 1.00  | 1.00  |   |                      |   |
| Frt                               |   | 0.99  |   |   |   |   |  | 1.00  | 0.85  | 1.00  | 1.00  |   |                      |   |
| Flt Protected                     |   | 0.99  |   |   |   |   |  | 1.00  | 1.00  | 0.95  | 1.00  |   |                      |   |
| Satd. Flow (prot)                 |   | 4915  |   |   |   |   |  | 1845  | 1455  | 1703  | 1583  |   |                      |   |
| Flt Permitted                     |   | 0.99  |   |   |   |   |  | 1.00  | 1.00  | 0.51  | 1.00  |   |                      |   |
| Satd. Flow (perm)                 |   | 4915  |   |   |   |   |  | 1845  | 1455  | 922   | 1583  |   |                      |   |
| Peak-hour factor, PHF             | 0.54  | 0.94  | 0.81  | 0.92  | 0.92  | 0.92  | 0.92   | 0.86  | 0.83  | 0.87  | 0.90  | 0.92  |                      |   |
| Adj. Flow (vph)                   | 280   | 1714  | 81  | 0   | 0   | 0   | 0  | 234   | 233   | 446   | 150   | 0   |                      |   |
| RTOR Reduction (vph)              | 0   | 3   | 0   | 0   | 0   | 0   | 0  | 0   | 74  | 0   | 0   | 0   |                      |   |
| Lane Group Flow (vph)             | 0   | 2072  | 0   | 0   | 0   | 0   | 0  | 234   | 159   | 446   | 150   | 0   |                      |   |
| Confl. Peds. (#/hr)               |   |   | 3   |   |   |   |  |   | 1   | 1   |   |   |                      |   |
| Confl. Bikes (#/hr)               |   |   | 1   |   |   |   |  |   |   |   |   |   |                      |   |
| Heavy Vehicles (%)                | 6%  | 4%  | 0%  | 2%  | 2%  | 2%  | 2%   | 3%  | 11%   | 6%  | 20%   | 2%  |                      |   |
| Turn Type                         | Split   | NA  |   |   |   |   |  | NA  | Prot  | D.P+P   | NA  |   |                      |   |
| Protected Phases                  | 8 10  | 8 10  |   |   |   |   |  | 1 2 6   | 1 2 6   | 7   | 1 2 6 7   |   |                      |   |
| Permitted Phases                  |   |   |   |   |   |   |  |   |   | 1 2 6   |   |   |                      |   |
| Actuated Green, G (s)             |   | 45.0  |   |   |   |   |  | 55.5  | 55.5  | 74.0  | 78.5  |   |                      |   |
| Effective Green, g (s)            |   | 45.0  |   |   |   |   |  | 50.0  | 50.0  | 69.5  | 73.0  |   |                      |   |
| Actuated g/C Ratio                |   | 0.33  |   |   |   |   |  | 0.37  | 0.37  | 0.51  | 0.54  |   |                      |   |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   | 5.5   |   |   |                      |   |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   | 1.5   |   |   |                      |   |
| Lane Grp Cap (vph)                |   | 1638  |   |   |   |   |  | 683   | 538   | 581   | 855   |   |                      |   |
| v/s Ratio Prot                    |   | c0.42   |   |   |   |   |  | 0.13  | 0.11  | c0.11   | 0.09  |   |                      |   |
| v/s Ratio Perm                    |   |   |   |   |   |   |  |   |   | c0.29   |   |   |                      |   |
| v/c Ratio                         |   | 1.26  |   |   |   |   |  | 0.34  | 0.30  | 0.77  | 0.18  |   |                      |   |
| Uniform Delay, d1                 |   | 45.0  |   |   |   |   |  | 30.6  | 30.1  | 32.1  | 15.7  |   |                      |   |
| Progression Factor                |   | 1.05  |   |   |   |   |  | 1.00  | 1.00  | 0.80  | 0.30  |   |                      |   |
| Incremental Delay, d2             |   | 123.5   |   |   |   |   |  | 0.1   | 0.1   | 1.9   | 0.0   |   |                      |   |
| Delay (s)                         |   | 171.0   |   |   |   |   |  | 30.8  | 30.2  | 27.4  | 4.7   |   |                      |   |
| Level of Service                  |   | F   |   |   |   |   |  | C   | C   | C   | A   |   |                      |   |
| Approach Delay (s)                |   | 171.0   |   |   | 0.0   |   |  | 30.5  |   |   | 21.7  |   |                      |   |
| Approach LOS                      |   | F   |   |   | A   |   |  | C   |   |   | C   |   |                      |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |                      |   |
| HCM 2000 Control Delay            |   |   | 121.7   |   |   |   |  |   |   |   |   | HCM 2000 Level of Service   | F                    |   |
| HCM 2000 Volume to Capacity ratio |   |   | 1.07  |   |   |   |  |   |   |   |   |   |                      |   |
| Actuated Cycle Length (s)         |   |   | 135.0   |   |   |   |  |   |   |   | 32.0  |   |                      |   |
| Intersection Capacity Utilization |   |   | 129.0%  |   |   |   |  |   |   |   |   |   | ICU Level of Service | H |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |                      |   |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |                      |   |






















| Lane Group              | WBL   | WBT   | WBR   | NBL    | NBT  | SBT   | SBR  |
|-------------------------|-------|-------|-------|--------|------|-------|------|
| Lane Group Flow (vph)   | 648   | 1346  | 1019  | 787    | 1210 | 1198  | 256  |
| v/c Ratio               | 2.12  | 2.13  | 2.41  | 4.06   | 0.47 | 1.09  | 0.56 |
| Control Delay           | 540.5 | 541.7 | 661.8 | 1396.2 | 1.6  | 103.9 | 22.3 |
| Queue Delay             | 1.3   | 0.8   | 0.0   | 0.0    | 0.6  | 3.4   | 0.0  |
| Total Delay             | 541.9 | 542.5 | 661.8 | 1396.2 | 2.1  | 107.3 | 22.3 |
| Queue Length 50th (ft)  | ~951  | ~991  | ~1326 | ~1193  | 40   | ~417  | 70   |
| Queue Length 95th (ft)  | #1157 | #1137 | #1472 | m#1305 | m44  | #474  | 158  |
| Internal Link Dist (ft) |       | 53    |       |        | 174  | 314   |      |
| Turn Bay Length (ft)    |       |       |       |        |      |       | 100  |
| Base Capacity (vph)     | 306   | 631   | 423   | 194    | 2584 | 1095  | 457  |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0      | 870  | 0     | 0    |
| Spillback Cap Reductn   | 32    | 65    | 0     | 0      | 0    | 198   | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0      | 0    | 0     | 0    |
| Reduced v/c Ratio       | 2.36  | 2.38  | 2.41  | 4.06   | 0.71 | 1.34  | 0.56 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

18: US 290 WBFR & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |   |   |   |  |  |  |  |  |   |   |  |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 663   | 1158  | 866   | 669  | 1113  | 0   | 0   | 1030  | 228   |
| Future Volume (vph)               | 0   | 0   | 0   | 663   | 1158  | 866   | 669  | 1113  | 0   | 0   | 1030  | 228   |
| 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   | 5.0  | 5.0   |   |   | 5.0   | 5.0   |
| Lane Util. Factor                 |   |   |   | 0.91  | 0.91  | 1.00  | 1.00   | 0.95  |   |   | 0.91  | 1.00  |
| Frbp, ped/bikes                   |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  |   |   | 1.00  | 0.99  |
| Flpb, ped/bikes                   |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  |   |   | 1.00  | 1.00  |
| Frt                               |   |   |   | 1.00  | 1.00  | 0.85  | 1.00   | 1.00  |   |   | 1.00  | 0.85  |
| Flt Protected                     |   |   |   | 0.95  | 1.00  | 1.00  | 0.95   | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (prot)                 |   |   |   | 1595  | 3285  | 1599  | 1769   | 3574  |   |   | 5085  | 1545  |
| Flt Permitted                     |   |   |   | 0.95  | 1.00  | 1.00  | 0.22   | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (perm)                 |   |   |   | 1595  | 3285  | 1599  | 415  | 3574  |   |   | 5085  | 1545  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.87  | 0.94  | 0.85  | 0.85   | 0.92  | 0.92  | 0.92  | 0.86  | 0.89  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 762   | 1232  | 1019  | 787  | 1210  | 0   | 0   | 1198  | 256   |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 116   | 0  | 0   | 0   | 0   | 0   | 125   |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 648   | 1346  | 904   | 787  | 1210  | 0   | 0   | 1198  | 131   |
| Confl. Peds. (#/hr)               |   |   |   |   |   |   | 1  |   |   |   |   | 1   |
| Confl. Bikes (#/hr)               |   |   |   |   |   |   |  |   |   |   |   | 1   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 3%  | 5%  | 1%  | 2%   | 1%  | 2%  | 2%  | 2%  | 3%  |
| Turn Type                         |   |   |   | Perm  | NA  | Perm  | custom   | NA  |   |   | NA  | Perm  |
| Protected Phases                  |   |   |   |   | 7 8   |   |  | 1 2 6 10  |   |   | 1 6   |   |
| Permitted Phases                  |   |   |   | 7 8   |   | 7 8   | 2 10   |   |   |   |   | 1 6   |
| Actuated Green, G (s)             |   |   |   | 25.0  | 25.0  | 25.0  | 61.0   | 94.0  |   |   | 28.0  | 28.0  |
| Effective Green, g (s)            |   |   |   | 25.0  | 25.0  | 25.0  | 61.0   | 94.0  |   |   | 28.0  | 28.0  |
| Actuated g/C Ratio                |   |   |   | 0.19  | 0.19  | 0.19  | 0.47   | 0.72  |   |   | 0.22  | 0.22  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   |   |   |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   |   |   |
| Lane Grp Cap (vph)                |   |   |   | 306   | 631   | 307   | 194  | 2584  |   |   | 1095  | 332   |
| v/s Ratio Prot                    |   |   |   |   |   |   |  | 0.34  |   |   | c0.24   |   |
| v/s Ratio Perm                    |   |   |   | 0.41  | 0.41  | c0.57   | c1.89  |   |   |   |   | 0.08  |
| v/c Ratio                         |   |   |   | 2.12  | 2.13  | 2.94  | 4.06   | 0.47  |   |   | 1.09  | 0.40  |
| Uniform Delay, d1                 |   |   |   | 52.5  | 52.5  | 52.5  | 34.5   | 7.5   |   |   | 51.0  | 43.7  |
| Progression Factor                |   |   |   | 1.00  | 1.00  | 1.00  | 0.42   | 0.15  |   |   | 1.00  | 1.00  |
| Incremental Delay, d2             |   |   |   | 513.9   | 515.2   | 883.1   | 1384.2   | 0.0   |   |   | 56.6  | 0.3   |
| Delay (s)                         |   |   |   | 566.4   | 567.7   | 935.6   | 1398.7   | 1.1   |   |   | 107.6   | 44.0  |
| Level of Service                  |   |   |   | F   | F   | F   | F  | A   |   |   | F   | D   |
| Approach Delay (s)                |   | 0.0   |   |   | 691.9   |   |  | 551.9   |   |   | 96.4  |   |
| Approach LOS                      |   | A   |   |   | F   |   |  | F   |   |   | F   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 514.7   |   | HCM 2000 Level of Service   |   |  |   |   |   | F   |   |
| HCM 2000 Volume to Capacity ratio |   |   | 3.58  |   |   |   |  |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 130.0   |   | Sum of lost time (s)  |   |  |   |   |   | 32.0  |   |
| Intersection Capacity Utilization |   |   | 152.1%  |   | ICU Level of Service  |   |  |   |   |   | H   |   |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |



| Lane Group              | EBL   | EBT  | EBR  | NBT  | NBR   | SBL   | SBT  |
|-------------------------|-------|------|------|------|-------|-------|------|
| Lane Group Flow (vph)   | 313   | 594  | 272  | 1522 | 976   | 910   | 1080 |
| v/c Ratio               | 0.95  | 0.92 | 0.66 | 0.68 | 1.25  | 2.01  | 0.42 |
| Control Delay           | 91.2  | 72.3 | 29.2 | 31.0 | 151.1 | 478.1 | 8.6  |
| Queue Delay             | 42.9  | 0.0  | 0.0  | 1.9  | 0.0   | 3.3   | 41.2 |
| Total Delay             | 134.0 | 72.3 | 29.2 | 32.9 | 151.1 | 481.3 | 49.8 |
| Queue Length 50th (ft)  | 264   | 261  | 90   | 368  | ~949  | ~1188 | 140  |
| Queue Length 95th (ft)  | #438  | #361 | 192  | 423  | #1120 | m#804 | m106 |
| Internal Link Dist (ft) |       | 62   |      | 300  |       |       | 174  |
| Turn Bay Length (ft)    |       |      |      |      | 100   |       |      |
| Base Capacity (vph)     | 329   | 647  | 410  | 2251 | 781   | 453   | 2561 |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0     | 126   | 1559 |
| Spillback Cap Reductn   | 46    | 0    | 0    | 541  | 0     | 0     | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0     | 0     | 0    |
| Reduced v/c Ratio       | 1.11  | 0.92 | 0.66 | 0.89 | 1.25  | 2.78  | 1.08 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

19: Menchaca Road & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM

| Movement                          | EBL  | EBT  | EBR    | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL   | SBT     | SBR                       |      |
|-----------------------------------|------|------|--------|------|------|------|------|------|-------|-------|---------|---------------------------|------|
| Lane Configurations               |      |      |        |      |      |      |      |      |       |       |         |                           |      |
| Traffic Volume (vph)              | 279  | 529  | 264    | 0    | 0    | 0    | 0    | 1446 | 839   | 737   | 1058    | 0                         |      |
| Future Volume (vph)               | 279  | 529  | 264    | 0    | 0    | 0    | 0    | 1446 | 839   | 737   | 1058    | 0                         |      |
| 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    |      |      |      |      | 5.0  | 5.0   | 5.0   | 5.0     |                           |      |
| Lane Util. Factor                 | 1.00 | 0.95 | 1.00   |      |      |      |      | 0.91 | 1.00  | 1.00  | 0.95    |                           |      |
| Frpb, ped/bikes                   | 1.00 | 1.00 | 0.99   |      |      |      |      | 1.00 | 0.99  | 1.00  | 1.00    |                           |      |
| Flpb, ped/bikes                   | 1.00 | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 1.00  | 1.00    |                           |      |
| Frt                               | 1.00 | 1.00 | 0.85   |      |      |      |      | 1.00 | 0.85  | 1.00  | 1.00    |                           |      |
| Flt Protected                     | 0.95 | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.95  | 1.00    |                           |      |
| Satd. Flow (prot)                 | 1787 | 3505 | 1532   |      |      |      |      | 5136 | 1579  | 1787  | 3505    |                           |      |
| Flt Permitted                     | 0.95 | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.95  | 1.00    |                           |      |
| Satd. Flow (perm)                 | 1787 | 3505 | 1532   |      |      |      |      | 5136 | 1579  | 1787  | 3505    |                           |      |
| Peak-hour factor, PHF             | 0.89 | 0.89 | 0.97   | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.86  | 0.81  | 0.98    | 0.92                      |      |
| Adj. Flow (vph)                   | 313  | 594  | 272    | 0    | 0    | 0    | 0    | 1522 | 976   | 910   | 1080    | 0                         |      |
| RTOR Reduction (vph)              | 0    | 0    | 126    | 0    | 0    | 0    | 0    | 0    | 89    | 0     | 0       | 0                         |      |
| Lane Group Flow (vph)             | 313  | 594  | 146    | 0    | 0    | 0    | 0    | 1522 | 887   | 910   | 1080    | 0                         |      |
| Confl. Peds. (#/hr)               |      |      |        |      |      |      |      |      | 1     | 1     |         |                           |      |
| Confl. Bikes (#/hr)               |      |      | 1      |      |      |      |      |      |       |       |         |                           |      |
| Heavy Vehicles (%)                | 1%   | 3%   | 4%     | 2%   | 2%   | 2%   | 2%   | 1%   | 1%    | 1%    | 3%      | 2%                        |      |
| Turn Type                         | Perm | NA   | Perm   |      |      |      |      | NA   | Perm  | Prot  | NA      |                           |      |
| Protected Phases                  |      | 8 10 |        |      |      |      |      | 1 2  |       | 6 7   | 1 2 6 7 |                           |      |
| Permitted Phases                  | 8 10 |      | 8 10   |      |      |      |      |      | 1 2   |       |         |                           |      |
| Actuated Green, G (s)             | 25.0 | 25.0 | 25.0   |      |      |      |      | 57.0 | 57.0  | 32.0  | 94.0    |                           |      |
| Effective Green, g (s)            | 25.0 | 25.0 | 25.0   |      |      |      |      | 57.0 | 57.0  | 32.0  | 94.0    |                           |      |
| Actuated g/C Ratio                | 0.19 | 0.19 | 0.19   |      |      |      |      | 0.44 | 0.44  | 0.25  | 0.72    |                           |      |
| Clearance Time (s)                |      |      |        |      |      |      |      |      |       |       |         |                           |      |
| Vehicle Extension (s)             |      |      |        |      |      |      |      |      |       |       |         |                           |      |
| Lane Grp Cap (vph)                | 343  | 674  | 294    |      |      |      |      | 2251 | 692   | 439   | 2534    |                           |      |
| v/s Ratio Prot                    |      | 0.17 |        |      |      |      |      | 0.30 |       | 0.51  | 0.31    |                           |      |
| v/s Ratio Perm                    | 0.18 |      | 0.10   |      |      |      |      |      | 0.56  |       |         |                           |      |
| v/c Ratio                         | 0.91 | 0.88 | 0.50   |      |      |      |      | 0.68 | 1.28  | 2.07  | 0.43    |                           |      |
| Uniform Delay, d1                 | 51.4 | 51.1 | 46.9   |      |      |      |      | 29.1 | 36.5  | 49.0  | 7.2     |                           |      |
| Progression Factor                | 1.00 | 1.00 | 1.00   |      |      |      |      | 1.00 | 1.00  | 0.70  | 1.24    |                           |      |
| Incremental Delay, d2             | 27.2 | 12.6 | 0.5    |      |      |      |      | 0.6  | 137.5 | 483.5 | 0.0     |                           |      |
| Delay (s)                         | 78.6 | 63.6 | 47.4   |      |      |      |      | 29.8 | 174.0 | 517.7 | 8.9     |                           |      |
| Level of Service                  | E    | E    | D      |      |      |      |      | C    | F     | F     | A       |                           |      |
| Approach Delay (s)                |      | 63.9 |        |      | 0.0  |      |      | 86.1 |       |       | 241.6   |                           |      |
| Approach LOS                      |      | E    |        |      | A    |      |      | F    |       |       | F       |                           |      |
| <b>Intersection Summary</b>       |      |      |        |      |      |      |      |      |       |       |         |                           |      |
| HCM 2000 Control Delay            |      |      | 136.1  |      |      |      |      |      |       |       |         | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |      |      | 1.65   |      |      |      |      |      |       |       |         |                           |      |
| Actuated Cycle Length (s)         |      |      | 130.0  |      |      |      |      |      |       |       |         | Sum of lost time (s)      | 32.0 |
| Intersection Capacity Utilization |      |      | 152.1% |      |      |      |      |      |       |       |         | ICU Level of Service      | H    |
| Analysis Period (min)             |      |      | 15     |      |      |      |      |      |       |       |         |                           |      |
| c Critical Lane Group             |      |      |        |      |      |      |      |      |       |       |         |                           |      |

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 41.5 |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 17   | 199  | 189  | 17   | 178  | 4    | 188  | 12   | 129  | 2    | 25   | 37   |
| Future Vol, veh/h        | 17   | 199  | 189  | 17   | 178  | 4    | 188  | 12   | 129  | 2    | 25   | 37   |
| Conflicting Peds, #/hr   | 15   | 0    | 4    | 4    | 0    | 15   | 9    | 0    | 15   | 15   | 0    | 9    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 50   | 66   | 74   | 95   | 58   | 60   | 76   | 75   | 60   | 60   | 60   | 75   |
| Heavy Vehicles, %        | 0    | 0    | 6    | 0    | 0    | 0    | 11   | 17   | 2    | 0    | 0    | 0    |
| Mvmt Flow                | 34   | 302  | 255  | 18   | 307  | 7    | 247  | 16   | 215  | 3    | 42   | 49   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |       | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-----|-----|
| Conflicting Flow All | 329    | 0 | 0 | 561    | 0 | 0 | 903    | 867   | 449   | 990    | 991 | 335 |
| Stage 1              | -      | - | - | -      | - | - | 502    | 502   | -     | 362    | 362 | -   |
| Stage 2              | -      | - | - | -      | - | - | 401    | 365   | -     | 628    | 629 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.21   | 6.67  | 6.22  | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.21   | 5.67  | -     | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.21   | 5.67  | -     | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.599  | 4.153 | 3.318 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1242   | - | - | 1020   | - | - | 249    | 275   | 610   | 227    | 248 | 712 |
| Stage 1              | -      | - | - | -      | - | - | 535    | 518   | -     | 661    | 629 | -   |
| Stage 2              | -      | - | - | -      | - | - | 608    | 598   | -     | 474    | 478 | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |       |       |        |     |     |
| Mov Cap-1 Maneuver   | 1224   | - | - | 1016   | - | - | ~ 187  | 253   | 599   | 128    | 228 | 696 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | ~ 187  | 253   | -     | 128    | 228 | -   |
| Stage 1              | -      | - | - | -      | - | - | 510    | 494   | -     | 624    | 607 | -   |
| Stage 2              | -      | - | - | -      | - | - | 511    | 577   | -     | 278    | 456 | -   |

| Approach             | EB  |  |  | WB  |  |  | NB    |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|-------|--|--|------|--|--|
| HCM Control Delay, s | 0.5 |  |  | 0.5 |  |  | 124.9 |  |  | 19.8 |  |  |
| HCM LOS              |     |  |  |     |  |  | F     |  |  | C    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 187   | 547   | 1224  | -   | -   | 1016  | -   | -   | 337   |
| HCM Lane V/C Ratio    | 1.323 | 0.422 | 0.028 | -   | -   | 0.018 | -   | -   | 0.28  |
| HCM Control Delay (s) | 226.3 | 16.3  | 8     | 0   | -   | 8.6   | 0   | -   | 19.8  |
| HCM Lane LOS          | F     | C     | A     | A   | -   | A     | A   | -   | C     |
| HCM 95th %tile Q(veh) | 14.1  | 2.1   | 0.1   | -   | -   | 0.1   | -   | -   | 1.1   |

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

21: S Lamar Blvd & Driveway A  
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted AM



| Movement                          | EBL   | EBR  | NBL  | NBT                  | SBT  | SBR  |      |      |      |  |
|-----------------------------------|-------|------|------|----------------------|------|------|------|------|------|--|
| Lane Configurations               |       |      |      |                      |      |      |      |      |      |  |
| Traffic Volume (veh/h)            | 0     | 0    | 0    | 2485                 | 1518 | 197  |      |      |      |  |
| Future Volume (Veh/h)             | 0     | 0    | 0    | 2485                 | 1518 | 197  |      |      |      |  |
| Sign Control                      | Stop  |      |      | Free                 |      | Free |      |      |      |  |
| Grade                             | 0%    |      |      | 0%                   |      | 0%   |      |      |      |  |
| Peak Hour Factor                  | 0.92  | 0.92 | 0.92 | 0.92                 | 0.92 | 0.92 |      |      |      |  |
| Hourly flow rate (vph)            | 0     | 0    | 0    | 2701                 | 1650 | 214  |      |      |      |  |
| <b>Pedestrians</b>                |       |      |      |                      |      |      |      |      |      |  |
| Lane Width (ft)                   |       |      |      |                      |      |      |      |      |      |  |
| Walking Speed (ft/s)              |       |      |      |                      |      |      |      |      |      |  |
| Percent Blockage                  |       |      |      |                      |      |      |      |      |      |  |
| Right turn flare (veh)            |       |      |      |                      |      |      |      |      |      |  |
| Median type                       |       |      |      | None                 | None |      |      |      |      |  |
| Median storage (veh)              |       |      |      |                      |      |      |      |      |      |  |
| Upstream signal (ft)              |       |      |      | 408                  | 941  |      |      |      |      |  |
| pX, platoon unblocked             | 0.56  |      |      |                      |      |      |      |      |      |  |
| vC, conflicting volume            | 2432  | 520  | 1864 |                      |      |      |      |      |      |  |
| vC1, stage 1 conf vol             |       |      |      |                      |      |      |      |      |      |  |
| vC2, stage 2 conf vol             |       |      |      |                      |      |      |      |      |      |  |
| vCu, unblocked vol                | 0     | 520  | 1864 |                      |      |      |      |      |      |  |
| tC, single (s)                    | 6.8   | 6.9  | 4.1  |                      |      |      |      |      |      |  |
| tC, 2 stage (s)                   |       |      |      |                      |      |      |      |      |      |  |
| tF (s)                            | 3.5   | 3.3  | 2.2  |                      |      |      |      |      |      |  |
| p0 queue free %                   | 100   | 100  | 100  |                      |      |      |      |      |      |  |
| cM capacity (veh/h)               | 572   | 501  | 320  |                      |      |      |      |      |      |  |
| Direction, Lane #                 | EB 1  | NB 1 | NB 2 | NB 3                 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |  |
| Volume Total                      | 0     | 675  | 675  | 675                  | 675  | 471  | 471  | 471  | 450  |  |
| Volume Left                       | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |
| Volume Right                      | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 214  |  |
| cSH                               | 1700  | 1700 | 1700 | 1700                 | 1700 | 1700 | 1700 | 1700 | 1700 |  |
| Volume to Capacity                | 0.00  | 0.40 | 0.40 | 0.40                 | 0.40 | 0.28 | 0.28 | 0.28 | 0.26 |  |
| Queue Length 95th (ft)            | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |
| Control Delay (s)                 | 0.0   | 0.0  | 0.0  | 0.0                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| Lane LOS                          | A     |      |      |                      |      |      |      |      |      |  |
| Approach Delay (s)                | 0.0   | 0.0  |      |                      |      |      | 0.0  |      |      |  |
| Approach LOS                      | A     |      |      |                      |      |      |      |      |      |  |
| <b>Intersection Summary</b>       |       |      |      |                      |      |      |      |      |      |  |
| Average Delay                     | 0.0   |      |      |                      |      |      |      |      |      |  |
| Intersection Capacity Utilization | 39.3% |      |      | ICU Level of Service |      |      |      |      | A    |  |
| Analysis Period (min)             | 15    |      |      |                      |      |      |      |      |      |  |



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.8  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    |      |      | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 115  | 0    | 0    | 1098 | 39   |
| Future Vol, veh/h        | 0    | 115  | 0    | 0    | 1098 | 39   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | -    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 125  | 0    | 0    | 1193 | 42   |

| Major/Minor          | Minor2 |      | Major2 |   |
|----------------------|--------|------|--------|---|
| Conflicting Flow All | -      | 618  | -      | 0 |
| Stage 1              | -      | -    | -      | - |
| Stage 2              | -      | -    | -      | - |
| Critical Hdwy        | -      | 7.14 | -      | - |
| Critical Hdwy Stg 1  | -      | -    | -      | - |
| Critical Hdwy Stg 2  | -      | -    | -      | - |
| Follow-up Hdwy       | -      | 3.92 | -      | - |
| Pot Cap-1 Maneuver   | 0      | 370  | -      | - |
| Stage 1              | 0      | -    | -      | - |
| Stage 2              | 0      | -    | -      | - |
| Platoon blocked, %   |        |      | -      | - |
| Mov Cap-1 Maneuver   | -      | 370  | -      | - |
| Mov Cap-2 Maneuver   | -      | -    | -      | - |
| Stage 1              | -      | -    | -      | - |
| Stage 2              | -      | -    | -      | - |

| Approach             | EB   | SB |
|----------------------|------|----|
| HCM Control Delay, s | 19.6 | 0  |
| HCM LOS              | C    |    |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-----|
| Capacity (veh/h)      | 370   | -   | -   |
| HCM Lane V/C Ratio    | 0.338 | -   | -   |
| HCM Control Delay (s) | 19.6  | -   | -   |
| HCM Lane LOS          | C     | -   | -   |
| HCM 95th %tile Q(veh) | 1.5   | -   | -   |

| Intersection             |      |       |      |      |      |      |
|--------------------------|------|-------|------|------|------|------|
| Int Delay, s/veh         | 4.5  |       |      |      |      |      |
| Movement                 | WBL  | WBR   | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↗ ↑↑↑ |      |      |      |      |
| Traffic Vol, veh/h       | 0    | 100   | 2225 | 215  | 0    | 0    |
| Future Vol, veh/h        | 0    | 100   | 2225 | 215  | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0     | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop  | Free | Free | Free | Free |
| RT Channelized           | -    | None  | -    | None | -    | None |
| Storage Length           | -    | 0     | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -     | 0    | -    | -    | -    |
| Grade, %                 | 0    | -     | 0    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92    | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2     | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 109   | 2418 | 234  | 0    | 0    |

| Major/Minor          | Minor1 | Major1 |   |
|----------------------|--------|--------|---|
| Conflicting Flow All | -      | 1326   | 0 |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |
| Critical Hdwy        | -      | 7.14   | - |
| Critical Hdwy Stg 1  | -      | -      | - |
| Critical Hdwy Stg 2  | -      | -      | - |
| Follow-up Hdwy       | -      | 3.92   | - |
| Pot Cap-1 Maneuver   | 0      | 125    | - |
| Stage 1              | 0      | -      | - |
| Stage 2              | 0      | -      | - |
| Platoon blocked, %   |        | -      | - |
| Mov Cap-1 Maneuver   | -      | 125    | - |
| Mov Cap-2 Maneuver   | -      | -      | - |
| Stage 1              | -      | -      | - |
| Stage 2              | -      | -      | - |

| Approach             | WB    | NB |
|----------------------|-------|----|
| HCM Control Delay, s | 114.6 | 0  |
| HCM LOS              | F     |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 |
|-----------------------|-----|----------|
| Capacity (veh/h)      | -   | 125      |
| HCM Lane V/C Ratio    | -   | 0.87     |
| HCM Control Delay (s) | -   | 114.6    |
| HCM Lane LOS          | -   | F        |
| HCM 95th %tile Q(veh) | -   | 5.4      |



| Lane Group              | WBL  | WBR  | NBT    | NBR  | SBL  | SBT   |
|-------------------------|------|------|--------|------|------|-------|
| Lane Group Flow (vph)   | 726  | 610  | 2470   | 971  | 580  | 2866  |
| v/c Ratio               | 0.82 | 0.80 | 1.53   | 1.06 | 0.94 | 1.20  |
| Control Delay           | 55.5 | 39.4 | 265.9  | 47.0 | 79.1 | 119.7 |
| Queue Delay             | 0.0  | 0.0  | 0.0    | 0.0  | 0.0  | 0.0   |
| Total Delay             | 55.5 | 39.4 | 265.9  | 47.0 | 79.1 | 119.7 |
| Queue Length 50th (ft)  | 309  | 443  | ~1594  | ~723 | 261  | ~1604 |
| Queue Length 95th (ft)  | 362  | 614  | m#1323 | m169 | #314 | #1722 |
| Internal Link Dist (ft) | 497  |      | 121    |      |      | 322   |
| Turn Bay Length (ft)    |      | 125  |        |      | 150  |       |
| Base Capacity (vph)     | 890  | 765  | 1614   | 916  | 616  | 2382  |
| Starvation Cap Reductn  | 0    | 0    | 0      | 0    | 0    | 0     |
| Spillback Cap Reductn   | 0    | 0    | 0      | 0    | 0    | 0     |
| Storage Cap Reductn     | 0    | 0    | 0      | 0    | 0    | 0     |
| Reduced v/c Ratio       | 0.82 | 0.80 | 1.53   | 1.06 | 0.94 | 1.20  |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

1: S Lamar Blvd & W Oltorf Street  
 HCM Signalized Intersection Capacity Analysis



| Movement               | WBL  | WBR   | NBT   | NBR  | SBL  | SBT   |
|------------------------|------|-------|-------|------|------|-------|
| Lane Configurations    |      |       |       |      |      |       |
| Traffic Volume (vph)   | 624  | 573   | 2322  | 825  | 476  | 2665  |
| Future Volume (vph)    | 624  | 573   | 2322  | 825  | 476  | 2665  |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  |
| Total Lost time (s)    | 5.0  | 5.0   | 5.0   | 5.0  | 5.0  | 5.0   |
| Lane Util. Factor      | 0.97 | 1.00  | 0.95  | 1.00 | 0.97 | 0.95  |
| Frpb, ped/bikes        | 1.00 | 1.00  | 1.00  | 0.97 | 1.00 | 1.00  |
| Flpb, ped/bikes        | 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  |
| Flt Protected          | 0.95 | 1.00  | 1.00  | 1.00 | 0.95 | 1.00  |
| Satd. Flow (prot)      | 3433 | 1615  | 3574  | 1543 | 3467 | 3574  |
| Flt Permitted          | 0.95 | 1.00  | 1.00  | 1.00 | 0.95 | 1.00  |
| Satd. Flow (perm)      | 3433 | 1615  | 3574  | 1543 | 3467 | 3574  |
| Peak-hour factor, PHF  | 0.86 | 0.94  | 0.94  | 0.85 | 0.82 | 0.93  |
| Adj. Flow (vph)        | 726  | 610   | 2470  | 971  | 580  | 2866  |
| RTOR Reduction (vph)   | 0    | 0     | 0     | 219  | 0    | 0     |
| Lane Group Flow (vph)  | 726  | 610   | 2470  | 752  | 580  | 2866  |
| Confl. Peds. (#/hr)    |      | 10    |       | 6    | 6    |       |
| Confl. Bikes (#/hr)    |      |       |       | 5    |      |       |
| Heavy Vehicles (%)     | 2%   | 0%    | 1%    | 2%   | 1%   | 1%    |
| Turn Type              | Prot | pt+ov | NA    | Perm | Prot | NA    |
| Protected Phases       | 4    | 1 4   | 2     |      | 1    | 6     |
| Permitted Phases       |      | 4     |       | 2    |      |       |
| Actuated Green, G (s)  | 35.0 | 64.0  | 61.0  | 61.0 | 24.0 | 90.0  |
| Effective Green, g (s) | 35.0 | 64.0  | 61.0  | 61.0 | 24.0 | 90.0  |
| Actuated g/C Ratio     | 0.26 | 0.47  | 0.45  | 0.45 | 0.18 | 0.67  |
| Clearance Time (s)     | 5.0  |       | 5.0   | 5.0  | 5.0  | 5.0   |
| Vehicle Extension (s)  | 1.0  |       | 1.0   | 1.0  | 1.0  | 1.0   |
| Lane Grp Cap (vph)     | 890  | 765   | 1614  | 697  | 616  | 2382  |
| v/s Ratio Prot         | 0.21 | c0.38 | c0.69 |      | 0.17 | c0.80 |
| v/s Ratio Perm         |      |       |       | 0.49 |      |       |
| v/c Ratio              | 0.82 | 0.80  | 1.53  | 1.08 | 0.94 | 1.20  |
| Uniform Delay, d1      | 47.0 | 30.0  | 37.0  | 37.0 | 54.8 | 22.5  |
| Progression Factor     | 1.00 | 1.00  | 0.85  | 0.72 | 1.00 | 1.00  |
| Incremental Delay, d2  | 8.2  | 8.5   | 239.0 | 38.3 | 24.4 | 95.7  |
| Delay (s)              | 55.1 | 38.5  | 270.2 | 64.8 | 79.2 | 118.2 |
| Level of Service       | E    | D     | F     | E    | E    | F     |
| Approach Delay (s)     | 47.5 |       | 212.3 |      |      | 111.6 |
| Approach LOS           | D    |       | F     |      |      | F     |

| Intersection Summary              |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 143.3  | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio | 1.29   |                           |      |
| Actuated Cycle Length (s)         | 135.0  | Sum of lost time (s)      | 15.0 |
| Intersection Capacity Utilization | 109.0% | ICU Level of Service      | H    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NBL   | NBT    | NBR  | SBL   | SBT    |
|-------------------------|------|------|------|------|-------|--------|------|-------|--------|
| Lane Group Flow (vph)   | 179  | 121  | 333  | 164  | 298   | 2848   | 229  | 65    | 3006   |
| v/c Ratio               | 0.76 | 0.27 | 0.78 | 0.79 | 1.62  | 1.17   | 0.22 | 1.16  | 1.49   |
| Control Delay           | 64.5 | 42.5 | 49.1 | 74.2 | 305.9 | 104.2  | 7.6  | 122.8 | 248.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0    | 0.0  | 0.0   | 0.0    |
| Total Delay             | 64.5 | 42.5 | 49.1 | 74.2 | 305.9 | 104.2  | 7.6  | 122.8 | 248.0  |
| Queue Length 50th (ft)  | 132  | 86   | 212  | 119  | ~334  | ~1575  | 59   | ~67   | ~1920  |
| Queue Length 95th (ft)  | 164  | 69   | 298  | 154  | m#282 | m#1171 | m48  | m#56  | m#1551 |
| Internal Link Dist (ft) |      | 215  |      | 74   |       | 201    |      |       | 588    |
| Turn Bay Length (ft)    | 75   |      | 50   |      | 50    |        | 125  | 50    |        |
| Base Capacity (vph)     | 234  | 506  | 469  | 255  | 184   | 2428   | 1061 | 56    | 2018   |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0     | 0      | 0    | 0     | 0      |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0     | 0      | 0    | 0     | 0      |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0     | 0      | 0    | 0     | 0      |
| Reduced v/c Ratio       | 0.76 | 0.24 | 0.71 | 0.64 | 1.62  | 1.17   | 0.22 | 1.16  | 1.49   |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

2: S Lamar Blvd & Bluebonnet Lane  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement               | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|------------------------|-------|------|-------|------|------|------|-------|-------|------|-------|-------|------|
| Lane Configurations    | ↖     | ↑    | ↗     |      | ↖    |      | ↖     | ↑↑    | ↗    | ↖     | ↑↗    |      |
| Traffic Volume (vph)   | 136   | 57   | 286   | 0    | 64   | 72   | 250   | 2563  | 174  | 47    | 2883  | 2    |
| Future Volume (vph)    | 136   | 57   | 286   | 0    | 64   | 72   | 250   | 2563  | 174  | 47    | 2883  | 2    |
| 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  |      | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   |      |
| Lane Util. Factor      | 1.00  | 1.00 | 1.00  |      | 1.00 |      | 1.00  | 0.95  | 1.00 | 1.00  | 0.95  |      |
| Frpb, ped/bikes        | 1.00  | 1.00 | 0.96  |      | 0.97 |      | 1.00  | 1.00  | 0.95 | 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  |      |
| Frt                    | 1.00  | 1.00 | 0.85  |      | 0.93 |      | 1.00  | 1.00  | 0.85 | 1.00  | 1.00  |      |
| Flt Protected          | 0.95  | 1.00 | 1.00  |      | 1.00 |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |      |
| Satd. Flow (prot)      | 1800  | 1900 | 1541  |      | 1729 |      | 1787  | 3574  | 1529 | 1805  | 3539  |      |
| Flt Permitted          | 0.26  | 1.00 | 1.00  |      | 1.00 |      | 0.05  | 1.00  | 1.00 | 0.05  | 1.00  |      |
| Satd. Flow (perm)      | 500   | 1900 | 1541  |      | 1729 |      | 92    | 3574  | 1529 | 99    | 3539  |      |
| Peak-hour factor, PHF  | 0.76  | 0.47 | 0.86  | 0.69 | 0.75 | 0.91 | 0.84  | 0.90  | 0.76 | 0.72  | 0.96  | 0.60 |
| Adj. Flow (vph)        | 179   | 121  | 333   | 0    | 85   | 79   | 298   | 2848  | 229  | 65    | 3003  | 3    |
| RTOR Reduction (vph)   | 0     | 0    | 60    | 0    | 24   | 0    | 0     | 0     | 23   | 0     | 0     | 0    |
| Lane Group Flow (vph)  | 179   | 121  | 273   | 0    | 140  | 0    | 298   | 2848  | 206  | 65    | 3006  | 0    |
| Confl. Peds. (#/hr)    | 12    |      | 12    | 12   |      | 12   | 8     |       | 9    | 9     |       | 8    |
| Confl. Bikes (#/hr)    |       |      | 6     |      |      | 5    |       |       | 12   |       |       | 4    |
| Heavy Vehicles (%)     | 0%    | 0%   | 1%    | 0%   | 0%   | 0%   | 1%    | 1%    | 0%   | 0%    | 2%    | 0%   |
| Turn Type              | pm+pt | NA   | Perm  |      | NA   |      | pm+pt | NA    | Perm | Perm  | NA    |      |
| Protected Phases       | 7     | 4    |       |      | 8    |      | 5     | 2     |      |       | 6     |      |
| Permitted Phases       | 4     |      | 4     |      |      |      | 2     |       | 2    | 6     |       |      |
| Actuated Green, G (s)  | 32.3  | 32.3 | 32.3  |      | 14.3 |      | 91.7  | 91.7  | 91.7 | 77.0  | 77.0  |      |
| Effective Green, g (s) | 32.3  | 32.3 | 32.3  |      | 14.3 |      | 91.7  | 91.7  | 91.7 | 77.0  | 77.0  |      |
| Actuated g/C Ratio     | 0.24  | 0.24 | 0.24  |      | 0.11 |      | 0.68  | 0.68  | 0.68 | 0.57  | 0.57  |      |
| Clearance Time (s)     | 6.0   | 6.0  | 6.0   |      | 6.0  |      | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   |      |
| Vehicle Extension (s)  | 2.0   | 2.0  | 2.0   |      | 2.0  |      | 1.0   | 1.0   | 1.0  | 1.0   | 1.0   |      |
| Lane Grp Cap (vph)     | 235   | 454  | 368   |      | 183  |      | 184   | 2427  | 1038 | 56    | 2018  |      |
| v/s Ratio Prot         | 0.07  | 0.06 |       |      | 0.08 |      | c0.12 | 0.80  |      |       | 0.85  |      |
| v/s Ratio Perm         | c0.11 |      | c0.18 |      |      |      | c0.98 |       | 0.13 | 0.66  |       |      |
| v/c Ratio              | 0.76  | 0.27 | 0.74  |      | 0.76 |      | 1.62  | 1.17  | 0.20 | 1.16  | 1.49  |      |
| Uniform Delay, d1      | 44.0  | 41.7 | 47.5  |      | 58.7 |      | 47.5  | 21.6  | 8.0  | 29.0  | 29.0  |      |
| Progression Factor     | 1.00  | 1.00 | 1.00  |      | 1.00 |      | 0.84  | 1.17  | 1.29 | 1.10  | 1.09  |      |
| Incremental Delay, d2  | 12.3  | 0.1  | 6.9   |      | 15.6 |      | 281.1 | 78.5  | 0.0  | 89.3  | 220.6 |      |
| Delay (s)              | 56.3  | 41.8 | 54.4  |      | 74.3 |      | 320.9 | 103.8 | 10.4 | 121.2 | 252.0 |      |
| Level of Service       | E     | D    | D     |      | E    |      | F     | F     | B    | F     | F     |      |
| Approach Delay (s)     |       | 52.5 |       |      | 74.3 |      |       | 116.6 |      |       | 249.3 |      |
| Approach LOS           |       | D    |       |      | E    |      |       | F     |      |       | F     |      |

Intersection Summary

|                                   |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 166.3  | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio | 1.49   |                           |      |
| Actuated Cycle Length (s)         | 135.0  | Sum of lost time (s)      | 22.0 |
| Intersection Capacity Utilization | 127.9% | ICU Level of Service      | H    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |



| Lane Group              | WBR   | NBT    | NBR  | SBL   | SBT   |
|-------------------------|-------|--------|------|-------|-------|
| Lane Group Flow (vph)   | 1024  | 2589   | 43   | 952   | 2850  |
| v/c Ratio               | 1.22  | 1.18   | 0.04 | 1.80  | 1.21  |
| Control Delay           | 151.6 | 98.7   | 1.5  | 395.4 | 106.9 |
| Queue Delay             | 0.0   | 0.1    | 0.0  | 0.0   | 0.4   |
| Total Delay             | 151.6 | 98.8   | 1.5  | 395.4 | 107.3 |
| Queue Length 50th (ft)  | ~627  | ~1461  | 2    | ~1287 | ~1585 |
| Queue Length 95th (ft)  | #776  | m#1448 | m2   | m#860 | m156  |
| Internal Link Dist (ft) |       | 324    |      |       | 498   |
| Turn Bay Length (ft)    |       |        |      | 100   |       |
| Base Capacity (vph)     | 837   | 2197   | 977  | 529   | 2359  |
| Starvation Cap Reductn  | 0     | 92     | 0    | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0      | 0    | 0     | 352   |
| Storage Cap Reductn     | 0     | 0      | 0    | 0     | 0     |
| Reduced v/c Ratio       | 1.22  | 1.23   | 0.04 | 1.80  | 1.42  |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

3: S Lamar Blvd & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

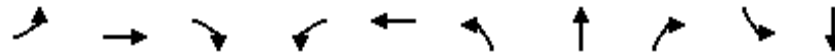


| Movement                          | WBL   | WBR   | NBT    | NBR  | SBL                       | SBT   |
|-----------------------------------|-------|-------|--------|------|---------------------------|-------|
| Lane Configurations               |       | ↔↔    | ↕↕     | ↗    | ↘                         | ↕↕    |
| Traffic Volume (vph)              | 0     | 942   | 2330   | 32   | 819                       | 2622  |
| Future Volume (vph)               | 0     | 942   | 2330   | 32   | 819                       | 2622  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900   | 1900 | 1900                      | 1900  |
| Total Lost time (s)               |       | 6.0   | 6.0    | 6.0  | 6.0                       | 6.0   |
| Lane Util. Factor                 |       | 0.88  | 0.95   | 1.00 | 1.00                      | 0.95  |
| Frbp, ped/bikes                   |       | 1.00  | 1.00   | 0.98 | 1.00                      | 1.00  |
| Flpb, ped/bikes                   |       | 1.00  | 1.00   | 1.00 | 1.00                      | 1.00  |
| Frt                               |       | 0.85  | 1.00   | 0.85 | 1.00                      | 1.00  |
| Flt Protected                     |       | 1.00  | 1.00   | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |       | 2814  | 3574   | 1581 | 1787                      | 3539  |
| Flt Permitted                     |       | 1.00  | 1.00   | 1.00 | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |       | 2814  | 3574   | 1581 | 1787                      | 3539  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.90   | 0.75 | 0.86                      | 0.92  |
| Adj. Flow (vph)                   | 0     | 1024  | 2589   | 43   | 952                       | 2850  |
| RTOR Reduction (vph)              | 0     | 4     | 0      | 5    | 0                         | 0     |
| Lane Group Flow (vph)             | 0     | 1020  | 2589   | 38   | 952                       | 2850  |
| Confl. Peds. (#/hr)               |       | 7     |        | 6    | 6                         |       |
| Confl. Bikes (#/hr)               |       | 1     |        | 9    |                           |       |
| Heavy Vehicles (%)                | 2%    | 1%    | 1%     | 0%   | 1%                        | 2%    |
| Turn Type                         |       | pt+ov | NA     | Perm | Prot                      | NA    |
| Protected Phases                  |       | 1 4   | 2 3    |      | 1 4                       | 1 2   |
| Permitted Phases                  |       |       |        | 2 3  |                           |       |
| Actuated Green, G (s)             |       | 40.0  | 83.0   | 83.0 | 40.0                      | 90.0  |
| Effective Green, g (s)            |       | 40.0  | 83.0   | 83.0 | 40.0                      | 90.0  |
| Actuated g/C Ratio                |       | 0.30  | 0.61   | 0.61 | 0.30                      | 0.67  |
| Clearance Time (s)                |       |       |        |      |                           |       |
| Vehicle Extension (s)             |       |       |        |      |                           |       |
| Lane Grp Cap (vph)                |       | 833   | 2197   | 972  | 529                       | 2359  |
| v/s Ratio Prot                    |       | 0.36  | c0.72  |      | c0.53                     | c0.81 |
| v/s Ratio Perm                    |       |       |        | 0.02 |                           |       |
| v/c Ratio                         |       | 1.23  | 1.18   | 0.04 | 1.80                      | 1.21  |
| Uniform Delay, d1                 |       | 47.5  | 26.0   | 10.3 | 47.5                      | 22.5  |
| Progression Factor                |       | 1.00  | 0.50   | 0.19 | 1.37                      | 0.28  |
| Incremental Delay, d2             |       | 111.9 | 81.7   | 0.0  | 360.5                     | 94.1  |
| Delay (s)                         |       | 159.4 | 94.6   | 1.9  | 425.6                     | 100.3 |
| Level of Service                  |       | F     | F      | A    | F                         | F     |
| Approach Delay (s)                | 159.4 |       | 93.1   |      |                           | 181.8 |
| Approach LOS                      | F     |       | F      |      |                           | F     |
| <b>Intersection Summary</b>       |       |       |        |      |                           |       |
| HCM 2000 Control Delay            |       |       | 147.4  |      | HCM 2000 Level of Service | F     |
| HCM 2000 Volume to Capacity ratio |       |       | 1.56   |      |                           |       |
| Actuated Cycle Length (s)         |       |       | 135.0  |      | Sum of lost time (s)      | 24.0  |
| Intersection Capacity Utilization |       |       | 136.4% |      | ICU Level of Service      | H     |
| Analysis Period (min)             |       |       | 15     |      |                           |       |
| c Critical Lane Group             |       |       |        |      |                           |       |



4: S Lamar Blvd & Barton Skyway/Lightsey Road  
Queues

Brodie Oaks Center TIA  
Imps-Phase 3-2036 Site+Forecasted PM



| Lane Group              | EBL   | EBT  | EBR  | WBL   | WBT  | NBL   | NBT   | NBR  | SBL   | SBT    |
|-------------------------|-------|------|------|-------|------|-------|-------|------|-------|--------|
| Lane Group Flow (vph)   | 158   | 237  | 301  | 133   | 235  | 318   | 2406  | 116  | 136   | 2798   |
| v/c Ratio               | 0.90  | 0.73 | 0.82 | 1.30  | 0.39 | 2.65  | 1.01  | 0.11 | 2.67  | 1.26   |
| Control Delay           | 100.4 | 67.5 | 50.1 | 234.5 | 49.0 | 769.6 | 20.5  | 0.3  | 775.7 | 132.0  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 35.1  | 0.0  | 0.0   | 0.1    |
| Total Delay             | 100.4 | 67.5 | 50.1 | 234.5 | 49.0 | 769.6 | 55.6  | 0.3  | 775.7 | 132.1  |
| Queue Length 50th (ft)  | 137   | 199  | 157  | ~149  | 92   | ~471  | ~1144 | 1    | ~206  | ~1652  |
| Queue Length 95th (ft)  | #255  | 249  | 215  | #285  | 125  | m#428 | m751  | m1   | m#164 | m#1196 |
| Internal Link Dist (ft) |       | 257  |      |       | 238  |       | 436   |      |       | 324    |
| Turn Bay Length (ft)    | 90    |      |      | 100   |      | 125   |       | 160  | 100   |        |
| Base Capacity (vph)     | 176   | 323  | 369  | 102   | 610  | 120   | 2382  | 1061 | 51    | 2217   |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0     | 0    | 0     | 0     | 0    | 0     | 104    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0     | 0    | 0     | 328   | 0    | 0     | 0      |
| Storage Cap Reductn     | 0     | 0    | 0    | 0     | 0    | 0     | 0     | 0    | 0     | 0      |
| Reduced v/c Ratio       | 0.90  | 0.73 | 0.82 | 1.30  | 0.39 | 2.65  | 1.17  | 0.11 | 2.67  | 1.32   |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

4: S Lamar Blvd & Barton Skyway/Lightsey Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

| Movement                          | EBL   | EBT  | EBR    | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR                       |                      |   |
|-----------------------------------|-------|------|--------|-------|-------|------|-------|-------|------|-------|-------|---------------------------|----------------------|---|
| Lane Configurations               |       |      |        |       |       |      |       |       |      |       |       |                           |                      |   |
| Traffic Volume (vph)              | 136   | 185  | 238    | 121   | 170   | 21   | 280   | 2165  | 102  | 102   | 2421  | 81                        |                      |   |
| Future Volume (vph)               | 136   | 185  | 238    | 121   | 170   | 21   | 280   | 2165  | 102  | 102   | 2421  | 81                        |                      |   |
| 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   | 6.0  | 6.0   | 6.0   |                           |                      |   |
| Lane Util. Factor                 | 1.00  | 1.00 | 1.00   | 1.00  | 0.95  |      | 1.00  | 0.95  | 1.00 | 1.00  | 0.95  |                           |                      |   |
| Frpb, ped/bikes                   | 1.00  | 1.00 | 0.98   | 1.00  | 1.00  |      | 1.00  | 1.00  | 0.96 | 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  | 1.00 | 0.85   | 1.00  | 0.98  |      | 1.00  | 1.00  | 0.85 | 1.00  | 0.99  |                           |                      |   |
| Flt Protected                     | 0.95  | 1.00 | 1.00   | 0.95  | 1.00  |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |                           |                      |   |
| Satd. Flow (prot)                 | 1799  | 1900 | 1578   | 1797  | 3520  |      | 1805  | 3574  | 1555 | 1736  | 3519  |                           |                      |   |
| Flt Permitted                     | 0.55  | 1.00 | 1.00   | 0.32  | 1.00  |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |                           |                      |   |
| Satd. Flow (perm)                 | 1034  | 1900 | 1578   | 604   | 3520  |      | 1805  | 3574  | 1555 | 1736  | 3519  |                           |                      |   |
| Peak-hour factor, PHF             | 0.86  | 0.78 | 0.79   | 0.91  | 0.85  | 0.60 | 0.88  | 0.90  | 0.88 | 0.75  | 0.90  | 0.75                      |                      |   |
| Adj. Flow (vph)                   | 158   | 237  | 301    | 133   | 200   | 35   | 318   | 2406  | 116  | 136   | 2690  | 108                       |                      |   |
| RTOR Reduction (vph)              | 0     | 0    | 100    | 0     | 11    | 0    | 0     | 0     | 24   | 0     | 2     | 0                         |                      |   |
| Lane Group Flow (vph)             | 158   | 237  | 201    | 133   | 224   | 0    | 318   | 2406  | 92   | 136   | 2796  | 0                         |                      |   |
| Confl. Peds. (#/hr)               | 3     |      | 5      | 5     |       | 3    | 5     |       | 18   | 18    |       | 5                         |                      |   |
| Confl. Bikes (#/hr)               |       |      | 2      |       |       |      |       |       | 7    |       |       | 8                         |                      |   |
| Heavy Vehicles (%)                | 0%    | 0%   | 0%     | 0%    | 0%    | 0%   | 0%    | 1%    | 0%   | 4%    | 2%    | 0%                        |                      |   |
| Turn Type                         | Perm  | NA   | Perm   | Perm  | NA    |      | Prot  | NA    | Perm | Prot  | NA    |                           |                      |   |
| Protected Phases                  |       | 8    |        |       | 8     |      | 5     | 5 6   |      | 7     | 6 7   |                           |                      |   |
| Permitted Phases                  | 8     |      | 8      | 8     |       |      |       |       | 5 6  |       |       |                           |                      |   |
| Actuated Green, G (s)             | 23.0  | 23.0 | 23.0   | 23.0  | 23.0  |      | 9.0   | 90.0  | 90.0 | 4.0   | 85.0  |                           |                      |   |
| Effective Green, g (s)            | 23.0  | 23.0 | 23.0   | 23.0  | 23.0  |      | 9.0   | 90.0  | 90.0 | 4.0   | 85.0  |                           |                      |   |
| Actuated g/C Ratio                | 0.17  | 0.17 | 0.17   | 0.17  | 0.17  |      | 0.07  | 0.67  | 0.67 | 0.03  | 0.63  |                           |                      |   |
| 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   |      | 1.0   |       |      | 1.0   |       |                           |                      |   |
| Lane Grp Cap (vph)                | 176   | 323  | 268    | 102   | 599   |      | 120   | 2382  | 1036 | 51    | 2215  |                           |                      |   |
| v/s Ratio Prot                    |       | 0.12 |        |       | 0.06  |      | c0.18 | c0.67 |      | c0.08 | c0.79 |                           |                      |   |
| v/s Ratio Perm                    | 0.15  |      | 0.13   | c0.22 |       |      |       |       | 0.06 |       |       |                           |                      |   |
| v/c Ratio                         | 0.90  | 0.73 | 0.75   | 1.30  | 0.37  |      | 2.65  | 1.01  | 0.09 | 2.67  | 1.26  |                           |                      |   |
| Uniform Delay, d1                 | 54.8  | 53.1 | 53.3   | 56.0  | 49.6  |      | 63.0  | 22.5  | 8.0  | 65.5  | 25.0  |                           |                      |   |
| Progression Factor                | 1.00  | 1.00 | 1.00   | 1.00  | 1.00  |      | 1.21  | 0.48  | 0.07 | 0.72  | 0.24  |                           |                      |   |
| Incremental Delay, d2             | 45.3  | 13.8 | 17.3   | 191.0 | 1.8   |      | 744.7 | 8.3   | 0.0  | 755.0 | 118.3 |                           |                      |   |
| Delay (s)                         | 100.1 | 66.9 | 70.6   | 247.0 | 51.4  |      | 820.7 | 19.0  | 0.6  | 801.9 | 124.4 |                           |                      |   |
| Level of Service                  | F     | E    | E      | F     | D     |      | F     | B     | A    | F     | F     |                           |                      |   |
| Approach Delay (s)                |       | 76.0 |        |       | 122.1 |      |       | 108.1 |      |       | 155.8 |                           |                      |   |
| Approach LOS                      |       | E    |        |       | F     |      |       | F     |      |       | F     |                           |                      |   |
| <b>Intersection Summary</b>       |       |      |        |       |       |      |       |       |      |       |       |                           |                      |   |
| HCM 2000 Control Delay            |       |      | 126.1  |       |       |      |       |       |      |       |       | HCM 2000 Level of Service | F                    |   |
| HCM 2000 Volume to Capacity ratio |       |      | 1.49   |       |       |      |       |       |      |       |       |                           |                      |   |
| Actuated Cycle Length (s)         |       |      | 135.0  |       |       |      |       |       |      |       | 24.0  |                           |                      |   |
| Intersection Capacity Utilization |       |      | 137.5% |       |       |      |       |       |      |       |       |                           | ICU Level of Service | H |
| Analysis Period (min)             |       |      | 15     |       |       |      |       |       |      |       |       |                           |                      |   |
| c Critical Lane Group             |       |      |        |       |       |      |       |       |      |       |       |                           |                      |   |



| Lane Group              | EBT  | WBL  | WBT  | WBR  | NBL   | NBT   | NBR  | SBL   | SBT  |
|-------------------------|------|------|------|------|-------|-------|------|-------|------|
| Lane Group Flow (vph)   | 156  | 211  | 18   | 300  | 49    | 2484  | 215  | 329   | 2549 |
| v/c Ratio               | 0.49 | 0.91 | 0.05 | 0.74 | 0.88  | 1.14  | 0.22 | 1.81  | 0.99 |
| Control Delay           | 50.7 | 91.3 | 43.4 | 41.5 | 118.7 | 97.9  | 5.5  | 397.1 | 10.0 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  |
| Total Delay             | 50.7 | 91.3 | 43.4 | 41.5 | 118.7 | 97.9  | 5.5  | 397.1 | 10.0 |
| Queue Length 50th (ft)  | 115  | 182  | 13   | 150  | 34    | ~1340 | 32   | ~395  | 142  |
| Queue Length 95th (ft)  | 116  | #250 | 23   | 212  | #103  | #1466 | 62   | m#291 | m121 |
| Internal Link Dist (ft) | 270  |      | 212  |      |       | 208   |      |       | 469  |
| Turn Bay Length (ft)    |      | 120  |      | 100  | 95    |       |      | 125   |      |
| Base Capacity (vph)     | 319  | 233  | 394  | 404  | 56    | 2170  | 961  | 182   | 2562 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0     | 0     | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0     | 0     | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0     | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.49 | 0.91 | 0.05 | 0.74 | 0.88  | 1.14  | 0.22 | 1.81  | 0.99 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.























# 95th percentile volume exceeds capacity, queue may be longer.

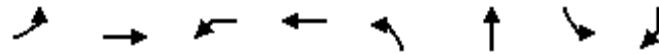
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

5: S Lamar Blvd & Private Driveway/Panther Trail  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 50  | 16  | 45  | 160   | 11  | 240   | 39  | 2360  | 185   | 286   | 2419  | 20  |
| Future Volume (veh/h)        | 50  | 16  | 45  | 160   | 11  | 240   | 39  | 2360  | 185   | 286   | 2419  | 20  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.99  |   | 0.97  | 0.99  |   | 0.97  | 1.00  |   | 0.97  | 1.00  |   | 0.97  |
| 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  |
| Adj Sat Flow, veh/h/ln       | 1900  | 1900  | 1900  | 1900  | 1900  | 1810  | 1900  | 1881  | 1863  | 1827  | 1881  | 1900  |
| Adj Flow Rate, veh/h         | 71  | 27  | 58  | 211   | 18  | 300   | 49  | 2484  | 215   | 329   | 2520  | 29  |
| Adj No. of Lanes             | 0   | 1   | 0   | 1   | 1   | 1   | 1   | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 0.70  | 0.60  | 0.78  | 0.76  | 0.60  | 0.80  | 0.79  | 0.95  | 0.86  | 0.87  | 0.96  | 0.69  |
| Percent Heavy Veh, %         | 0   | 0   | 0   | 0   | 0   | 5   | 0   | 1   | 2   | 4   | 1   | 0   |
| Cap, veh/h                   | 153   | 63  | 105   | 291   | 394   | 308   | 62  | 2171  | 932   | 182   | 2600  | 30  |
| Arrive On Green              | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.61  | 0.61  | 0.61  | 0.07  | 0.72  | 0.72  |
| Sat Flow, veh/h              | 552   | 304   | 507   | 1319  | 1900  | 1484  | 127   | 3574  | 1534  | 1740  | 3618  | 42  |
| Grp Volume(v), veh/h         | 156   | 0   | 0   | 211   | 18  | 300   | 49  | 2484  | 215   | 329   | 1242  | 1307  |
| Grp Sat Flow(s),veh/h/ln     | 1363  | 0   | 0   | 1319  | 1900  | 1484  | 127   | 1787  | 1534  | 1740  | 1787  | 1873  |
| Q Serve(g_s), s              | 11.0  | 0.0   | 0.0   | 11.4  | 1.0   | 27.1  | 9.2   | 82.0  | 8.6   | 10.0  | 86.5  | 87.8  |
| Cycle Q Clear(g_c), s        | 13.4  | 0.0   | 0.0   | 24.8  | 1.0   | 27.1  | 82.0  | 82.0  | 8.6   | 10.0  | 86.5  | 87.8  |
| Prop In Lane                 | 0.46  |   | 0.37  | 1.00  |   | 1.00  | 1.00  |   | 1.00  | 1.00  |   | 0.02  |
| Lane Grp Cap(c), veh/h       | 321   | 0   | 0   | 291   | 394   | 308   | 62  | 2171  | 932   | 182   | 1284  | 1346  |
| V/C Ratio(X)                 | 0.49  | 0.00  | 0.00  | 0.73  | 0.05  | 0.97  | 0.79  | 1.14  | 0.23  | 1.81  | 0.97  | 0.97  |
| Avail Cap(c_a), veh/h        | 321   | 0   | 0   | 291   | 394   | 308   | 62  | 2171  | 932   | 182   | 1284  | 1346  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 47.4  | 0.0   | 0.0   | 53.2  | 42.8  | 53.1  | 66.7  | 26.5  | 12.1  | 49.0  | 17.5  | 17.7  |
| Incr Delay (d2), s/veh       | 5.2   | 0.0   | 0.0   | 14.6  | 0.2   | 45.2  | 65.0  | 70.9  | 0.6   | 383.4   | 18.4  | 18.6  |
| 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     | 5.7   | 0.0   | 0.0   | 8.9   | 0.6   | 14.9  | 2.9   | 61.5  | 3.8   | 26.2  | 48.6  | 51.6  |
| LnGrp Delay(d),s/veh         | 52.6  | 0.0   | 0.0   | 67.8  | 43.0  | 98.3  | 131.7   | 97.4  | 12.7  | 432.5   | 35.9  | 36.3  |
| LnGrp LOS                    | D   |   |   | E   | D   | F   | F   | F   | B   | F   | D   | D   |
| Approach Vol, veh/h          |   | 156   |   |   | 529   |   |   | 2748  |   |   | 2878  |   |
| Approach Delay, s/veh        |   | 52.6  |   |   | 84.3  |   |   | 91.4  |   |   | 81.4  |   |
| Approach LOS                 |   | D   |   |   | F   |   |   | F   |   |   | F   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 15.0  | 87.0  |   | 33.0  |   | 102.0   |   | 33.0  |   |   |   |   |
| Change Period (Y+Rc), s      | 5.0   | 5.0   |   | 5.0   |   | 5.0   |   | 5.0   |   |   |   |   |
| Max Green Setting (Gmax), s  | 10.0  | 82.0  |   | 28.0  |   | 97.0  |   | 28.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 12.0  | 84.0  |   | 15.4  |   | 89.8  |   | 29.1  |   |   |   |   |
| Green Ext Time (p_c), s      | 0.0   | 0.0   |   | 0.3   |   | 4.7   |   | 0.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          | 85.3  |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 | F   |   |   |   |   |   |   |   |   |   |   |   |



| Lane Group              | EBL   | EBT   | WBL   | WBT  | NBL   | NBT  | SBL   | SBR  |
|-------------------------|-------|-------|-------|------|-------|------|-------|------|
| Lane Group Flow (vph)   | 693   | 613   | 222   | 214  | 798   | 2664 | 252   | 2376 |
| v/c Ratio               | 2.20  | 1.58  | 1.18  | 0.88 | 3.13  | 1.02 | 1.66  | 1.07 |
| Control Delay           | 574.2 | 298.1 | 162.4 | 54.9 | 987.7 | 53.0 | 359.4 | 69.1 |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| Total Delay             | 574.2 | 298.1 | 162.4 | 54.9 | 987.7 | 53.0 | 359.4 | 69.1 |
| Queue Length 50th (ft)  | ~895  | ~585  | ~172  | 56   | ~604  | ~835 | ~308  | ~832 |
| Queue Length 95th (ft)  | #1005 | #553  | #335  | 34   | #468  | #871 | #453  | #930 |
| Internal Link Dist (ft) |       | 165   |       | 155  |       | 606  |       |      |
| Turn Bay Length (ft)    |       |       |       |      |       |      | 160   |      |
| Base Capacity (vph)     | 315   | 388   | 188   | 242  | 255   | 2624 | 152   | 2223 |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0    | 0     | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0    | 0     | 0    | 0     | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0    | 0     | 0    | 0     | 0    |
| Reduced v/c Ratio       | 2.20  | 1.58  | 1.18  | 0.88 | 3.13  | 1.02 | 1.66  | 1.07 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

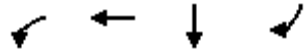
6: S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement               | EBL   | EBT   | EBR2 | WBL   | WBT   | WBR  | NBL    | NBT   | NBR  | SBL   | SBR   | SBR2 |
|------------------------|-------|-------|------|-------|-------|------|--------|-------|------|-------|-------|------|
| Lane Configurations    | ↖     | ↗     |      | ↖     | ↗     |      | ↖↗     | ↑↑↑   |      | ↖     | ↗↗↗   |      |
| Traffic Volume (vph)   | 568   | 48    | 475  | 211   | 20    | 121  | 495    | 2102  | 132  | 217   | 2040  | 122  |
| Future Volume (vph)    | 568   | 48    | 475  | 211   | 20    | 121  | 495    | 2102  | 132  | 217   | 2040  | 122  |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900   | 1900  | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 6.5   | 6.5   |      | 6.5   | 6.5   |      | 7.5    | 5.5   |      | 7.0   | 5.5   |      |
| Lane Util. Factor      | 1.00  | 1.00  |      | 1.00  | 1.00  |      | 0.97   | 0.91  |      | 1.00  | 0.64  |      |
| Frbp, ped/bikes        | 1.00  | 0.99  |      | 1.00  | 0.98  |      | 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  |      |
| Frt                    | 1.00  | 0.87  |      | 1.00  | 0.88  |      | 1.00   | 0.99  |      | 1.00  | 0.85  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 1.00  |      | 0.95   | 1.00  |      | 0.95  | 1.00  |      |
| Satd. Flow (prot)      | 1805  | 1623  |      | 1787  | 1608  |      | 3502   | 5114  |      | 1805  | 4097  |      |
| Flt Permitted          | 0.27  | 1.00  |      | 0.47  | 1.00  |      | 0.95   | 1.00  |      | 0.95  | 1.00  |      |
| Satd. Flow (perm)      | 507   | 1623  |      | 885   | 1608  |      | 3502   | 5114  |      | 1805  | 4097  |      |
| Peak-hour factor, PHF  | 0.82  | 0.72  | 0.87 | 0.95  | 0.55  | 0.68 | 0.62   | 0.86  | 0.60 | 0.86  | 0.93  | 0.67 |
| Adj. Flow (vph)        | 693   | 67    | 546  | 222   | 36    | 178  | 798    | 2444  | 220  | 252   | 2194  | 182  |
| RTOR Reduction (vph)   | 0     | 170   | 0    | 0     | 137   | 0    | 0      | 8     | 0    | 0     | 97    | 0    |
| Lane Group Flow (vph)  | 693   | 443   | 0    | 222   | 77    | 0    | 798    | 2656  | 0    | 252   | 2279  | 0    |
| Confl. Peds. (#/hr)    | 2     |       | 1    | 1     |       | 2    | 10     |       |      |       |       | 10   |
| Confl. Bikes (#/hr)    |       |       | 1    |       |       | 2    |        |       | 2    |       |       | 1    |
| Heavy Vehicles (%)     | 0%    | 0%    | 0%   | 1%    | 0%    | 2%   | 0%     | 0%    | 0%   | 0%    | 1%    | 0%   |
| Turn Type              | pm+pt | NA    |      | pm+pt | NA    |      | Prot   | NA    |      | Prot  | Prot  |      |
| Protected Phases       | 7     | 4     |      | 3     | 8     |      | 5      | 2     |      | 1     | 6     |      |
| Permitted Phases       | 4     |       |      | 8     |       |      |        |       |      |       |       |      |
| Actuated Green, G (s)  | 33.5  | 17.5  |      | 18.0  | 8.5   |      | 9.5    | 66.5  |      | 11.0  | 67.5  |      |
| Effective Green, g (s) | 33.5  | 17.5  |      | 18.0  | 8.5   |      | 9.5    | 66.5  |      | 11.0  | 67.5  |      |
| Actuated g/C Ratio     | 0.26  | 0.13  |      | 0.14  | 0.07  |      | 0.07   | 0.51  |      | 0.08  | 0.52  |      |
| Clearance Time (s)     | 6.5   | 6.5   |      | 6.5   | 6.5   |      | 7.5    | 5.5   |      | 7.0   | 5.5   |      |
| Vehicle Extension (s)  | 1.0   | 3.0   |      | 3.0   | 3.0   |      | 3.0    | 3.0   |      | 2.0   | 2.0   |      |
| Lane Grp Cap (vph)     | 315   | 218   |      | 188   | 105   |      | 255    | 2616  |      | 152   | 2127  |      |
| v/s Ratio Prot         | c0.31 | 0.27  |      | 0.09  | 0.05  |      | c0.23  | 0.52  |      | c0.14 | c0.56 |      |
| v/s Ratio Perm         | c0.25 |       |      | 0.08  |       |      |        |       |      |       |       |      |
| v/c Ratio              | 2.20  | 2.03  |      | 1.18  | 0.73  |      | 3.13   | 1.02  |      | 1.66  | 1.07  |      |
| Uniform Delay, d1      | 44.9  | 56.2  |      | 55.2  | 59.6  |      | 60.2   | 31.8  |      | 59.5  | 31.2  |      |
| Progression Factor     | 1.00  | 1.00  |      | 1.00  | 1.00  |      | 1.00   | 1.00  |      | 1.00  | 1.00  |      |
| Incremental Delay, d2  | 550.3 | 479.2 |      | 122.8 | 35.8  |      | 968.5  | 21.5  |      | 323.4 | 42.0  |      |
| Delay (s)              | 595.1 | 535.4 |      | 178.0 | 95.4  |      | 1028.7 | 53.3  |      | 382.9 | 73.2  |      |
| Level of Service       | F     | F     |      | F     | F     |      | F      | D     |      | F     | E     |      |
| Approach Delay (s)     |       | 567.1 |      |       | 137.4 |      |        | 278.1 |      |       |       |      |
| Approach LOS           |       | F     |      |       | F     |      |        | F     |      |       |       |      |

| Intersection Summary              |        |                           |      |
|-----------------------------------|--------|---------------------------|------|
| HCM 2000 Control Delay            | 259.7  | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio | 1.65   |                           |      |
| Actuated Cycle Length (s)         | 130.0  | Sum of lost time (s)      | 26.0 |
| Intersection Capacity Utilization | 144.6% | ICU Level of Service      | H    |
| Analysis Period (min)             | 15     |                           |      |
| c Critical Lane Group             |        |                           |      |



| Lane Group              | WBL  | WBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 839  | 1755 | 2198 | 457  |
| v/c Ratio               | 1.02 | 1.06 | 0.93 | 0.29 |
| Control Delay           | 32.2 | 49.1 | 48.6 | 0.5  |
| Queue Delay             | 0.4  | 0.3  | 2.8  | 0.0  |
| Total Delay             | 32.6 | 49.3 | 51.5 | 0.5  |
| Queue Length 50th (ft)  | ~768 | ~850 | 533  | 0    |
| Queue Length 95th (ft)  | m523 | m569 | 565  | 0    |
| Internal Link Dist (ft) |      | 23   | 453  |      |
| Turn Bay Length (ft)    |      |      |      |      |
| Base Capacity (vph)     | 826  | 1656 | 2373 | 1595 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 1    | 1    | 107  | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.02 | 1.06 | 0.97 | 0.29 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

7: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement                          | EBL  | EBT  | EBR    | WBL     | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR   |  |
|-----------------------------------|------|------|--------|---------|---------------------------|------|------|------|------|------|-------|-------|--|
| Lane Configurations               |      |      |        | ↖       | ↖↗                        |      |      |      |      |      | ↑↑↑↑  | ↗     |  |
| Traffic Volume (vph)              | 0    | 0    | 0      | 839     | 1304                      | 0    | 0    | 0    | 0    | 0    | 1934  | 416   |  |
| Future Volume (vph)               | 0    | 0    | 0      | 839     | 1304                      | 0    | 0    | 0    | 0    | 0    | 1934  | 416   |  |
| 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   | 4.0   |  |
| Lane Util. Factor                 |      |      |        | 0.91    | 0.91                      |      |      |      |      |      | 0.86  | 1.00  |  |
| Frbp, ped/bikes                   |      |      |        | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.99  |  |
| Flpb, ped/bikes                   |      |      |        | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Frt                               |      |      |        | 1.00    | 1.00                      |      |      |      |      |      | 1.00  | 0.85  |  |
| Flt Protected                     |      |      |        | 0.95    | 0.99                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (prot)                 |      |      |        | 1626    | 3376                      |      |      |      |      |      | 6408  | 1595  |  |
| Flt Permitted                     |      |      |        | 0.95    | 0.99                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Satd. Flow (perm)                 |      |      |        | 1626    | 3376                      |      |      |      |      |      | 6408  | 1595  |  |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92   | 0.82    | 0.83                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.88  | 0.91  |  |
| Adj. Flow (vph)                   | 0    | 0    | 0      | 1023    | 1571                      | 0    | 0    | 0    | 0    | 0    | 2198  | 457   |  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 54      | 54                        | 0    | 0    | 0    | 0    | 0    | 0     | 0     |  |
| Lane Group Flow (vph)             | 0    | 0    | 0      | 785     | 1701                      | 0    | 0    | 0    | 0    | 0    | 2198  | 457   |  |
| Confl. Bikes (#/hr)               |      |      |        |         |                           |      |      |      |      |      |       | 1     |  |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%     | 1%      | 2%                        | 0%   | 2%   | 2%   | 2%   | 2%   | 2%    | 0%    |  |
| Turn Type                         |      |      |        | custom  | NA                        |      |      |      |      |      | NA    | Free  |  |
| Protected Phases                  |      |      |        | 1 2 4 8 | 1 2 4 8                   |      |      |      |      |      | 5 6 7 |       |  |
| Permitted Phases                  |      |      |        | 3       | 3                         |      |      |      |      |      |       | Free  |  |
| Actuated Green, G (s)             |      |      |        | 65.0    | 65.0                      |      |      |      |      |      | 54.0  | 135.0 |  |
| Effective Green, g (s)            |      |      |        | 65.0    | 65.0                      |      |      |      |      |      | 54.0  | 135.0 |  |
| Actuated g/C Ratio                |      |      |        | 0.48    | 0.48                      |      |      |      |      |      | 0.40  | 1.00  |  |
| Clearance Time (s)                |      |      |        |         |                           |      |      |      |      |      |       |       |  |
| Vehicle Extension (s)             |      |      |        |         |                           |      |      |      |      |      |       |       |  |
| Lane Grp Cap (vph)                |      |      |        | 855     | 1775                      |      |      |      |      |      | 2563  | 1595  |  |
| v/s Ratio Prot                    |      |      |        | 0.43    | c0.45                     |      |      |      |      |      | c0.34 |       |  |
| v/s Ratio Perm                    |      |      |        | 0.05    | 0.05                      |      |      |      |      |      |       | 0.29  |  |
| v/c Ratio                         |      |      |        | 0.92    | 0.96                      |      |      |      |      |      | 0.86  | 0.29  |  |
| Uniform Delay, d1                 |      |      |        | 32.5    | 33.7                      |      |      |      |      |      | 37.0  | 0.0   |  |
| Progression Factor                |      |      |        | 0.67    | 0.71                      |      |      |      |      |      | 1.00  | 1.00  |  |
| Incremental Delay, d2             |      |      |        | 1.7     | 1.7                       |      |      |      |      |      | 4.0   | 0.5   |  |
| Delay (s)                         |      |      |        | 23.3    | 25.6                      |      |      |      |      |      | 41.0  | 0.5   |  |
| Level of Service                  |      |      |        | C       | C                         |      |      |      |      |      | D     | A     |  |
| Approach Delay (s)                |      | 0.0  |        |         | 24.8                      |      |      | 0.0  |      |      | 34.0  |       |  |
| Approach LOS                      |      | A    |        |         | C                         |      |      | A    |      |      | C     |       |  |
| <b>Intersection Summary</b>       |      |      |        |         |                           |      |      |      |      |      |       |       |  |
| HCM 2000 Control Delay            |      |      | 29.5   |         | HCM 2000 Level of Service |      |      |      |      |      | C     |       |  |
| HCM 2000 Volume to Capacity ratio |      |      | 1.20   |         |                           |      |      |      |      |      |       |       |  |
| Actuated Cycle Length (s)         |      |      | 135.0  |         | Sum of lost time (s)      |      |      |      |      | 40.0 |       |       |  |
| Intersection Capacity Utilization |      |      | 116.8% |         | ICU Level of Service      |      |      |      |      | H    |       |       |  |
| Analysis Period (min)             |      |      | 15     |         |                           |      |      |      |      |      |       |       |  |
| c Critical Lane Group             |      |      |        |         |                           |      |      |      |      |      |       |       |  |

















| Lane Group              | WBT   | WBR    | NBL  | NBT  |
|-------------------------|-------|--------|------|------|
| Lane Group Flow (vph)   | 2026  | 893    | 461  | 1435 |
| v/c Ratio               | 1.49  | 1.60   | 0.49 | 0.50 |
| Control Delay           | 261.0 | 304.2  | 5.7  | 7.6  |
| Queue Delay             | 0.8   | 0.0    | 2.0  | 0.9  |
| Total Delay             | 261.7 | 304.2  | 7.6  | 8.5  |
| Queue Length 50th (ft)  | ~897  | ~989   | 6    | 22   |
| Queue Length 95th (ft)  | #978  | m#1208 | m12  | m15  |
| Internal Link Dist (ft) | 133   |        |      | 295  |
| Turn Bay Length (ft)    |       |        |      |      |
| Base Capacity (vph)     | 1356  | 558    | 932  | 2859 |
| Starvation Cap Reductn  | 0     | 0      | 316  | 1049 |
| Spillback Cap Reductn   | 231   | 0      | 86   | 131  |
| Storage Cap Reductn     | 0     | 0      | 0    | 0    |
| Reduced v/c Ratio       | 1.80  | 1.60   | 0.75 | 0.79 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |  |
| Lane Configurations               |   |   |   |   | ↑↑↑   | ↑   | ↑  | ↑↑↑   |   |   |   |   |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 0   | 1803  | 795   | 491  | 1180  | 0   | 0   | 0   | 0   |  |
| Future Volume (vph)               | 0   | 0   | 0   | 0   | 1803  | 795   | 491  | 1180  | 0   | 0   | 0   | 0   |  |
| 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   |   |   |   |   |  |
| Lane Util. Factor                 |   |   |   |   | 0.91  | 1.00  | 0.86   | 0.86  |   |   |   |   |  |
| Frt                               |   |   |   |   | 1.00  | 0.85  | 1.00   | 1.00  |   |   |   |   |  |
| Flt Protected                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (prot)                 |   |   |   |   | 5085  | 1583  | 1537   | 4874  |   |   |   |   |  |
| Flt Permitted                     |   |   |   |   | 1.00  | 1.00  | 0.95   | 1.00  |   |   |   |   |  |
| Satd. Flow (perm)                 |   |   |   |   | 5085  | 1583  | 1537   | 4874  |   |   |   |   |  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.93  | 0.89  | 0.89  | 0.82   | 0.91  | 0.92  | 0.92  | 0.92  | 0.92  |  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 0   | 2026  | 893   | 599  | 1297  | 0   | 0   | 0   | 0   |  |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 139   | 44   | 44  | 0   | 0   | 0   | 0   |  |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 0   | 2026  | 754   | 417  | 1391  | 0   | 0   | 0   | 0   |  |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 2%  | 2%  | 2%  | 1%   | 0%  | 2%  | 2%  | 2%  | 2%  |  |
| Turn Type                         |   |   |   |   | NA  | Perm  | custom   | NA  |   |   |   |   |  |
| Protected Phases                  |   |   |   |   | 1 7 8   |   | 2 3 4 5  | 2 3 4 5   |   |   |   |   |  |
| Permitted Phases                  |   |   |   |   |   | 1 7 8   | 6  | 6   |   |   |   |   |  |
| Actuated Green, G (s)             |   |   |   |   | 36.0  | 36.0  | 81.0   | 81.0  |   |   |   |   |  |
| Effective Green, g (s)            |   |   |   |   | 34.0  | 34.0  | 79.0   | 79.0  |   |   |   |   |  |
| Actuated g/C Ratio                |   |   |   |   | 0.25  | 0.25  | 0.59   | 0.59  |   |   |   |   |  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   |   |   |  |
| Lane Grp Cap (vph)                |   |   |   |   | 1280  | 398   | 967  | 3068  |   |   |   |   |  |
| v/s Ratio Prot                    |   |   |   |   | 0.40  |   | 0.15   | 0.16  |   |   |   |   |  |
| v/s Ratio Perm                    |   |   |   |   |   | 0.48  | 0.12   | 0.13  |   |   |   |   |  |
| v/c Ratio                         |   |   |   |   | 1.58  | 1.89  | 0.43   | 0.45  |   |   |   |   |  |
| Uniform Delay, d1                 |   |   |   |   | 50.5  | 50.5  | 15.5   | 15.8  |   |   |   |   |  |
| Progression Factor                |   |   |   |   | 0.98  | 0.98  | 0.55   | 0.62  |   |   |   |   |  |
| Incremental Delay, d2             |   |   |   |   | 265.6   | 410.7   | 0.0  | 0.0   |   |   |   |   |  |
| Delay (s)                         |   |   |   |   | 315.3   | 460.0   | 8.6  | 9.8   |   |   |   |   |  |
| Level of Service                  |   |   |   |   | F   | F   | A  | A   |   |   |   |   |  |
| Approach Delay (s)                |   | 0.0   |   |   | 359.6   |   |  | 9.5   |   |   | 0.0   |   |  |
| Approach LOS                      |   | A   |   |   | F   |   |  | A   |   |   | A   |   |  |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |  |
| HCM 2000 Control Delay            |   |   | 221.7   |   | HCM 2000 Level of Service   |   |  |   | F   |   |   |   |  |
| HCM 2000 Volume to Capacity ratio |   |   | 1.08  |   |   |   |  |   |   |   |   |   |  |
| Actuated Cycle Length (s)         |   |   | 135.0   |   | Sum of lost time (s)  |   |  |   | 40.0  |   |   |   |  |
| Intersection Capacity Utilization |   |   | 114.2%  |   | ICU Level of Service  |   |  |   | H   |   |   |   |  |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |  |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |  |



| Lane Group              | EBT   | SBL  | SBT  |
|-------------------------|-------|------|------|
| Lane Group Flow (vph)   | 1830  | 735  | 2302 |
| v/c Ratio               | 1.54  | 0.66 | 0.66 |
| Control Delay           | 281.3 | 7.2  | 7.2  |
| Queue Delay             | 0.3   | 31.4 | 33.9 |
| Total Delay             | 281.6 | 38.6 | 41.1 |
| Queue Length 50th (ft)  | ~823  | 352  | 81   |
| Queue Length 95th (ft)  | #904  | m276 | m84  |
| Internal Link Dist (ft) | 69    |      | 291  |
| Turn Bay Length (ft)    |       |      |      |
| Base Capacity (vph)     | 1191  | 1108 | 3467 |
| Starvation Cap Reductn  | 0     | 406  | 1312 |
| Spillback Cap Reductn   | 74    | 110  | 173  |
| Storage Cap Reductn     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.64  | 1.05 | 1.07 |

**Intersection Summary**

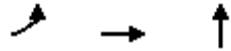
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL     | SBT     | SBR  |  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|------|------|------|---------|---------|------|--|
| Lane Configurations               |      | ↑↑↑   |       |      |                           |      |      |      |      | ↘       | ↑↑↑     |      |  |
| Traffic Volume (vph)              | 0    | 1629  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 1027    | 1702    | 0    |  |
| Future Volume (vph)               | 0    | 1629  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 1027    | 1702    | 0    |  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900    | 1900    | 1900 |  |
| Total Lost time (s)               |      | 2.0   |       |      |                           |      |      |      |      | 6.0     | 6.0     |      |  |
| Lane Util. Factor                 |      | 0.91  |       |      |                           |      |      |      |      | 0.86    | 0.86    |      |  |
| Frbp, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flpb, ped/bikes                   |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Frt                               |      | 1.00  |       |      |                           |      |      |      |      | 1.00    | 1.00    |      |  |
| Flt Protected                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 0.99    |      |  |
| Satd. Flow (prot)                 |      | 5187  |       |      |                           |      |      |      |      | 1522    | 4838    |      |  |
| Flt Permitted                     |      | 1.00  |       |      |                           |      |      |      |      | 0.95    | 0.99    |      |  |
| Satd. Flow (perm)                 |      | 5187  |       |      |                           |      |      |      |      | 1522    | 4838    |      |  |
| Peak-hour factor, PHF             | 0.92 | 0.89  | 0.86  | 0.92 | 0.92                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.88    | 0.91    | 0.92 |  |
| Adj. Flow (vph)                   | 0    | 1830  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 1167    | 1870    | 0    |  |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 31      | 31      | 0    |  |
| Lane Group Flow (vph)             | 0    | 1830  | 0     | 0    | 0                         | 0    | 0    | 0    | 0    | 704     | 2271    | 0    |  |
| Confl. Bikes (#/hr)               |      |       | 1     |      |                           |      |      |      |      |         |         |      |  |
| Heavy Vehicles (%)                | 2%   | 0%    | 0%    | 2%   | 2%                        | 2%   | 2%   | 2%   | 2%   | 2%      | 0%      | 0%   |  |
| Turn Type                         |      | NA    |       |      |                           |      |      |      |      | custom  | NA      |      |  |
| Protected Phases                  |      | 3 4 5 |       |      |                           |      |      |      |      | 1 2 6 8 | 1 2 6 8 |      |  |
| Permitted Phases                  |      |       |       |      |                           |      |      |      |      | 7       | 7       |      |  |
| Actuated Green, G (s)             |      | 27.0  |       |      |                           |      |      |      |      | 88.0    | 88.0    |      |  |
| Effective Green, g (s)            |      | 21.0  |       |      |                           |      |      |      |      | 88.0    | 88.0    |      |  |
| Actuated g/C Ratio                |      | 0.16  |       |      |                           |      |      |      |      | 0.65    | 0.65    |      |  |
| Clearance Time (s)                |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Vehicle Extension (s)             |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| Lane Grp Cap (vph)                |      | 806   |       |      |                           |      |      |      |      | 1059    | 3368    |      |  |
| v/s Ratio Prot                    |      | c0.35 |       |      |                           |      |      |      |      | 0.39    | c0.40   |      |  |
| v/s Ratio Perm                    |      |       |       |      |                           |      |      |      |      | 0.07    | 0.07    |      |  |
| v/c Ratio                         |      | 2.27  |       |      |                           |      |      |      |      | 0.66    | 0.67    |      |  |
| Uniform Delay, d1                 |      | 57.0  |       |      |                           |      |      |      |      | 14.4    | 14.6    |      |  |
| Progression Factor                |      | 1.00  |       |      |                           |      |      |      |      | 0.65    | 0.67    |      |  |
| Incremental Delay, d2             |      | 575.7 |       |      |                           |      |      |      |      | 0.4     | 0.1     |      |  |
| Delay (s)                         |      | 632.7 |       |      |                           |      |      |      |      | 9.8     | 9.9     |      |  |
| Level of Service                  |      | F     |       |      |                           |      |      |      |      | A       | A       |      |  |
| Approach Delay (s)                |      | 632.7 |       |      | 0.0                       |      |      | 0.0  |      |         | 9.9     |      |  |
| Approach LOS                      |      | F     |       |      | A                         |      |      | A    |      |         | A       |      |  |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |      |      |      |         |         |      |  |
| HCM 2000 Control Delay            |      |       | 244.1 |      | HCM 2000 Level of Service |      |      |      |      |         | F       |      |  |
| HCM 2000 Volume to Capacity ratio |      |       | 1.17  |      |                           |      |      |      |      |         |         |      |  |
| Actuated Cycle Length (s)         |      |       | 135.0 |      | Sum of lost time (s)      |      |      |      |      | 40.0    |         |      |  |
| Intersection Capacity Utilization |      |       | 80.1% |      | ICU Level of Service      |      |      |      |      | D       |         |      |  |
| Analysis Period (min)             |      |       | 15    |      |                           |      |      |      |      |         |         |      |  |
| c Critical Lane Group             |      |       |       |      |                           |      |      |      |      |         |         |      |  |



| Lane Group              | EBL  | EBT  | NBT   |
|-------------------------|------|------|-------|
| Lane Group Flow (vph)   | 682  | 2088 | 2010  |
| v/c Ratio               | 0.57 | 0.85 | 1.76  |
| Control Delay           | 4.5  | 14.9 | 375.7 |
| Queue Delay             | 53.1 | 47.3 | 0.7   |
| Total Delay             | 57.6 | 62.2 | 376.4 |
| Queue Length 50th (ft)  | 450  | 937  | ~759  |
| Queue Length 95th (ft)  | m15  | m632 | #745  |
| Internal Link Dist (ft) |      | 38   | 673   |
| Turn Bay Length (ft)    |      |      |       |
| Base Capacity (vph)     | 1194 | 2456 | 1145  |
| Starvation Cap Reductn  | 624  | 883  | 0     |
| Spillback Cap Reductn   | 2    | 1    | 161   |
| Storage Cap Reductn     | 0    | 0    | 0     |
| Reduced v/c Ratio       | 1.20 | 1.33 | 2.04  |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

| Movement                          | EBL     | EBT     | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                       | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------|---------|-------|------|------|------|------|---------------------------|------|------|------|------|
| Lane Configurations               |         |         |       |      |      |      |      |                           |      |      |      |      |
| Traffic Volume (vph)              | 675     | 1952    | 0     | 0    | 0    | 0    | 0    | 1255                      | 413  | 0    | 0    | 0    |
| Future Volume (vph)               | 675     | 1952    | 0     | 0    | 0    | 0    | 0    | 1255                      | 413  | 0    | 0    | 0    |
| 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                       |      |      |      |      |
| Lane Util. Factor                 | 0.91    | 0.91    |       |      |      |      |      | 0.86                      |      |      |      |      |
| Frbp, ped/bikes                   | 1.00    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Flpb, ped/bikes                   | 1.00    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Frt                               | 1.00    | 1.00    |       |      |      |      |      | 0.96                      |      |      |      |      |
| Flt Protected                     | 0.95    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Satd. Flow (prot)                 | 1643    | 3419    |       |      |      |      |      | 6271                      |      |      |      |      |
| Flt Permitted                     | 0.95    | 1.00    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Satd. Flow (perm)                 | 1643    | 3419    |       |      |      |      |      | 6271                      |      |      |      |      |
| Peak-hour factor, PHF             | 0.89    | 0.97    | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 | 0.83                      | 0.83 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)                   | 758     | 2012    | 0     | 0    | 0    | 0    | 0    | 1512                      | 498  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 31      | 31      | 0     | 0    | 0    | 0    | 0    | 29                        | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 651     | 2057    | 0     | 0    | 0    | 0    | 0    | 1981                      | 0    | 0    | 0    | 0    |
| Confl. Bikes (#/hr)               |         |         |       |      |      |      |      |                           | 2    |      |      |      |
| Heavy Vehicles (%)                | 0%      | 1%      | 2%    | 2%   | 2%   | 2%   | 2%   | 0%                        | 0%   | 2%   | 2%   | 2%   |
| Turn Type                         | custom  | NA      |       |      |      |      |      | NA                        |      |      |      |      |
| Protected Phases                  | 4 5 6 8 | 4 5 6 8 |       |      |      |      |      | 1 2 3                     |      |      |      |      |
| Permitted Phases                  | 7       | 7       |       |      |      |      |      |                           |      |      |      |      |
| Actuated Green, G (s)             | 88.0    | 88.0    |       |      |      |      |      | 31.0                      |      |      |      |      |
| Effective Green, g (s)            | 88.0    | 88.0    |       |      |      |      |      | 31.0                      |      |      |      |      |
| Actuated g/C Ratio                | 0.65    | 0.65    |       |      |      |      |      | 0.23                      |      |      |      |      |
| Clearance Time (s)                |         |         |       |      |      |      |      |                           |      |      |      |      |
| Vehicle Extension (s)             |         |         |       |      |      |      |      |                           |      |      |      |      |
| Lane Grp Cap (vph)                | 1144    | 2380    |       |      |      |      |      | 1440                      |      |      |      |      |
| v/s Ratio Prot                    | 0.34    | c0.51   |       |      |      |      |      | c0.32                     |      |      |      |      |
| v/s Ratio Perm                    | 0.06    | 0.09    |       |      |      |      |      |                           |      |      |      |      |
| v/c Ratio                         | 0.57    | 0.86    |       |      |      |      |      | 1.38                      |      |      |      |      |
| Uniform Delay, d1                 | 13.0    | 18.7    |       |      |      |      |      | 52.0                      |      |      |      |      |
| Progression Factor                | 0.52    | 1.04    |       |      |      |      |      | 1.00                      |      |      |      |      |
| Incremental Delay, d2             | 0.0     | 0.3     |       |      |      |      |      | 173.7                     |      |      |      |      |
| Delay (s)                         | 6.8     | 19.7    |       |      |      |      |      | 225.7                     |      |      |      |      |
| Level of Service                  | A       | B       |       |      |      |      |      | F                         |      |      |      |      |
| Approach Delay (s)                |         | 16.5    |       |      | 0.0  |      |      | 225.7                     |      |      | 0.0  |      |
| Approach LOS                      |         | B       |       |      | A    |      |      | F                         |      |      | A    |      |
| <b>Intersection Summary</b>       |         |         |       |      |      |      |      |                           |      |      |      |      |
| HCM 2000 Control Delay            |         |         | 104.5 |      |      |      |      | HCM 2000 Level of Service |      | F    |      |      |
| HCM 2000 Volume to Capacity ratio |         |         | 1.30  |      |      |      |      |                           |      |      |      |      |
| Actuated Cycle Length (s)         |         |         | 135.0 |      |      |      |      | Sum of lost time (s)      |      | 40.0 |      |      |
| Intersection Capacity Utilization |         |         | 84.1% |      |      |      |      | ICU Level of Service      |      | E    |      |      |
| Analysis Period (min)             |         |         | 15    |      |      |      |      |                           |      |      |      |      |
| c Critical Lane Group             |         |         |       |      |      |      |      |                           |      |      |      |      |



| Lane Group              | WBL   | WBT   | NBL  | NBT  | SBT  |
|-------------------------|-------|-------|------|------|------|
| Lane Group Flow (vph)   | 1824  | 1374  | 212  | 255  | 236  |
| v/c Ratio               | 2.56  | 1.32  | 0.53 | 0.17 | 0.17 |
| Control Delay           | 727.5 | 190.3 | 12.3 | 1.1  | 22.7 |
| Queue Delay             | 1.6   | 0.0   | 6.6  | 0.0  | 0.9  |
| Total Delay             | 729.1 | 190.3 | 18.9 | 1.1  | 23.7 |
| Queue Length 50th (ft)  | ~1323 | ~549  | 189  | 0    | 34   |
| Queue Length 95th (ft)  | #1420 | #648  | 290  | 0    | 43   |
| Internal Link Dist (ft) |       | 364   |      | 236  | 206  |
| Turn Bay Length (ft)    | 300   |       |      |      |      |
| Base Capacity (vph)     | 713   | 1043  | 397  | 1515 | 1356 |
| Starvation Cap Reductn  | 0     | 0     | 136  | 0    | 0    |
| Spillback Cap Reductn   | 145   | 0     | 0    | 0    | 867  |
| Storage Cap Reductn     | 0     | 0     | 0    | 0    | 0    |
| Reduced v/c Ratio       | 3.21  | 1.32  | 0.81 | 0.17 | 0.48 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

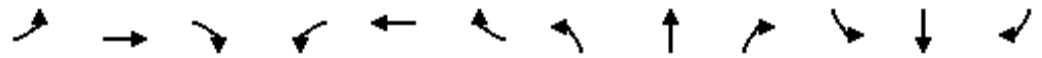
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

11: West Gate Blvd & US 290 WBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement                          | EBL  | EBT  | EBR    | WBL   | WBT   | WBR  | NBL    | NBT     | NBR  | SBL  | SBT  | SBR                       |      |
|-----------------------------------|------|------|--------|-------|-------|------|--------|---------|------|------|------|---------------------------|------|
| Lane Configurations               |      |      |        | ↔↔    | ↔↔↔   |      | ↔      | ↔↔      |      |      | ↔↔↔  |                           |      |
| Traffic Volume (vph)              | 0    | 0    | 0      | 1605  | 1258  | 25   | 382    | 34      | 0    | 0    | 111  | 59                        |      |
| Future Volume (vph)               | 0    | 0    | 0      | 1605  | 1258  | 25   | 382    | 34      | 0    | 0    | 111  | 59                        |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900  | 1900 | 1900   | 1900    | 1900 | 1900 | 1900 | 1900                      |      |
| Total Lost time (s)               |      |      |        | 5.5   | 5.5   |      | 5.5    | 6.0     |      |      | 6.0  |                           |      |
| Lane Util. Factor                 |      |      |        | 0.97  | 0.91  |      | 0.91   | 0.91    |      |      | 0.91 |                           |      |
| Frbp, ped/bikes                   |      |      |        | 1.00  | 1.00  |      | 1.00   | 1.00    |      |      | 0.99 |                           |      |
| Flpb, ped/bikes                   |      |      |        | 1.00  | 1.00  |      | 1.00   | 1.00    |      |      | 1.00 |                           |      |
| Frt                               |      |      |        | 1.00  | 1.00  |      | 1.00   | 1.00    |      |      | 0.95 |                           |      |
| Flt Protected                     |      |      |        | 0.95  | 1.00  |      | 0.95   | 0.96    |      |      | 1.00 |                           |      |
| Satd. Flow (prot)                 |      |      |        | 3502  | 5106  |      | 1624   | 3263    |      |      | 4774 |                           |      |
| Flt Permitted                     |      |      |        | 0.95  | 1.00  |      | 0.60   | 0.64    |      |      | 1.00 |                           |      |
| Satd. Flow (perm)                 |      |      |        | 3502  | 5106  |      | 1024   | 2159    |      |      | 4774 |                           |      |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92   | 0.88  | 0.94  | 0.70 | 0.90   | 0.79    | 0.92 | 0.92 | 0.74 | 0.69                      |      |
| Adj. Flow (vph)                   | 0    | 0    | 0      | 1824  | 1338  | 36   | 424    | 43      | 0    | 0    | 150  | 86                        |      |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 0     | 2     | 0    | 0      | 0       | 0    | 0    | 62   | 0                         |      |
| Lane Group Flow (vph)             | 0    | 0    | 0      | 1824  | 1372  | 0    | 212    | 255     | 0    | 0    | 174  | 0                         |      |
| Confl. Peds. (#/hr)               |      |      |        |       |       |      | 2      |         |      |      |      | 2                         |      |
| Confl. Bikes (#/hr)               |      |      |        |       |       | 2    |        |         |      |      |      |                           |      |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%     | 0%    | 1%    | 7%   | 1%     | 5%      | 2%   | 2%   | 0%   | 6%                        |      |
| Turn Type                         |      |      |        | Perm  | NA    |      | custom | NA      |      |      |      | NA                        |      |
| Protected Phases                  |      |      |        |       | 4 5   |      |        | 1 2 6 7 |      |      |      | 1 2                       |      |
| Permitted Phases                  |      |      |        | 4 5   |       |      | 6 7    |         |      |      |      |                           |      |
| Actuated Green, G (s)             |      |      |        | 26.0  | 26.0  |      | 50.5   | 92.5    |      |      |      | 36.5                      |      |
| Effective Green, g (s)            |      |      |        | 26.0  | 26.0  |      | 50.5   | 81.5    |      |      |      | 36.5                      |      |
| Actuated g/C Ratio                |      |      |        | 0.20  | 0.20  |      | 0.39   | 0.63    |      |      |      | 0.28                      |      |
| Clearance Time (s)                |      |      |        |       |       |      |        |         |      |      |      |                           |      |
| Vehicle Extension (s)             |      |      |        |       |       |      |        |         |      |      |      |                           |      |
| Lane Grp Cap (vph)                |      |      |        | 700   | 1021  |      | 397    | 1353    |      |      |      | 1340                      |      |
| v/s Ratio Prot                    |      |      |        |       | 0.27  |      |        |         |      |      |      | 0.04                      |      |
| v/s Ratio Perm                    |      |      |        | c0.52 |       |      | c0.21  | c0.12   |      |      |      |                           |      |
| v/c Ratio                         |      |      |        | 2.61  | 1.34  |      | 0.53   | 0.19    |      |      |      | 0.13                      |      |
| Uniform Delay, d1                 |      |      |        | 52.0  | 52.0  |      | 30.7   | 10.3    |      |      |      | 34.9                      |      |
| Progression Factor                |      |      |        | 1.00  | 1.00  |      | 0.26   | 0.14    |      |      |      | 1.00                      |      |
| Incremental Delay, d2             |      |      |        | 726.7 | 161.1 |      | 0.6    | 0.0     |      |      |      | 0.0                       |      |
| Delay (s)                         |      |      |        | 778.7 | 213.1 |      | 8.5    | 1.5     |      |      |      | 34.9                      |      |
| Level of Service                  |      |      |        | F     | F     |      | A      | A       |      |      |      | C                         |      |
| Approach Delay (s)                |      | 0.0  |        |       | 535.7 |      |        | 4.7     |      |      |      | 34.9                      |      |
| Approach LOS                      |      | A    |        |       | F     |      |        | A       |      |      |      | C                         |      |
| <b>Intersection Summary</b>       |      |      |        |       |       |      |        |         |      |      |      |                           |      |
| HCM 2000 Control Delay            |      |      | 441.8  |       |       |      |        |         |      |      |      | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |      |      | 1.06   |       |       |      |        |         |      |      |      |                           |      |
| Actuated Cycle Length (s)         |      |      | 130.0  |       |       |      |        |         |      |      |      | Sum of lost time (s)      | 34.0 |
| Intersection Capacity Utilization |      |      | 110.5% |       |       |      |        |         |      |      |      | ICU Level of Service      | H    |
| Analysis Period (min)             |      |      | 15     |       |       |      |        |         |      |      |      |                           |      |
| c Critical Lane Group             |      |      |        |       |       |      |        |         |      |      |      |                           |      |





| Lane Group              | EBL  | EBT  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 43   | 1252 | 440  | 770  | 157  | 1845 |
| v/c Ratio               | 0.06 | 0.93 | 0.64 | 0.89 | 0.32 | 0.99 |
| Control Delay           | 24.4 | 49.6 | 53.3 | 36.4 | 52.8 | 40.8 |
| Queue Delay             | 0.0  | 0.0  | 0.2  | 0.0  | 1.9  | 39.7 |
| Total Delay             | 24.4 | 49.6 | 53.4 | 36.4 | 54.7 | 80.5 |
| Queue Length 50th (ft)  | 22   | 517  | 181  | 176  | 89   | ~466 |
| Queue Length 95th (ft)  | 35   | 545  | 240  | 221  | m42  | m24  |
| Internal Link Dist (ft) |      | 52   | 369  |      |      | 236  |
| Turn Bay Length (ft)    |      |      |      | 90   |      |      |
| Base Capacity (vph)     | 722  | 1365 | 687  | 866  | 498  | 1859 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 217  | 664  |
| Spillback Cap Reductn   | 3    | 0    | 20   | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.06 | 0.92 | 0.66 | 0.89 | 0.56 | 1.54 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

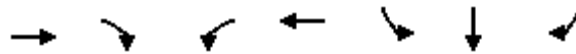
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

| Movement                          | EBL   | EBT   | EBR    | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT     | SBR                       |      |
|-----------------------------------|-------|-------|--------|------|------|------|------|------|------|------|---------|---------------------------|------|
| Lane Configurations               |       |       |        |      |      |      |      |      |      |      |         |                           |      |
| Traffic Volume (vph)              | 29    | 735   | 337    | 0    | 0    | 0    | 0    | 400  | 639  | 129  | 1624    | 0                         |      |
| Future Volume (vph)               | 29    | 735   | 337    | 0    | 0    | 0    | 0    | 400  | 639  | 129  | 1624    | 0                         |      |
| 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  | 5.5  | 5.5     |                           |      |
| Lane Util. Factor                 | 1.00  | 0.95  |        |      |      |      |      | 0.95 | 0.88 | 1.00 | 0.95    |                           |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  |        |      |      |      |      | 1.00 | 0.98 | 1.00 | 1.00    |                           |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  |        |      |      |      |      | 1.00 | 1.00 | 1.00 | 1.00    |                           |      |
| Frt                               | 1.00  | 0.96  |        |      |      |      |      | 1.00 | 0.85 | 1.00 | 1.00    |                           |      |
| Flt Protected                     | 0.95  | 1.00  |        |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00    |                           |      |
| Satd. Flow (prot)                 | 1805  | 3404  |        |      |      |      |      | 3574 | 2746 | 1805 | 3610    |                           |      |
| Flt Permitted                     | 0.95  | 1.00  |        |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00    |                           |      |
| Satd. Flow (perm)                 | 1805  | 3404  |        |      |      |      |      | 3574 | 2746 | 1805 | 3610    |                           |      |
| Peak-hour factor, PHF             | 0.67  | 0.83  | 0.92   | 0.92 | 0.92 | 0.92 | 0.92 | 0.91 | 0.83 | 0.82 | 0.88    | 0.92                      |      |
| Adj. Flow (vph)                   | 43    | 886   | 366    | 0    | 0    | 0    | 0    | 440  | 770  | 157  | 1845    | 0                         |      |
| RTOR Reduction (vph)              | 0     | 5     | 0      | 0    | 0    | 0    | 0    | 0    | 337  | 0    | 0       | 0                         |      |
| Lane Group Flow (vph)             | 43    | 1247  | 0      | 0    | 0    | 0    | 0    | 440  | 433  | 157  | 1845    | 0                         |      |
| Confl. Peds. (#/hr)               |       |       | 1      |      |      |      |      |      | 1    | 1    |         |                           |      |
| Confl. Bikes (#/hr)               |       |       | 1      |      |      |      |      |      | 1    |      |         |                           |      |
| Heavy Vehicles (%)                | 0%    | 1%    | 1%     | 2%   | 2%   | 2%   | 2%   | 1%   | 1%   | 0%   | 0%      | 0%                        |      |
| Turn Type                         | Split | NA    |        |      |      |      |      | NA   | Perm | Prot | NA      |                           |      |
| Protected Phases                  | 1 7   | 1 7   |        |      |      |      |      | 5 6  |      | 2 4  | 2 4 5 6 |                           |      |
| Permitted Phases                  |       |       |        |      |      |      |      |      | 5 6  |      |         |                           |      |
| Actuated Green, G (s)             | 51.5  | 51.5  |        |      |      |      |      | 25.5 | 25.5 | 36.0 | 67.0    |                           |      |
| Effective Green, g (s)            | 46.0  | 46.0  |        |      |      |      |      | 25.5 | 25.5 | 36.0 | 61.0    |                           |      |
| Actuated g/C Ratio                | 0.35  | 0.35  |        |      |      |      |      | 0.20 | 0.20 | 0.28 | 0.47    |                           |      |
| Clearance Time (s)                |       |       |        |      |      |      |      |      |      |      |         |                           |      |
| Vehicle Extension (s)             |       |       |        |      |      |      |      |      |      |      |         |                           |      |
| Lane Grp Cap (vph)                | 638   | 1204  |        |      |      |      |      | 701  | 538  | 499  | 1693    |                           |      |
| v/s Ratio Prot                    | 0.02  | c0.37 |        |      |      |      |      | 0.12 |      | 0.09 | c0.51   |                           |      |
| v/s Ratio Perm                    |       |       |        |      |      |      |      |      | 0.16 |      |         |                           |      |
| v/c Ratio                         | 0.07  | 1.04  |        |      |      |      |      | 0.63 | 0.81 | 0.31 | 1.09    |                           |      |
| Uniform Delay, d1                 | 27.8  | 42.0  |        |      |      |      |      | 47.9 | 49.9 | 37.2 | 34.5    |                           |      |
| Progression Factor                | 1.00  | 1.00  |        |      |      |      |      | 1.00 | 1.00 | 1.39 | 1.16    |                           |      |
| Incremental Delay, d2             | 0.0   | 35.7  |        |      |      |      |      | 4.2  | 12.1 | 0.1  | 41.5    |                           |      |
| Delay (s)                         | 27.8  | 77.7  |        |      |      |      |      | 52.1 | 62.0 | 51.7 | 81.4    |                           |      |
| Level of Service                  | C     | E     |        |      |      |      |      | D    | E    | D    | F       |                           |      |
| Approach Delay (s)                |       | 76.1  |        |      | 0.0  |      |      | 58.4 |      |      | 79.1    |                           |      |
| Approach LOS                      |       | E     |        |      | A    |      |      | E    |      |      | E       |                           |      |
| <b>Intersection Summary</b>       |       |       |        |      |      |      |      |      |      |      |         |                           |      |
| HCM 2000 Control Delay            |       |       | 72.7   |      |      |      |      |      |      |      |         | HCM 2000 Level of Service | E    |
| HCM 2000 Volume to Capacity ratio |       |       | 1.19   |      |      |      |      |      |      |      |         |                           |      |
| Actuated Cycle Length (s)         |       |       | 130.0  |      |      |      |      |      |      |      |         | Sum of lost time (s)      | 34.0 |
| Intersection Capacity Utilization |       |       | 110.5% |      |      |      |      |      |      |      |         | ICU Level of Service      | H    |
| Analysis Period (min)             |       |       | 15     |      |      |      |      |      |      |      |         |                           |      |
| c Critical Lane Group             |       |       |        |      |      |      |      |      |      |      |         |                           |      |



| Lane Group              | EBT   | EBR  | WBL   | WBT   | SBL   | SBT   | SBR  |
|-------------------------|-------|------|-------|-------|-------|-------|------|
| Lane Group Flow (vph)   | 3939  | 2028 | 404   | 3846  | 433   | 447   | 430  |
| v/c Ratio               | 1.21  | 0.72 | 1.84  | 0.97  | 1.65  | 1.65  | 0.27 |
| Control Delay           | 129.3 | 1.6  | 413.1 | 27.7  | 352.4 | 350.6 | 0.4  |
| Queue Delay             | 0.6   | 0.0  | 0.0   | 43.2  | 0.0   | 0.0   | 0.0  |
| Total Delay             | 129.9 | 1.6  | 413.1 | 71.0  | 352.4 | 350.6 | 0.4  |
| Queue Length 50th (ft)  | ~2071 | 0    | ~682  | 1761  | ~776  | ~802  | 0    |
| Queue Length 95th (ft)  | #2090 | 0    | m#540 | m1511 | #960  | #1017 | 0    |
| Internal Link Dist (ft) | 834   |      |       | 1419  |       | 192   |      |
| Turn Bay Length (ft)    |       |      | 950   |       |       |       |      |
| Base Capacity (vph)     | 3252  | 2814 | 220   | 3966  | 262   | 271   | 1595 |
| Starvation Cap Reductn  | 0     | 0    | 0     | 604   | 0     | 0     | 0    |
| Spillback Cap Reductn   | 865   | 0    | 0     | 0     | 0     | 0     | 0    |
| Storage Cap Reductn     | 0     | 0    | 0     | 0     | 0     | 0     | 0    |
| Reduced v/c Ratio       | 1.65  | 0.72 | 1.84  | 1.14  | 1.65  | 1.65  | 0.27 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

13: Capital of Texas Hwy & Mopac SBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement                          | EBL  | EBT   | EBR    | WBL   | WBT   | WBR                       | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-----------------------------------|------|-------|--------|-------|-------|---------------------------|------|------|------|-------|-------|-------|
| Lane Configurations               |      | ↑↑↑   | ↑↑     | ↑     | ↑↑↑   |                           |      |      |      | ↑     | ↑     | ↑     |
| Traffic Volume (vph)              | 0    | 3781  | 1906   | 319   | 3692  | 0                         | 0    | 0    | 0    | 443   | 321   | 331   |
| Future Volume (vph)               | 0    | 3781  | 1906   | 319   | 3692  | 0                         | 0    | 0    | 0    | 443   | 321   | 331   |
| Ideal Flow (vphp)                 | 1900 | 1900  | 1900   | 1900  | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  |
| Total Lost time (s)               |      | 7.0   | 4.0    | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5   | 4.0   |
| Lane Util. Factor                 |      | 0.91  | 0.88   | 1.00  | 0.91  |                           |      |      |      | 0.95  | 0.95  | 1.00  |
| Frbp, ped/bikes                   |      | 1.00  | 1.00   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00  | 0.99  |
| Flpb, ped/bikes                   |      | 1.00  | 1.00   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00  | 1.00  |
| Frt                               |      | 1.00  | 0.85   | 1.00  | 1.00  |                           |      |      |      | 1.00  | 1.00  | 0.85  |
| Flt Protected                     |      | 1.00  | 1.00   | 0.95  | 1.00  |                           |      |      |      | 0.95  | 0.99  | 1.00  |
| Satd. Flow (prot)                 |      | 5136  | 2814   | 1787  | 5136  |                           |      |      |      | 1715  | 1774  | 1595  |
| Flt Permitted                     |      | 1.00  | 1.00   | 0.03  | 1.00  |                           |      |      |      | 0.95  | 0.99  | 1.00  |
| Satd. Flow (perm)                 |      | 5136  | 2814   | 62    | 5136  |                           |      |      |      | 1715  | 1774  | 1595  |
| Peak-hour factor, PHF             | 0.92 | 0.96  | 0.94   | 0.79  | 0.96  | 0.92                      | 0.92 | 0.92 | 0.92 | 0.86  | 0.88  | 0.77  |
| Adj. Flow (vph)                   | 0    | 3939  | 2028   | 404   | 3846  | 0                         | 0    | 0    | 0    | 515   | 365   | 430   |
| RTOR Reduction (vph)              | 0    | 0     | 0      | 0     | 0     | 0                         | 0    | 0    | 0    | 0     | 0     | 0     |
| Lane Group Flow (vph)             | 0    | 3939  | 2028   | 404   | 3846  | 0                         | 0    | 0    | 0    | 433   | 447   | 430   |
| Confl. Bikes (#/hr)               |      |       |        |       |       |                           |      |      |      |       |       | 1     |
| Heavy Vehicles (%)                | 2%   | 1%    | 1%     | 1%    | 1%    | 2%                        | 2%   | 2%   | 2%   | 0%    | 1%    | 0%    |
| Turn Type                         |      | NA    | Free   | pm+pt | NA    |                           |      |      |      | Perm  | NA    | Free  |
| Protected Phases                  |      | 2     |        | 1     | 6     |                           |      |      |      |       | 8     |       |
| Permitted Phases                  |      |       | Free   | 6     |       |                           |      |      |      | 8     |       | Free  |
| Actuated Green, G (s)             |      | 114.0 | 180.0  | 139.0 | 139.0 |                           |      |      |      | 27.5  | 27.5  | 180.0 |
| Effective Green, g (s)            |      | 114.0 | 180.0  | 139.0 | 139.0 |                           |      |      |      | 27.5  | 27.5  | 180.0 |
| Actuated g/C Ratio                |      | 0.63  | 1.00   | 0.77  | 0.77  |                           |      |      |      | 0.15  | 0.15  | 1.00  |
| Clearance Time (s)                |      | 7.0   |        | 7.0   | 7.0   |                           |      |      |      | 6.5   | 6.5   |       |
| Vehicle Extension (s)             |      | 4.0   |        | 2.0   | 4.0   |                           |      |      |      | 2.0   | 2.0   |       |
| Lane Grp Cap (vph)                |      | 3252  | 2814   | 220   | 3966  |                           |      |      |      | 262   | 271   | 1595  |
| v/s Ratio Prot                    |      | 0.77  |        | c0.18 | 0.75  |                           |      |      |      |       |       |       |
| v/s Ratio Perm                    |      |       | 0.72   | c1.23 |       |                           |      |      |      | c0.25 | 0.25  | 0.27  |
| v/c Ratio                         |      | 1.21  | 0.72   | 1.84  | 0.97  |                           |      |      |      | 1.65  | 1.65  | 0.27  |
| Uniform Delay, d1                 |      | 33.0  | 0.0    | 71.1  | 18.6  |                           |      |      |      | 76.2  | 76.2  | 0.0   |
| Progression Factor                |      | 1.00  | 1.00   | 1.13  | 1.43  |                           |      |      |      | 1.00  | 1.00  | 1.00  |
| Incremental Delay, d2             |      | 98.1  | 1.6    | 378.0 | 1.2   |                           |      |      |      | 310.2 | 308.2 | 0.4   |
| Delay (s)                         |      | 131.1 | 1.6    | 458.6 | 27.7  |                           |      |      |      | 386.4 | 384.5 | 0.4   |
| Level of Service                  |      | F     | A      | F     | C     |                           |      |      |      | F     | F     | A     |
| Approach Delay (s)                |      | 87.1  |        |       | 68.7  |                           |      | 0.0  |      |       | 259.1 |       |
| Approach LOS                      |      | F     |        |       | E     |                           |      | A    |      |       | F     |       |
| <b>Intersection Summary</b>       |      |       |        |       |       |                           |      |      |      |       |       |       |
| HCM 2000 Control Delay            |      |       | 99.9   |       |       | HCM 2000 Level of Service |      |      |      | F     |       |       |
| HCM 2000 Volume to Capacity ratio |      |       | 1.83   |       |       |                           |      |      |      |       |       |       |
| Actuated Cycle Length (s)         |      |       | 180.0  |       |       | Sum of lost time (s)      |      |      |      | 20.5  |       |       |
| Intersection Capacity Utilization |      |       | 146.5% |       |       | ICU Level of Service      |      |      |      | H     |       |       |
| Analysis Period (min)             |      |       | 15     |       |       |                           |      |      |      |       |       |       |

c Critical Lane Group



| Lane Group              | EBL   | EBT    | WBT   | WBR    | NBL   | NBT  | NBR   |
|-------------------------|-------|--------|-------|--------|-------|------|-------|
| Lane Group Flow (vph)   | 501   | 4137   | 2846  | 3168   | 1415  | 151  | 546   |
| v/c Ratio               | 1.45  | 1.62   | 1.10  | 1.98   | 1.33  | 0.38 | 1.43  |
| Control Delay           | 244.8 | 298.6  | 79.5  | 460.9  | 208.4 | 64.6 | 250.6 |
| Queue Delay             | 0.0   | 0.0    | 2.2   | 0.0    | 0.0   | 0.0  | 0.0   |
| Total Delay             | 244.8 | 298.6  | 81.7  | 460.9  | 208.4 | 64.6 | 250.6 |
| Queue Length 50th (ft)  | ~750  | ~3676  | ~1382 | ~3972  | ~767  | 156  | ~807  |
| Queue Length 95th (ft)  | m#518 | m#2651 | m563  | m#1503 | #801  | 226  | #913  |
| Internal Link Dist (ft) |       | 1419   | 756   |        |       | 675  |       |
| Turn Bay Length (ft)    |       |        |       |        | 300   |      |       |
| Base Capacity (vph)     | 346   | 2561   | 2596  | 1599   | 1060  | 395  | 381   |
| Starvation Cap Reductn  | 0     | 0      | 0     | 0      | 0     | 0    | 0     |
| Spillback Cap Reductn   | 0     | 0      | 589   | 0      | 0     | 0    | 0     |
| Storage Cap Reductn     | 0     | 0      | 0     | 0      | 0     | 0    | 0     |
| Reduced v/c Ratio       | 1.45  | 1.62   | 1.42  | 1.98   | 1.33  | 0.38 | 1.43  |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Mopac NBFR & Capital of Texas Hwy  
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

|                             |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                    | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations         |  |  |   |   |  |  |  |  |  |   |   |   |
| Traffic Volume (veh/h)      | 441   | 3889  | 0   | 0   | 2789  | 2915  | 1217   | 133   | 448   | 0   | 0   | 0   |
| Future Volume (veh/h)       | 441   | 3889  | 0   | 0   | 2789  | 2915  | 1217   | 133   | 448   | 0   | 0   | 0   |
| Number                      | 5   | 2   | 12  | 1   | 6   | 16  | 7  | 4   | 14  |   |   |   |
| 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  |   |   |   |
| Adj Sat Flow, veh/h/ln      | 1863  | 1881  | 0   | 0   | 1881  | 1881  | 1900   | 1900  | 1881  |   |   |   |
| Adj Flow Rate, veh/h        | 501   | 4137  | 0   | 0   | 2846  | 0   | 1415   | 151   | 0   |   |   |   |
| Adj No. of Lanes            | 1   | 2   | 0   | 0   | 3   | 1   | 3  | 1   | 1   |   |   |   |
| Peak Hour Factor            | 0.88  | 0.94  | 0.92  | 0.92  | 0.98  | 0.92  | 0.86   | 0.88  | 0.82  |   |   |   |
| Percent Heavy Veh, %        | 2   | 1   | 0   | 0   | 1   | 1   | 0  | 0   | 1   |   |   |   |
| Cap, veh/h                  | 346   | 2562  | 0   | 0   | 2596  | 808   | 1063   | 396   | 333   |   |   |   |
| Arrive On Green             | 0.23  | 0.95  | 0.00  | 0.00  | 0.51  | 0.00  | 0.21   | 0.21  | 0.00  |   |   |   |
| Sat Flow, veh/h             | 1774  | 3668  | 0   | 0   | 5305  | 1599  | 5103   | 1900  | 1599  |   |   |   |
| Grp Volume(v), veh/h        | 501   | 4137  | 0   | 0   | 2846  | 0   | 1415   | 151   | 0   |   |   |   |
| Grp Sat Flow(s),veh/h/ln    | 1774  | 1787  | 0   | 0   | 1712  | 1599  | 1701   | 1900  | 1599  |   |   |   |
| Q Serve(g_s), s             | 31.0  | 129.0   | 0.0   | 0.0   | 91.0  | 0.0   | 37.5   | 12.3  | 0.0   |   |   |   |
| Cycle Q Clear(g_c), s       | 31.0  | 129.0   | 0.0   | 0.0   | 91.0  | 0.0   | 37.5   | 12.3  | 0.0   |   |   |   |
| Prop In Lane                | 1.00  |   | 0.00  | 0.00  |   | 1.00  | 1.00   |   | 1.00  |   |   |   |
| Lane Grp Cap(c), veh/h      | 346   | 2562  | 0   | 0   | 2596  | 808   | 1063   | 396   | 333   |   |   |   |
| V/C Ratio(X)                | 1.45  | 1.62  | 0.00  | 0.00  | 1.10  | 0.00  | 1.33   | 0.38  | 0.00  |   |   |   |
| Avail Cap(c_a), veh/h       | 346   | 2562  | 0   | 0   | 2596  | 808   | 1063   | 396   | 333   |   |   |   |
| HCM Platoon Ratio           | 1.33  | 1.33  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Upstream Filter(I)          | 0.09  | 0.09  | 0.00  | 0.00  | 1.00  | 0.00  | 1.00   | 1.00  | 0.00  |   |   |   |
| Uniform Delay (d), s/veh    | 67.6  | 4.2   | 0.0   | 0.0   | 44.5  | 0.0   | 71.3   | 61.3  | 0.0   |   |   |   |
| Incr Delay (d2), s/veh      | 204.0   | 276.9   | 0.0   | 0.0   | 50.1  | 0.0   | 155.5  | 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    | 36.7  | 152.6   | 0.0   | 0.0   | 54.8  | 0.0   | 32.9   | 6.5   | 0.0   |   |   |   |
| LnGrp Delay(d),s/veh        | 271.6   | 281.1   | 0.0   | 0.0   | 94.6  | 0.0   | 226.7  | 61.5  | 0.0   |   |   |   |
| LnGrp LOS                   | F   | F   |   |   | F   |   | F  | E   |   |   |   |   |
| Approach Vol, veh/h         |   | 4638  |   |   | 2846  |   |  | 1566  |   |   |   |   |
| Approach Delay, s/veh       |   | 280.1   |   |   | 94.6  |   |  | 210.8   |   |   |   |   |
| Approach LOS                |   | F   |   |   | F   |   |  | F   |   |   |   |   |
| Timer                       | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                |   | 2   |   | 4   | 5   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s    |   | 136.0   |   | 44.0  | 38.0  | 98.0  |  |   |   |   |   |   |
| Change Period (Y+Rc), s     |   | 7.0   |   | 6.5   | 7.0   | 7.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s |   | 129.0   |   | 37.5  | 31.0  | 91.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+1), s |   | 131.0   |   | 39.5  | 33.0  | 93.0  |  |   |   |   |   |   |
| Green Ext Time (p_c), s     |   | 0.0   |   | 0.0   | 0.0   | 0.0   |  |   |   |   |   |   |
| <b>Intersection Summary</b> |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay         |   |   | 209.8   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                |   |   | F   |   |   |   |  |   |   |   |   |   |



| Lane Group              | WBR  | NBT   | NBR  | SBL   | SBT    |
|-------------------------|------|-------|------|-------|--------|
| Lane Group Flow (vph)   | 501  | 5755  | 78   | 448   | 7499   |
| v/c Ratio               | 0.93 | 1.52  | 0.07 | 1.32  | 1.98   |
| Control Delay           | 96.6 | 257.7 | 3.1  | 200.7 | 461.0  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0   | 0.0    |
| Total Delay             | 96.6 | 257.7 | 3.1  | 200.7 | 461.0  |
| Queue Length 50th (ft)  | 335  | ~3454 | 10   | ~681  | ~5044  |
| Queue Length 95th (ft)  | 346  | #3389 | 14   | m#459 | m#3523 |
| Internal Link Dist (ft) |      | 1281  |      |       | 1273   |
| Turn Bay Length (ft)    |      |       | 430  | 550   |        |
| Base Capacity (vph)     | 536  | 3794  | 1159 | 340   | 3794   |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0     | 0      |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0     | 0      |
| Storage Cap Reductn     | 0    | 0     | 0    | 0     | 0      |
| Reduced v/c Ratio       | 0.93 | 1.52  | 0.07 | 1.32  | 1.98   |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Capital of Texas Hwy & Barton Creek Plaza Driveway  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement                          | WBL  | WBR  | NBT    | NBR   | SBL                       | SBT   |
|-----------------------------------|------|------|--------|-------|---------------------------|-------|
| Lane Configurations               |      | ↗↗   | ↕↕↕    | ↘     | ↘                         | ↕↕↕   |
| Traffic Volume (vph)              | 0    | 386  | 5352   | 50    | 345                       | 7124  |
| Future Volume (vph)               | 0    | 386  | 5352   | 50    | 345                       | 7124  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900                      | 1900  |
| Total Lost time (s)               |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Lane Util. Factor                 |      | 0.88 | 0.91   | 1.00  | 1.00                      | 0.91  |
| Frt                               |      | 0.85 | 1.00   | 0.85  | 1.00                      | 1.00  |
| Flt Protected                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (prot)                 |      | 2842 | 5136   | 1553  | 1805                      | 5136  |
| Flt Permitted                     |      | 1.00 | 1.00   | 1.00  | 0.95                      | 1.00  |
| Satd. Flow (perm)                 |      | 2842 | 5136   | 1553  | 1805                      | 5136  |
| Peak-hour factor, PHF             | 0.92 | 0.77 | 0.93   | 0.64  | 0.77                      | 0.95  |
| Adj. Flow (vph)                   | 0    | 501  | 5755   | 78    | 448                       | 7499  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 12    | 0                         | 0     |
| Lane Group Flow (vph)             | 0    | 501  | 5755   | 66    | 448                       | 7499  |
| Heavy Vehicles (%)                | 2%   | 0%   | 1%     | 4%    | 0%                        | 1%    |
| Turn Type                         |      | Over | NA     | Prot  | Prot                      | NA    |
| Protected Phases                  |      | 5    | 6      | 6     | 5                         | 6     |
| Permitted Phases                  |      |      |        |       |                           |       |
| Actuated Green, G (s)             |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Effective Green, g (s)            |      | 34.0 | 133.0  | 133.0 | 34.0                      | 133.0 |
| Actuated g/C Ratio                |      | 0.19 | 0.74   | 0.74  | 0.19                      | 0.74  |
| Clearance Time (s)                |      | 6.0  | 7.0    | 7.0   | 6.0                       | 7.0   |
| Vehicle Extension (s)             |      | 2.0  | 4.0    | 4.0   | 2.0                       | 4.0   |
| Lane Grp Cap (vph)                |      | 536  | 3794   | 1147  | 340                       | 3794  |
| v/s Ratio Prot                    |      | 0.18 | 1.12   | 0.04  | c0.25                     | c1.46 |
| v/s Ratio Perm                    |      |      |        |       |                           |       |
| v/c Ratio                         |      | 0.93 | 1.52   | 0.06  | 1.32                      | 1.98  |
| Uniform Delay, d1                 |      | 71.9 | 23.5   | 6.4   | 73.0                      | 23.5  |
| Progression Factor                |      | 1.00 | 1.00   | 1.00  | 0.93                      | 1.03  |
| Incremental Delay, d2             |      | 23.4 | 234.0  | 0.1   | 150.8                     | 439.8 |
| Delay (s)                         |      | 95.3 | 257.5  | 6.5   | 218.7                     | 464.0 |
| Level of Service                  |      | F    | F      | A     | F                         | F     |
| Approach Delay (s)                | 95.3 |      | 254.1  |       |                           | 450.2 |
| Approach LOS                      | F    |      | F      |       |                           | F     |
| <b>Intersection Summary</b>       |      |      |        |       |                           |       |
| HCM 2000 Control Delay            |      |      | 357.6  |       | HCM 2000 Level of Service | F     |
| HCM 2000 Volume to Capacity ratio |      |      | 1.84   |       |                           |       |
| Actuated Cycle Length (s)         |      |      | 180.0  |       | Sum of lost time (s)      | 13.0  |
| Intersection Capacity Utilization |      |      | 143.5% |       | ICU Level of Service      | H     |
| Analysis Period (min)             |      |      | 15     |       |                           |       |
| c Critical Lane Group             |      |      |        |       |                           |       |





| Lane Group              | WBL  | WBT  | NBL  | NBT  | SBT   | SBR  |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 193  | 1773 | 172  | 206  | 701   | 129  |
| v/c Ratio               | 0.21 | 0.89 | 0.91 | 0.32 | 1.63  | 0.29 |
| Control Delay           | 15.6 | 32.9 | 69.5 | 16.9 | 325.9 | 11.5 |
| Queue Delay             | 68.7 | 0.0  | 0.0  | 1.6  | 5.2   | 0.0  |
| Total Delay             | 84.2 | 32.9 | 69.5 | 18.5 | 331.1 | 11.5 |
| Queue Length 50th (ft)  | 81   | 672  | 78   | 80   | ~883  | 11   |
| Queue Length 95th (ft)  | m118 | m742 | m62  | m86  | #1107 | 39   |
| Internal Link Dist (ft) |      | 522  |      | 175  | 200   |      |
| Turn Bay Length (ft)    |      |      | 70   |      |       | 90   |
| Base Capacity (vph)     | 925  | 1986 | 190  | 642  | 431   | 441  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 284  | 0     | 0    |
| Spillback Cap Reductn   | 762  | 0    | 0    | 0    | 162   | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 1.18 | 0.89 | 0.91 | 0.58 | 2.61  | 0.29 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

16: US 290 WBFR & Victory Drive  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

| Movement                          | EBL  | EBT  | EBR    | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|--------|-------|-------|------|-------|-------|------|------|-------|------|
| Lane Configurations               |      |      |        |       |       |      |       |       |      |      |       |      |
| Traffic Volume (vph)              | 0    | 0    | 0      | 187   | 1493  | 173  | 98    | 163   | 0    | 0    | 624   | 97   |
| Future Volume (vph)               | 0    | 0    | 0      | 187   | 1493  | 173  | 98    | 163   | 0    | 0    | 624   | 97   |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      |        | 5.5   | 5.5   |      | 5.5   | 4.5   |      |      | 4.5   | 4.5  |
| Lane Util. Factor                 |      |      |        | 1.00  | 0.95  |      | 1.00  | 1.00  |      |      | 1.00  | 1.00 |
| Frbp, ped/bikes                   |      |      |        | 1.00  | 1.00  |      | 1.00  | 1.00  |      |      | 1.00  | 0.98 |
| Flpb, ped/bikes                   |      |      |        | 1.00  | 1.00  |      | 1.00  | 1.00  |      |      | 1.00  | 1.00 |
| Frt                               |      |      |        | 1.00  | 0.98  |      | 1.00  | 1.00  |      |      | 1.00  | 0.85 |
| Flt Protected                     |      |      |        | 0.95  | 1.00  |      | 0.95  | 1.00  |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 |      |      |        | 1612  | 3448  |      | 1805  | 1827  |      |      | 1792  | 1476 |
| Flt Permitted                     |      |      |        | 0.95  | 1.00  |      | 0.14  | 1.00  |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |      |      |        | 1612  | 3448  |      | 271   | 1827  |      |      | 1792  | 1476 |
| Peak-hour factor, PHF             | 0.92 | 0.92 | 0.92   | 0.97  | 0.95  | 0.86 | 0.57  | 0.79  | 0.92 | 0.92 | 0.89  | 0.75 |
| Adj. Flow (vph)                   | 0    | 0    | 0      | 193   | 1572  | 201  | 172   | 206   | 0    | 0    | 701   | 129  |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 0     | 7     | 0    | 0     | 0     | 0    | 0    | 0     | 86   |
| Lane Group Flow (vph)             | 0    | 0    | 0      | 193   | 1766  | 0    | 172   | 206   | 0    | 0    | 701   | 43   |
| Confl. Peds. (#/hr)               |      |      |        |       |       | 1    | 6     |       |      |      |       | 6    |
| Confl. Bikes (#/hr)               |      |      |        |       |       |      |       |       |      |      |       | 3    |
| Heavy Vehicles (%)                | 2%   | 2%   | 2%     | 12%   | 2%    | 8%   | 0%    | 4%    | 2%   | 2%   | 6%    | 7%   |
| Turn Type                         |      |      |        | Split | NA    |      | pm+pt | NA    |      |      | NA    | Perm |
| Protected Phases                  |      |      |        | 7 8   | 7 8   |      | 2     | 1 2 6 |      |      | 1 6   |      |
| Permitted Phases                  |      |      |        |       |       |      | 1 2 6 |       |      |      |       | 1 6  |
| Actuated Green, G (s)             |      |      |        | 77.0  | 77.0  |      | 42.0  | 47.5  |      |      | 32.5  | 32.5 |
| Effective Green, g (s)            |      |      |        | 77.0  | 77.0  |      | 37.5  | 42.0  |      |      | 32.5  | 32.5 |
| Actuated g/C Ratio                |      |      |        | 0.57  | 0.57  |      | 0.28  | 0.31  |      |      | 0.24  | 0.24 |
| Clearance Time (s)                |      |      |        |       |       |      | 5.5   |       |      |      |       |      |
| Vehicle Extension (s)             |      |      |        |       |       |      | 1.5   |       |      |      |       |      |
| Lane Grp Cap (vph)                |      |      |        | 919   | 1966  |      | 183   | 568   |      |      | 431   | 355  |
| v/s Ratio Prot                    |      |      |        | 0.12  | c0.51 |      | c0.07 | 0.11  |      |      | c0.39 |      |
| v/s Ratio Perm                    |      |      |        |       |       |      | 0.19  |       |      |      |       | 0.03 |
| v/c Ratio                         |      |      |        | 0.21  | 0.90  |      | 0.94  | 0.36  |      |      | 1.63  | 0.12 |
| Uniform Delay, d1                 |      |      |        | 14.2  | 25.5  |      | 42.7  | 36.1  |      |      | 51.2  | 40.1 |
| Progression Factor                |      |      |        | 1.06  | 1.04  |      | 0.88  | 0.49  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2             |      |      |        | 0.0   | 5.7   |      | 41.2  | 0.1   |      |      | 292.4 | 0.1  |
| Delay (s)                         |      |      |        | 15.1  | 32.2  |      | 78.7  | 17.8  |      |      | 343.6 | 40.1 |
| Level of Service                  |      |      |        | B     | C     |      | E     | B     |      |      | F     | D    |
| Approach Delay (s)                |      | 0.0  |        |       | 30.5  |      |       | 45.5  |      |      | 296.4 |      |
| Approach LOS                      |      | A    |        |       | C     |      |       | D     |      |      | F     |      |
| <b>Intersection Summary</b>       |      |      |        |       |       |      |       |       |      |      |       |      |
| HCM 2000 Control Delay            |      |      | 101.8  |       |       |      |       |       |      |      |       | F    |
| HCM 2000 Volume to Capacity ratio |      |      | 1.20   |       |       |      |       |       |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 135.0  |       |       |      |       |       | 26.0 |      |       |      |
| Intersection Capacity Utilization |      |      | 152.3% |       |       |      |       |       |      |      |       | H    |
| Analysis Period (min)             |      |      | 15     |       |       |      |       |       |      |      |       |      |
| c Critical Lane Group             |      |      |        |       |       |      |       |       |      |      |       |      |



| Lane Group              | EBT    | NBT  | NBR  | SBL   | SBT  |
|-------------------------|--------|------|------|-------|------|
| Lane Group Flow (vph)   | 3121   | 211  | 173  | 697   | 208  |
| v/c Ratio               | 1.54   | 0.32 | 0.31 | 1.29  | 0.23 |
| Control Delay           | 273.3  | 33.6 | 20.4 | 157.6 | 3.5  |
| Queue Delay             | 0.0    | 0.0  | 0.0  | 0.4   | 3.4  |
| Total Delay             | 273.3  | 33.6 | 20.4 | 157.9 | 6.9  |
| Queue Length 50th (ft)  | ~1432  | 134  | 64   | ~331  | 19   |
| Queue Length 95th (ft)  | m#1320 | 176  | 108  | m248  | m15  |
| Internal Link Dist (ft) | 53     | 253  |      |       | 175  |
| Turn Bay Length (ft)    |        |      | 125  | 70    |      |
| Base Capacity (vph)     | 2032   | 668  | 561  | 541   | 918  |
| Starvation Cap Reductn  | 0      | 0    | 0    | 25    | 611  |
| Spillback Cap Reductn   | 0      | 15   | 0    | 0     | 0    |
| Storage Cap Reductn     | 0      | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 1.54   | 0.32 | 0.31 | 1.35  | 0.68 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

17: Pack Saddle Pass & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement                          | EBL   | EBT   | EBR    | WBL  | WBT  | WBR  | NBL  | NBT   | NBR   | SBL   | SBT     | SBR                       |      |
|-----------------------------------|-------|-------|--------|------|------|------|------|-------|-------|-------|---------|---------------------------|------|
| Lane Configurations               |       | ↔↕↔   |        |      |      |      |      | ↑     | ↗     | ↘     | ↑       |                           |      |
| Traffic Volume (vph)              | 91    | 2691  | 115    | 0    | 0    | 0    | 0    | 169   | 142   | 606   | 185     | 0                         |      |
| Future Volume (vph)               | 91    | 2691  | 115    | 0    | 0    | 0    | 0    | 169   | 142   | 606   | 185     | 0                         |      |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900   | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  | 1900    | 1900                      |      |
| Total Lost time (s)               |       | 6.0   |        |      |      |      |      | 4.5   | 4.5   | 5.5   | 4.5     |                           |      |
| Lane Util. Factor                 |       | 0.91  |        |      |      |      |      | 1.00  | 1.00  | 1.00  | 1.00    |                           |      |
| Frbp, ped/bikes                   |       | 1.00  |        |      |      |      |      | 1.00  | 1.00  | 1.00  | 1.00    |                           |      |
| Flpb, ped/bikes                   |       | 1.00  |        |      |      |      |      | 1.00  | 1.00  | 1.00  | 1.00    |                           |      |
| Frt                               |       | 0.99  |        |      |      |      |      | 1.00  | 0.85  | 1.00  | 1.00    |                           |      |
| Flt Protected                     |       | 1.00  |        |      |      |      |      | 1.00  | 1.00  | 0.95  | 1.00    |                           |      |
| Satd. Flow (prot)                 |       | 5071  |        |      |      |      |      | 1900  | 1468  | 1719  | 1759    |                           |      |
| Flt Permitted                     |       | 1.00  |        |      |      |      |      | 1.00  | 1.00  | 0.51  | 1.00    |                           |      |
| Satd. Flow (perm)                 |       | 5071  |        |      |      |      |      | 1900  | 1468  | 926   | 1759    |                           |      |
| Peak-hour factor, PHF             | 0.81  | 0.94  | 0.79   | 0.92 | 0.92 | 0.92 | 0.92 | 0.80  | 0.82  | 0.87  | 0.89    | 0.92                      |      |
| Adj. Flow (vph)                   | 112   | 2863  | 146    | 0    | 0    | 0    | 0    | 211   | 173   | 697   | 208     | 0                         |      |
| RTOR Reduction (vph)              | 0     | 4     | 0      | 0    | 0    | 0    | 0    | 0     | 48    | 0     | 0       | 0                         |      |
| Lane Group Flow (vph)             | 0     | 3117  | 0      | 0    | 0    | 0    | 0    | 211   | 125   | 697   | 208     | 0                         |      |
| Confl. Bikes (#/hr)               |       |       | 3      |      |      |      |      |       | 1     |       |         |                           |      |
| Heavy Vehicles (%)                | 10%   | 1%    | 0%     | 2%   | 2%   | 2%   | 2%   | 0%    | 10%   | 5%    | 8%      | 2%                        |      |
| Turn Type                         | Split | NA    |        |      |      |      |      | NA    | Prot  | D.P+P | NA      |                           |      |
| Protected Phases                  | 8     | 8     |        |      |      |      |      | 1 2 6 | 1 2 6 | 7     | 1 2 6 7 |                           |      |
| Permitted Phases                  |       |       |        |      |      |      |      |       |       | 1 2 6 |         |                           |      |
| Actuated Green, G (s)             |       | 54.0  |        |      |      |      |      | 47.5  | 47.5  | 65.0  | 69.5    |                           |      |
| Effective Green, g (s)            |       | 54.0  |        |      |      |      |      | 42.0  | 42.0  | 60.5  | 64.0    |                           |      |
| Actuated g/C Ratio                |       | 0.40  |        |      |      |      |      | 0.31  | 0.31  | 0.45  | 0.47    |                           |      |
| Clearance Time (s)                |       | 6.0   |        |      |      |      |      |       |       | 5.5   |         |                           |      |
| Vehicle Extension (s)             |       | 1.5   |        |      |      |      |      |       |       | 1.5   |         |                           |      |
| Lane Grp Cap (vph)                |       | 2028  |        |      |      |      |      | 591   | 456   | 517   | 833     |                           |      |
| v/s Ratio Prot                    |       | c0.61 |        |      |      |      |      | 0.11  | 0.09  | c0.17 | 0.12    |                           |      |
| v/s Ratio Perm                    |       |       |        |      |      |      |      |       |       | c0.43 |         |                           |      |
| v/c Ratio                         |       | 1.54  |        |      |      |      |      | 0.36  | 0.28  | 1.35  | 0.25    |                           |      |
| Uniform Delay, d1                 |       | 40.5  |        |      |      |      |      | 36.0  | 35.0  | 38.6  | 21.2    |                           |      |
| Progression Factor                |       | 1.01  |        |      |      |      |      | 1.00  | 1.00  | 0.72  | 0.19    |                           |      |
| Incremental Delay, d2             |       | 242.9 |        |      |      |      |      | 0.1   | 0.1   | 157.9 | 0.0     |                           |      |
| Delay (s)                         |       | 283.7 |        |      |      |      |      | 36.2  | 35.2  | 185.8 | 4.1     |                           |      |
| Level of Service                  |       | F     |        |      |      |      |      | D     | D     | F     | A       |                           |      |
| Approach Delay (s)                |       | 283.7 |        | 0.0  |      |      |      | 35.7  |       |       | 144.1   |                           |      |
| Approach LOS                      |       | F     |        | A    |      |      |      | D     |       |       | F       |                           |      |
| <b>Intersection Summary</b>       |       |       |        |      |      |      |      |       |       |       |         |                           |      |
| HCM 2000 Control Delay            |       |       | 233.4  |      |      |      |      |       |       |       |         | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |       |       | 1.51   |      |      |      |      |       |       |       |         |                           |      |
| Actuated Cycle Length (s)         |       |       | 135.0  |      |      |      |      |       |       |       |         | Sum of lost time (s)      | 26.0 |
| Intersection Capacity Utilization |       |       | 152.3% |      |      |      |      |       |       |       |         | ICU Level of Service      | H    |
| Analysis Period (min)             |       |       | 15     |      |      |      |      |       |       |       |         |                           |      |
| c Critical Lane Group             |       |       |        |      |      |      |      |       |       |       |         |                           |      |






















| Lane Group              | WBL   | WBT   | WBR   | NBL  | NBT  | SBT   | SBR  |
|-------------------------|-------|-------|-------|------|------|-------|------|
| Lane Group Flow (vph)   | 756   | 1571  | 788   | 514  | 934  | 1539  | 279  |
| v/c Ratio               | 1.55  | 1.55  | 1.33  | 0.87 | 0.42 | 1.15  | 0.53 |
| Control Delay           | 294.1 | 289.6 | 194.4 | 19.7 | 7.5  | 126.3 | 27.5 |
| Queue Delay             | 0.7   | 0.4   | 0.0   | 49.9 | 4.5  | 0.1   | 0.0  |
| Total Delay             | 294.8 | 290.1 | 194.4 | 69.6 | 12.0 | 126.4 | 27.5 |
| Queue Length 50th (ft)  | ~1141 | ~1187 | ~892  | 84   | 71   | ~647  | 118  |
| Queue Length 95th (ft)  | #1417 | #1331 | #1149 | m78  | m65  | #744  | 178  |
| Internal Link Dist (ft) |       | 53    |       |      | 174  | 314   |      |
| Turn Bay Length (ft)    |       |       |       |      |      |       | 100  |
| Base Capacity (vph)     | 487   | 1011  | 591   | 589  | 2239 | 1335  | 522  |
| Starvation Cap Reductn  | 0     | 0     | 0     | 137  | 1210 | 0     | 0    |
| Spillback Cap Reductn   | 39    | 81    | 0     | 0    | 0    | 20    | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 1.69  | 1.69  | 1.33  | 1.14 | 0.91 | 1.17  | 0.53 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

18: US 290 WBFR & Menchaca Road  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                          | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations               |   |   |   |  |  |  |  |  |   |   |  |  |
| Traffic Volume (vph)              | 0   | 0   | 0   | 1166  | 1022  | 764   | 437  | 850   | 0   | 0   | 1462  | 229   |
| Future Volume (vph)               | 0   | 0   | 0   | 1166  | 1022  | 764   | 437  | 850   | 0   | 0   | 1462  | 229   |
| 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  | 5.0   |   |   | 5.0   | 5.0   |
| Lane Util. Factor                 |   |   |   | 0.91  | 0.91  | 1.00  | 1.00   | 0.95  |   |   | 0.91  | 1.00  |
| Frt                               |   |   |   | 1.00  | 1.00  | 0.85  | 1.00   | 1.00  |   |   | 1.00  | 0.85  |
| Flt Protected                     |   |   |   | 0.95  | 0.98  | 1.00  | 0.95   | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (prot)                 |   |   |   | 1626  | 3372  | 1615  | 1805   | 3574  |   |   | 5136  | 1615  |
| Flt Permitted                     |   |   |   | 0.95  | 0.98  | 1.00  | 0.95   | 1.00  |   |   | 1.00  | 1.00  |
| Satd. Flow (perm)                 |   |   |   | 1626  | 3372  | 1615  | 1805   | 3574  |   |   | 5136  | 1615  |
| Peak-hour factor, PHF             | 0.92  | 0.92  | 0.92  | 0.94  | 0.94  | 0.97  | 0.85   | 0.91  | 0.92  | 0.92  | 0.95  | 0.82  |
| Adj. Flow (vph)                   | 0   | 0   | 0   | 1240  | 1087  | 788   | 514  | 934   | 0   | 0   | 1539  | 279   |
| RTOR Reduction (vph)              | 0   | 0   | 0   | 0   | 0   | 106   | 0  | 0   | 0   | 0   | 0   | 102   |
| Lane Group Flow (vph)             | 0   | 0   | 0   | 756   | 1571  | 682   | 514  | 934   | 0   | 0   | 1539  | 177   |
| Heavy Vehicles (%)                | 2%  | 2%  | 2%  | 1%  | 1%  | 0%  | 0%   | 1%  | 2%  | 2%  | 1%  | 0%  |
| Turn Type                         |   |   |   | Perm  | NA  | Perm  | Prot   | NA  |   |   | NA  | Perm  |
| Protected Phases                  |   |   |   |   | 8 9   |   | 4 13   | 1 4 13  |   |   | 1   |   |
| Permitted Phases                  |   |   |   | 8 9   |   | 8 9   |  |   |   |   |   | 1   |
| Actuated Green, G (s)             |   |   |   | 46.0  | 46.0  | 46.0  | 49.0   | 93.0  |   |   | 39.0  | 39.0  |
| Effective Green, g (s)            |   |   |   | 46.0  | 46.0  | 46.0  | 44.0   | 93.0  |   |   | 39.0  | 39.0  |
| Actuated g/C Ratio                |   |   |   | 0.31  | 0.31  | 0.31  | 0.29   | 0.62  |   |   | 0.26  | 0.26  |
| Clearance Time (s)                |   |   |   |   |   |   |  |   |   |   | 5.0   | 5.0   |
| Vehicle Extension (s)             |   |   |   |   |   |   |  |   |   |   | 1.0   | 1.0   |
| Lane Grp Cap (vph)                |   |   |   | 498   | 1034  | 495   | 529  | 2215  |   |   | 1335  | 419   |
| v/s Ratio Prot                    |   |   |   |   |   |   | c0.28  | 0.26  |   |   | c0.30   |   |
| v/s Ratio Perm                    |   |   |   | 0.46  | 0.47  | 0.42  |  |   |   |   |   | 0.11  |
| v/c Ratio                         |   |   |   | 1.52  | 1.52  | 1.38  | 0.97   | 0.42  |   |   | 1.15  | 0.42  |
| Uniform Delay, d1                 |   |   |   | 52.0  | 52.0  | 52.0  | 52.4   | 14.7  |   |   | 55.5  | 46.1  |
| Progression Factor                |   |   |   | 1.00  | 1.00  | 1.00  | 0.35   | 0.52  |   |   | 1.00  | 1.00  |
| Incremental Delay, d2             |   |   |   | 243.3   | 238.7   | 182.3   | 6.6  | 0.0   |   |   | 77.8  | 0.3   |
| Delay (s)                         |   |   |   | 295.3   | 290.7   | 234.3   | 24.9   | 7.7   |   |   | 133.3   | 46.4  |
| Level of Service                  |   |   |   | F   | F   | F   | C  | A   |   |   | F   | D   |
| Approach Delay (s)                |   | 0.0   |   |   | 277.5   |   |  | 13.8  |   |   | 119.9   |   |
| Approach LOS                      |   | A   |   |   | F   |   |  | B   |   |   | F   |   |
| <b>Intersection Summary</b>       |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2000 Control Delay            |   |   | 172.8   |   |   |   |  |   |   |   |   | F   |
| HCM 2000 Volume to Capacity ratio |   |   | 1.28  |   |   |   |  |   |   |   |   |   |
| Actuated Cycle Length (s)         |   |   | 150.0   |   |   |   |  |   |   | 27.0  |   |   |
| Intersection Capacity Utilization |   |   | 157.1%  |   |   |   |  |   |   |   |   | H   |
| Analysis Period (min)             |   |   | 15  |   |   |   |  |   |   |   |   |   |
| c Critical Lane Group             |   |   |   |   |   |   |  |   |   |   |   |   |



| Lane Group              | EBL   | EBT   | EBR   | NBT   | NBR   | SBL  | SBT  |
|-------------------------|-------|-------|-------|-------|-------|------|------|
| Lane Group Flow (vph)   | 334   | 858   | 673   | 1073  | 621   | 802  | 2128 |
| v/c Ratio               | 1.11  | 1.44  | 1.99  | 1.08  | 1.49  | 0.85 | 0.78 |
| Control Delay           | 141.3 | 251.1 | 483.2 | 108.9 | 265.6 | 10.5 | 4.7  |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 7.6   | 0.0   | 50.0 | 47.7 |
| Total Delay             | 141.3 | 251.1 | 483.2 | 116.5 | 265.6 | 60.5 | 52.4 |
| Queue Length 50th (ft)  | ~372  | ~597  | ~956  | ~428  | ~727  | 196  | 122  |
| Queue Length 95th (ft)  | #535  | #733  | #1205 | #524  | #904  | m108 | m9   |
| Internal Link Dist (ft) |       | 62    |       | 300   |       |      | 174  |
| Turn Bay Length (ft)    |       |       |       |       | 100   |      |      |
| Base Capacity (vph)     | 300   | 595   | 338   | 992   | 416   | 944  | 2716 |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 320  | 1097 |
| Spillback Cap Reductn   | 0     | 0     | 0     | 35    | 0     | 0    | 0    |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.11  | 1.44  | 1.99  | 1.12  | 1.49  | 1.29 | 1.31 |

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

19: Menchaca Road & US 290 EBFR  
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM

| Movement                          | EBL   | EBT   | EBR    | WBL  | WBT  | WBR  | NBL  | NBT   | NBR   | SBL   | SBT    | SBR                       |      |
|-----------------------------------|-------|-------|--------|------|------|------|------|-------|-------|-------|--------|---------------------------|------|
| Lane Configurations               |       |       |        |      |      |      |      |       |       |       |        |                           |      |
| Traffic Volume (vph)              | 287   | 824   | 619    | 0    | 0    | 0    | 0    | 998   | 534   | 682   | 2000   | 0                         |      |
| Future Volume (vph)               | 287   | 824   | 619    | 0    | 0    | 0    | 0    | 998   | 534   | 682   | 2000   | 0                         |      |
| 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    |      |      |      |      | 5.0   | 5.0   | 5.0   | 5.0    |                           |      |
| Lane Util. Factor                 | 1.00  | 0.95  | 1.00   |      |      |      |      | 0.91  | 1.00  | 1.00  | 0.95   |                           |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  | 0.99   |      |      |      |      | 1.00  | 0.99  | 1.00  | 1.00   |                           |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00   |      |      |      |      | 1.00  | 1.00  | 1.00  | 1.00   |                           |      |
| Frt                               | 1.00  | 1.00  | 0.85   |      |      |      |      | 1.00  | 0.85  | 1.00  | 1.00   |                           |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00   |      |      |      |      | 1.00  | 1.00  | 0.95  | 1.00   |                           |      |
| Satd. Flow (prot)                 | 1805  | 3574  | 1593   |      |      |      |      | 5136  | 1578  | 1770  | 3574   |                           |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00   |      |      |      |      | 1.00  | 1.00  | 0.95  | 1.00   |                           |      |
| Satd. Flow (perm)                 | 1805  | 3574  | 1593   |      |      |      |      | 5136  | 1578  | 1770  | 3574   |                           |      |
| Peak-hour factor, PHF             | 0.86  | 0.96  | 0.92   | 0.92 | 0.92 | 0.92 | 0.92 | 0.93  | 0.86  | 0.85  | 0.94   | 0.92                      |      |
| Adj. Flow (vph)                   | 334   | 858   | 673    | 0    | 0    | 0    | 0    | 1073  | 621   | 802   | 2128   | 0                         |      |
| RTOR Reduction (vph)              | 0     | 0     | 73     | 0    | 0    | 0    | 0    | 0     | 111   | 0     | 0      | 0                         |      |
| Lane Group Flow (vph)             | 334   | 858   | 601    | 0    | 0    | 0    | 0    | 1073  | 510   | 802   | 2128   | 0                         |      |
| Confl. Bikes (#/hr)               |       |       | 1      |      |      |      |      |       | 1     |       |        |                           |      |
| Heavy Vehicles (%)                | 0%    | 1%    | 0%     | 2%   | 2%   | 2%   | 2%   | 1%    | 1%    | 2%    | 1%     | 2%                        |      |
| Turn Type                         | Perm  | NA    | Perm   |      |      |      |      | NA    | Perm  | Prot  | NA     |                           |      |
| Protected Phases                  |       | 4 8   |        |      |      |      |      | 13    |       | 1 9   | 1 9 13 |                           |      |
| Permitted Phases                  | 4 8   |       | 4 8    |      |      |      |      |       | 13    |       |        |                           |      |
| Actuated Green, G (s)             | 25.0  | 25.0  | 25.0   |      |      |      |      | 29.0  | 29.0  | 80.0  | 114.0  |                           |      |
| Effective Green, g (s)            | 25.0  | 25.0  | 25.0   |      |      |      |      | 29.0  | 29.0  | 80.0  | 114.0  |                           |      |
| Actuated g/C Ratio                | 0.17  | 0.17  | 0.17   |      |      |      |      | 0.19  | 0.19  | 0.53  | 0.76   |                           |      |
| Clearance Time (s)                |       |       |        |      |      |      |      | 5.0   | 5.0   |       |        |                           |      |
| Vehicle Extension (s)             |       |       |        |      |      |      |      | 1.0   | 1.0   |       |        |                           |      |
| Lane Grp Cap (vph)                | 300   | 595   | 265    |      |      |      |      | 992   | 305   | 944   | 2716   |                           |      |
| v/s Ratio Prot                    |       | 0.24  |        |      |      |      |      | 0.21  |       | c0.45 | 0.60   |                           |      |
| v/s Ratio Perm                    | 0.19  |       | c0.38  |      |      |      |      |       | c0.32 |       |        |                           |      |
| v/c Ratio                         | 1.11  | 1.44  | 2.27   |      |      |      |      | 1.08  | 1.67  | 0.85  | 0.78   |                           |      |
| Uniform Delay, d1                 | 62.5  | 62.5  | 62.5   |      |      |      |      | 60.5  | 60.5  | 29.9  | 10.7   |                           |      |
| Progression Factor                | 1.00  | 1.00  | 1.00   |      |      |      |      | 1.00  | 1.00  | 0.30  | 0.41   |                           |      |
| Incremental Delay, d2             | 86.0  | 208.3 | 581.6  |      |      |      |      | 53.3  | 316.0 | 0.7   | 0.1    |                           |      |
| Delay (s)                         | 148.5 | 270.8 | 644.1  |      |      |      |      | 113.8 | 376.5 | 9.6   | 4.5    |                           |      |
| Level of Service                  | F     | F     | F      |      |      |      |      | F     | F     | A     | A      |                           |      |
| Approach Delay (s)                |       | 383.6 |        |      | 0.0  |      |      | 210.1 |       |       | 5.9    |                           |      |
| Approach LOS                      |       | F     |        |      | A    |      |      | F     |       |       | A      |                           |      |
| <b>Intersection Summary</b>       |       |       |        |      |      |      |      |       |       |       |        |                           |      |
| HCM 2000 Control Delay            |       |       | 167.8  |      |      |      |      |       |       |       |        | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |       |       | 1.41   |      |      |      |      |       |       |       |        |                           |      |
| Actuated Cycle Length (s)         |       |       | 150.0  |      |      |      |      |       |       |       |        | Sum of lost time (s)      | 27.0 |
| Intersection Capacity Utilization |       |       | 157.1% |      |      |      |      |       |       |       |        | ICU Level of Service      | H    |
| Analysis Period (min)             |       |       | 15     |      |      |      |      |       |       |       |        |                           |      |

c Critical Lane Group



| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 74.1 |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 73   | 144  | 241  | 22   | 134  | 7    | 222  | 21   | 56   | 5    | 32   | 43   |
| Future Vol, veh/h        | 73   | 144  | 241  | 22   | 134  | 7    | 222  | 21   | 56   | 5    | 32   | 43   |
| Conflicting Peds, #/hr   | 14   | 0    | 9    | 9    | 0    | 14   | 6    | 0    | 11   | 11   | 0    | 6    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 68   | 87   | 87   | 50   | 76   | 50   | 80   | 75   | 60   | 60   | 56   | 75   |
| Heavy Vehicles, %        | 0    | 0    | 7    | 0    | 0    | 0    | 5    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 107  | 166  | 277  | 44   | 176  | 14   | 278  | 28   | 93   | 8    | 57   | 57   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-----|-----|
| Conflicting Flow All | 204    | 0 | 0 | 452    | 0 | 0 | 862    | 820 | 325 | 875    | 951 | 203 |
| Stage 1              | -      | - | - | -      | - | - | 528    | 528 | -   | 285    | 285 | -   |
| Stage 2              | -      | - | - | -      | - | - | 334    | 292 | -   | 590    | 666 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.15   | 6.5 | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.15   | 5.5 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.15   | 5.5 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.545  | 4   | 3.3 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1380   | - | - | 1119   | - | - | ~ 272  | 312 | 721 | 272    | 262 | 843 |
| Stage 1              | -      | - | - | -      | - | - | 528    | 531 | -   | 727    | 679 | -   |
| Stage 2              | -      | - | - | -      | - | - | 674    | 675 | -   | 497    | 460 | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |     |     |        |     |     |
| Mov Cap-1 Maneuver   | 1362   | - | - | 1109   | - | - | ~ 177  | 260 | 707 | 188    | 218 | 827 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | ~ 177  | 260 | -   | 188    | 218 | -   |
| Stage 1              | -      | - | - | -      | - | - | 466    | 469 | -   | 639    | 641 | -   |
| Stage 2              | -      | - | - | -      | - | - | 543    | 637 | -   | 358    | 406 | -   |

| Approach             | EB  |  |  | WB  |  |  | NB    |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|-------|--|--|------|--|--|
| HCM Control Delay, s | 1.5 |  |  | 1.6 |  |  | 232.7 |  |  | 22.5 |  |  |
| HCM LOS              |     |  |  |     |  |  | F     |  |  | C    |  |  |

| Minor Lane/Major Mvmt | NBLn1    | NBLn2 | EBL   | EBT | EBR | WBL  | WBT | WBR | SBLn1 |
|-----------------------|----------|-------|-------|-----|-----|------|-----|-----|-------|
| Capacity (veh/h)      | 177      | 506   | 1362  | -   | -   | 1109 | -   | -   | 327   |
| HCM Lane V/C Ratio    | 1.568    | 0.24  | 0.079 | -   | -   | 0.04 | -   | -   | 0.376 |
| HCM Control Delay (s) | \$ 328.2 | 14.3  | 7.9   | 0   | -   | 8.4  | 0   | -   | 22.5  |
| HCM Lane LOS          | F        | B     | A     | A   | -   | A    | A   | -   | C     |
| HCM 95th %tile Q(veh) | 18.3     | 0.9   | 0.3   | -   | -   | 0.1  | -   | -   | 1.7   |

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

21: S Lamar Blvd & Driveway A  
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA  
 Imps-Phase 3-2036 Site+Forecasted PM



| Movement                          | EBL   | EBR  | NBL  | NBT                  | SBT  | SBR  |      |      |      |  |  |
|-----------------------------------|-------|------|------|----------------------|------|------|------|------|------|--|--|
| Lane Configurations               |       |      |      |                      |      |      |      |      |      |  |  |
| Traffic Volume (veh/h)            | 0     | 0    | 0    | 2791                 | 2379 | 115  |      |      |      |  |  |
| Future Volume (Veh/h)             | 0     | 0    | 0    | 2791                 | 2379 | 115  |      |      |      |  |  |
| Sign Control                      | Stop  |      |      | Free                 |      | Free |      |      |      |  |  |
| Grade                             | 0%    |      |      | 0%                   |      | 0%   |      |      |      |  |  |
| Peak Hour Factor                  | 0.92  | 0.92 | 0.92 | 0.92                 | 0.92 | 0.92 |      |      |      |  |  |
| Hourly flow rate (vph)            | 0     | 0    | 0    | 3034                 | 2586 | 125  |      |      |      |  |  |
| <b>Pedestrians</b>                |       |      |      |                      |      |      |      |      |      |  |  |
| Lane Width (ft)                   |       |      |      |                      |      |      |      |      |      |  |  |
| Walking Speed (ft/s)              |       |      |      |                      |      |      |      |      |      |  |  |
| Percent Blockage                  |       |      |      |                      |      |      |      |      |      |  |  |
| Right turn flare (veh)            |       |      |      |                      |      |      |      |      |      |  |  |
| Median type                       |       |      |      | None                 | None |      |      |      |      |  |  |
| Median storage (veh)              |       |      |      |                      |      |      |      |      |      |  |  |
| Upstream signal (ft)              |       |      |      | 408                  | 941  |      |      |      |      |  |  |
| pX, platoon unblocked             | 0.61  |      |      |                      |      |      |      |      |      |  |  |
| vC, conflicting volume            | 3407  | 709  | 2711 |                      |      |      |      |      |      |  |  |
| vC1, stage 1 conf vol             |       |      |      |                      |      |      |      |      |      |  |  |
| vC2, stage 2 conf vol             |       |      |      |                      |      |      |      |      |      |  |  |
| vCu, unblocked vol                | 1743  | 709  | 2711 |                      |      |      |      |      |      |  |  |
| tC, single (s)                    | 6.8   | 6.9  | 4.1  |                      |      |      |      |      |      |  |  |
| tC, 2 stage (s)                   |       |      |      |                      |      |      |      |      |      |  |  |
| tF (s)                            | 3.5   | 3.3  | 2.2  |                      |      |      |      |      |      |  |  |
| p0 queue free %                   | 100   | 100  | 100  |                      |      |      |      |      |      |  |  |
| cM capacity (veh/h)               | 47    | 377  | 148  |                      |      |      |      |      |      |  |  |
| Direction, Lane #                 | EB 1  | NB 1 | NB 2 | NB 3                 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |  |  |
| Volume Total                      | 0     | 758  | 758  | 758                  | 758  | 739  | 739  | 739  | 494  |  |  |
| Volume Left                       | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |  |
| Volume Right                      | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 125  |  |  |
| cSH                               | 1700  | 1700 | 1700 | 1700                 | 1700 | 1700 | 1700 | 1700 | 1700 |  |  |
| Volume to Capacity                | 0.00  | 0.45 | 0.45 | 0.45                 | 0.45 | 0.43 | 0.43 | 0.43 | 0.29 |  |  |
| Queue Length 95th (ft)            | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |  |  |
| Control Delay (s)                 | 0.0   | 0.0  | 0.0  | 0.0                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |  |
| Lane LOS                          | A     |      |      |                      |      |      |      |      |      |  |  |
| Approach Delay (s)                | 0.0   | 0.0  |      |                      |      |      | 0.0  |      |      |  |  |
| Approach LOS                      | A     |      |      |                      |      |      |      |      |      |  |  |
| <b>Intersection Summary</b>       |       |      |      |                      |      |      |      |      |      |  |  |
| Average Delay                     | 0.0   |      |      |                      |      |      |      |      |      |  |  |
| Intersection Capacity Utilization | 43.8% |      |      | ICU Level of Service |      |      |      | A    |      |  |  |
| Analysis Period (min)             | 15    |      |      |                      |      |      |      |      |      |  |  |

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 39   |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    |      |      | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 249  | 0    | 0    | 2101 | 23   |
| Future Vol, veh/h        | 0    | 249  | 0    | 0    | 2101 | 23   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | -    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 271  | 0    | 0    | 2284 | 25   |

| Major/Minor          | Minor2  | Major2 |
|----------------------|---------|--------|
| Conflicting Flow All | - 1155  | - 0    |
| Stage 1              | - -     | - -    |
| Stage 2              | - -     | - -    |
| Critical Hdwy        | - 7.14  | - -    |
| Critical Hdwy Stg 1  | - -     | - -    |
| Critical Hdwy Stg 2  | - -     | - -    |
| Follow-up Hdwy       | - 3.92  | - -    |
| Pot Cap-1 Maneuver   | 0 ~ 163 | - -    |
| Stage 1              | 0 -     | - -    |
| Stage 2              | 0 -     | - -    |
| Platoon blocked, %   |         | - -    |
| Mov Cap-1 Maneuver   | - ~ 163 | - -    |
| Mov Cap-2 Maneuver   | - -     | - -    |
| Stage 1              | - -     | - -    |
| Stage 2              | - -     | - -    |

| Approach             | EB       | SB |
|----------------------|----------|----|
| HCM Control Delay, s | \$ 372.1 | 0  |
| HCM LOS              | F        |    |

| Minor Lane/Major Mvmt | EBLn1    | SBT | SBR |
|-----------------------|----------|-----|-----|
| Capacity (veh/h)      | 163      | -   | -   |
| HCM Lane V/C Ratio    | 1.66     | -   | -   |
| HCM Control Delay (s) | \$ 372.1 | -   | -   |
| HCM Lane LOS          | F        | -   | -   |
| HCM 95th %tile Q(veh) | 18.8     | -   | -   |

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

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 12.5 |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↑ ↑↑ | ↑ ↑↑ |      |      |      |
| Traffic Vol, veh/h       | 0    | 216  | 1594 | 126  | 0    | 0    |
| Future Vol, veh/h        | 0    | 216  | 1594 | 126  | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | -    |
| Grade, %                 | 0    | -    | 0    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 235  | 1733 | 137  | 0    | 0    |

| Major/Minor          | Minor1  | Major1 |   |
|----------------------|---------|--------|---|
| Conflicting Flow All | -       | 935    | 0 |
| Stage 1              | -       | -      | - |
| Stage 2              | -       | -      | - |
| Critical Hdwy        | -       | 7.14   | - |
| Critical Hdwy Stg 1  | -       | -      | - |
| Critical Hdwy Stg 2  | -       | -      | - |
| Follow-up Hdwy       | -       | 3.92   | - |
| Pot Cap-1 Maneuver   | 0 ~ 229 | -      | - |
| Stage 1              | 0       | -      | - |
| Stage 2              | 0       | -      | - |
| Platoon blocked, %   |         | -      | - |
| Mov Cap-1 Maneuver   | - ~ 229 | -      | - |
| Mov Cap-2 Maneuver   | -       | -      | - |
| Stage 1              | -       | -      | - |
| Stage 2              | -       | -      | - |

| Approach             | WB    | NB |
|----------------------|-------|----|
| HCM Control Delay, s | 111.8 | 0  |
| HCM LOS              | F     |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 |
|-----------------------|-----|----------|
| Capacity (veh/h)      | -   | - 229    |
| HCM Lane V/C Ratio    | -   | - 1.025  |
| HCM Control Delay (s) | -   | - 111.8  |
| HCM Lane LOS          | -   | - F      |
| HCM 95th %tile Q(veh) | -   | - 9.8    |

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