

Attachment C

**Capacity Analyses
Nahatan Street/Clapboardtree Street**

HCM Unsignalized Intersection Capacity Analysis
602: N. Connector Road & Clapboardtree St.

2012 Existing AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | ↶ | | | ↷ | ↷ | |
| Volume (veh/h) | 235 | 0 | 0 | 832 | 122 | 264 |
| Sign Control | Stop | | | Free | Free | |
| Grade | -12% | | | -5% | 8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 273 | 0 | 0 | 967 | 142 | 307 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1263 | 295 | 449 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1263 | 295 | 449 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 0 | 100 | 100 | | | |
| cM capacity (veh/h) | 187 | 750 | 1122 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 273 | 967 | 449 | | | |
| Volume Left | 273 | 0 | 0 | | | |
| Volume Right | 0 | 0 | 307 | | | |
| cSH | 187 | 1700 | 1700 | | | |
| Volume to Capacity | 1.46 | 0.57 | 0.26 | | | |
| Queue Length 95th (ft) | 337 | 0 | 0 | | | |
| Control Delay (s) | 280.5 | 0.0 | 0.0 | | | |
| Lane LOS | F | | | | | |
| Approach Delay (s) | 280.5 | 0.0 | 0.0 | | | |
| Approach LOS | F | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 45.4 | | | |
| Intersection Capacity Utilization | | 63.5% | | ICU Level of Service | | B |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 603: Nahantan Bypass & Clapboardtree St.

2012 Existing AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 26 | 0 | 545 | 11 | 0 | 119 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 6% | | | -6% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 30 | 0 | 634 | 13 | 0 | 138 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 778 | 640 | | | 634 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 778 | 640 | | | 634 | |
| tC, single (s) | 6.5 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.3 | | | 2.2 | |
| p0 queue free % | 92 | 100 | | | 100 | |
| cM capacity (veh/h) | 356 | 479 | | | 959 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 30 | 647 | 138 |
| Volume Left | 30 | 0 | 0 |
| Volume Right | 0 | 13 | 0 |
| cSH | 356 | 1700 | 1700 |
| Volume to Capacity | 0.08 | 0.38 | 0.08 |
| Queue Length 95th (ft) | 6 | 0 | 0 |
| Control Delay (s) | 16.0 | 0.0 | 0.0 |
| Lane LOS | C | | |
| Approach Delay (s) | 16.0 | 0.0 | 0.0 |
| Approach LOS | C | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 0.6 | |
| Intersection Capacity Utilization | | 39.4% | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis
 604: Nahatan Street & Clapboardtree St.

2012 Existing AM



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | | ↔ | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 79 | 88 | 13 | 0 | 142 | 258 | 50 | 495 | 0 | 16 | 106 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 92 | 102 | 15 | 0 | 165 | 300 | 58 | 576 | 0 | 19 | 123 | 0 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|-----------------------|------|-------|-------|------|
| Volume Total (vph) | 209 | 465 | 634 | 142 |
| Volume Left (vph) | 92 | 0 | 58 | 19 |
| Volume Right (vph) | 15 | 300 | 0 | 0 |
| Hadj (s) | 0.11 | -0.33 | 0.03 | 0.13 |
| Departure Headway (s) | 7.6 | 6.5 | 6.7 | 7.9 |
| Degree Utilization, x | 0.44 | 0.84 | 1.18 | 0.31 |
| Capacity (veh/h) | 444 | 465 | 542 | 411 |
| Control Delay (s) | 16.6 | 35.5 | 124.0 | 14.4 |
| Approach Delay (s) | 16.6 | 35.5 | 124.0 | 14.4 |
| Approach LOS | C | E | F | B |

| Intersection Summary | | | |
|-----------------------------------|-------|------|------------------------|
| Delay | | 69.4 | |
| HCM Level of Service | | F | |
| Intersection Capacity Utilization | 78.3% | | ICU Level of Service D |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis

605: Nahantan Bypass & Nahatan Street

2012 Existing AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | ↗ | | ↕ | ↕ | |
| Volume (veh/h) | 0 | 11 | 26 | 400 | 104 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 5% | -8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 13 | 30 | 465 | 121 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 647 | 121 | 121 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 647 | 121 | 121 | | | |
| tC, single (s) | 6.4 | 6.3 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | 2.3 | | | |
| p0 queue free % | 100 | 99 | 98 | | | |
| cM capacity (veh/h) | 430 | 912 | 1430 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 13 | 495 | 121 | | | |
| Volume Left | 0 | 30 | 0 | | | |
| Volume Right | 13 | 0 | 0 | | | |
| cSH | 912 | 1430 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.02 | 0.07 | | | |
| Queue Length 95th (ft) | 1 | 1 | 0 | | | |
| Control Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.7 | | | |
| Intersection Capacity Utilization | | | 32.5% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
606: N. Connector Road & Nahatan Street

2012 Existing AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 264 | 192 | 0 | 235 | 180 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 6% | | 8% | | | -3% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 307 | 223 | 0 | 273 | 209 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 979 | 223 | | | 223 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 979 | 223 | | | 223 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 62 | | | 80 | |
| cM capacity (veh/h) | 222 | 811 | | | 1334 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 307 | 223 | 483 |
| Volume Left | 0 | 0 | 273 |
| Volume Right | 307 | 0 | 0 |
| cSH | 811 | 1700 | 1334 |
| Volume to Capacity | 0.38 | 0.13 | 0.20 |
| Queue Length 95th (ft) | 36 | 0 | 15 |
| Control Delay (s) | 12.1 | 0.0 | 5.6 |
| Lane LOS | B | | A |
| Approach Delay (s) | 12.1 | 0.0 | 5.6 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 6.3 | |
| Intersection Capacity Utilization | | 58.9% | ICU Level of Service B |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis
 602: N. Connector Road & Clapboardtree St.

2017 No Build AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 244 | 0 | 0 | 881 | 128 | 271 |
| Sign Control | Stop | | | Free | Free | |
| Grade | -12% | | | -5% | 8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 284 | 0 | 0 | 1024 | 149 | 315 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1331 | 306 | 464 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1331 | 306 | 464 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 0 | 100 | 100 | | | |
| cM capacity (veh/h) | 170 | 739 | 1108 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 284 | 1024 | 464 | | | |
| Volume Left | 284 | 0 | 0 | | | |
| Volume Right | 0 | 0 | 315 | | | |
| cSH | 170 | 1700 | 1700 | | | |
| Volume to Capacity | 1.67 | 0.60 | 0.27 | | | |
| Queue Length 95th (ft) | 392 | 0 | 0 | | | |
| Control Delay (s) | 371.9 | 0.0 | 0.0 | | | |
| Lane LOS | F | | | | | |
| Approach Delay (s) | 371.9 | 0.0 | 0.0 | | | |
| Approach LOS | F | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 59.5 | | | |
| Intersection Capacity Utilization | | 66.6% | | ICU Level of Service | | C |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 603: Nahantan Bypass & Clapboardtree St.

2017 No Build AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 27 | 0 | 582 | 11 | 0 | 125 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 6% | | | -6% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 31 | 0 | 677 | 13 | 0 | 145 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 828 | 683 | | | 677 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 828 | 683 | | | 677 | |
| tC, single (s) | 6.5 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.3 | | | 2.2 | |
| p0 queue free % | 91 | 100 | | | 100 | |
| cM capacity (veh/h) | 333 | 453 | | | 924 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 31 | 690 | 145 |
| Volume Left | 31 | 0 | 0 |
| Volume Right | 0 | 13 | 0 |
| cSH | 333 | 1700 | 1700 |
| Volume to Capacity | 0.09 | 0.41 | 0.09 |
| Queue Length 95th (ft) | 6 | 0 | 0 |
| Control Delay (s) | 16.9 | 0.0 | 0.0 |
| Lane LOS | C | | |
| Approach Delay (s) | 16.9 | 0.0 | 0.0 |
| Approach LOS | C | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 0.6 | |
| Intersection Capacity Utilization | | 41.3% | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis
 604: Nahatan Street & Clapboardtree St.

2017 No Build AM



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|-------|-------|----------------------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | | ↔ | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 81 | 90 | 13 | 0 | 146 | 270 | 51 | 531 | 0 | 16 | 111 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 94 | 105 | 15 | 0 | 170 | 314 | 59 | 617 | 0 | 19 | 129 | 0 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total (vph) | 214 | 484 | 677 | 148 | | | | | | | | |
| Volume Left (vph) | 94 | 0 | 59 | 19 | | | | | | | | |
| Volume Right (vph) | 15 | 314 | 0 | 0 | | | | | | | | |
| Hadj (s) | 0.11 | -0.34 | 0.03 | 0.13 | | | | | | | | |
| Departure Headway (s) | 7.8 | 6.6 | 6.9 | 8.0 | | | | | | | | |
| Degree Utilization, x | 0.46 | 0.89 | 1.29 | 0.33 | | | | | | | | |
| Capacity (veh/h) | 439 | 484 | 534 | 409 | | | | | | | | |
| Control Delay (s) | 17.2 | 41.4 | 166.7 | 15.0 | | | | | | | | |
| Approach Delay (s) | 17.2 | 41.4 | 166.7 | 15.0 | | | | | | | | |
| Approach LOS | C | E | F | B | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Delay | | | 91.1 | | | | | | | | | |
| HCM Level of Service | | | F | | | | | | | | | |
| Intersection Capacity Utilization | | | 81.7% | ICU Level of Service | D | | | | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

605: Nahantan Bypass & Nahatan Street

2017 No Build AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 11 | 27 | 415 | 107 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 5% | -8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 13 | 31 | 483 | 124 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | | |
| | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 670 | 124 | 124 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 670 | 124 | 124 | | | |
| tC, single (s) | 6.4 | 6.3 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | 2.3 | | | |
| p0 queue free % | 100 | 99 | 98 | | | |
| cM capacity (veh/h) | 416 | 908 | 1426 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 13 | 514 | 124 | | | |
| Volume Left | 0 | 31 | 0 | | | |
| Volume Right | 13 | 0 | 0 | | | |
| cSH | 908 | 1426 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.02 | 0.07 | | | |
| Queue Length 95th (ft) | 1 | 1 | 0 | | | |
| Control Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.7 | | | |
| Intersection Capacity Utilization | | | 33.3% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 606: N. Connector Road & Nahatan Street

2017 No Build AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 271 | 197 | 0 | 244 | 185 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 6% | | 8% | | | -3% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 315 | 229 | 0 | 284 | 215 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1012 | 229 | | | 229 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1012 | 229 | | | 229 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 61 | | | 79 | |
| cM capacity (veh/h) | 210 | 805 | | | 1327 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 315 | 229 | 499 |
| Volume Left | 0 | 0 | 284 |
| Volume Right | 315 | 0 | 0 |
| cSH | 805 | 1700 | 1327 |
| Volume to Capacity | 0.39 | 0.13 | 0.21 |
| Queue Length 95th (ft) | 37 | 0 | 16 |
| Control Delay (s) | 12.3 | 0.0 | 5.7 |
| Lane LOS | B | | A |
| Approach Delay (s) | 12.3 | 0.0 | 5.7 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 6.4 | |
| Intersection Capacity Utilization | | 60.4% | ICU Level of Service B |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis
602: N. Connector Road & Clapboardtree St.

2017 Build AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 265 | 0 | 0 | 917 | 143 | 285 |
| Sign Control | Stop | | | Free | Free | |
| Grade | -12% | | | -5% | 8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 308 | 0 | 0 | 1066 | 166 | 331 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1398 | 332 | 498 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1398 | 332 | 498 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 0 | 100 | 100 | | | |
| cM capacity (veh/h) | 155 | 715 | 1077 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 308 | 1066 | 498 | | | |
| Volume Left | 308 | 0 | 0 | | | |
| Volume Right | 0 | 0 | 331 | | | |
| cSH | 155 | 1700 | 1700 | | | |
| Volume to Capacity | 1.99 | 0.63 | 0.29 | | | |
| Queue Length 95th (ft) | 479 | 0 | 0 | | | |
| Control Delay (s) | 515.9 | 0.0 | 0.0 | | | |
| Lane LOS | F | | | | | |
| Approach Delay (s) | 515.9 | 0.0 | 0.0 | | | |
| Approach LOS | F | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 84.9 | | | |
| Intersection Capacity Utilization | | 69.6% | | ICU Level of Service | | C |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
603: Nahantan Bypass & Clapboardtree St.

2017 Build AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 27 | 0 | 618 | 11 | 0 | 140 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 6% | | | -6% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 31 | 0 | 719 | 13 | 0 | 163 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 888 | 725 | | | 719 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 888 | 725 | | | 719 | |
| tC, single (s) | 6.5 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.3 | | | 2.2 | |
| p0 queue free % | 90 | 100 | | | 100 | |
| cM capacity (veh/h) | 307 | 428 | | | 892 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 31 | 731 | 163 |
| Volume Left | 31 | 0 | 0 |
| Volume Right | 0 | 13 | 0 |
| cSH | 307 | 1700 | 1700 |
| Volume to Capacity | 0.10 | 0.43 | 0.10 |
| Queue Length 95th (ft) | 7 | 0 | 0 |
| Control Delay (s) | 18.1 | 0.0 | 0.0 |
| Lane LOS | C | | |
| Approach Delay (s) | 18.1 | 0.0 | 0.0 |
| Approach LOS | C | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 0.6 | |
| Intersection Capacity Utilization | | 43.2% | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis
 604: Nahatan Street & Clapboardtree St.

2017 Build AM



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|-------|-------|----------------------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 81 | 90 | 13 | 0 | 146 | 270 | 51 | 567 | 0 | 16 | 127 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 94 | 105 | 15 | 0 | 170 | 314 | 59 | 659 | 0 | 19 | 148 | 0 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total (vph) | 214 | 484 | 719 | 166 | | | | | | | | |
| Volume Left (vph) | 94 | 0 | 59 | 19 | | | | | | | | |
| Volume Right (vph) | 15 | 314 | 0 | 0 | | | | | | | | |
| Hadj (s) | 0.11 | -0.34 | 0.03 | 0.12 | | | | | | | | |
| Departure Headway (s) | 7.9 | 6.7 | 7.0 | 8.1 | | | | | | | | |
| Degree Utilization, x | 0.47 | 0.90 | 1.39 | 0.37 | | | | | | | | |
| Capacity (veh/h) | 432 | 532 | 518 | 410 | | | | | | | | |
| Control Delay (s) | 17.6 | 43.7 | 209.3 | 15.8 | | | | | | | | |
| Approach Delay (s) | 17.6 | 43.7 | 209.3 | 15.8 | | | | | | | | |
| Approach LOS | C | E | F | C | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Delay | | | 112.4 | | | | | | | | | |
| HCM Level of Service | | | F | | | | | | | | | |
| Intersection Capacity Utilization | | | 84.5% | ICU Level of Service | E | | | | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

605: Nahantan Bypass & Nahatan Street

2017 Build AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 11 | 27 | 415 | 107 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 5% | -8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 13 | 31 | 483 | 124 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 670 | 124 | 124 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 670 | 124 | 124 | | | |
| tC, single (s) | 6.4 | 6.3 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | 2.3 | | | |
| p0 queue free % | 100 | 99 | 98 | | | |
| cM capacity (veh/h) | 416 | 908 | 1426 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 13 | 514 | 124 | | | |
| Volume Left | 0 | 31 | 0 | | | |
| Volume Right | 13 | 0 | 0 | | | |
| cSH | 908 | 1426 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.02 | 0.07 | | | |
| Queue Length 95th (ft) | 1 | 1 | 0 | | | |
| Control Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.7 | | | |
| Intersection Capacity Utilization | | | 33.3% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

606: N. Connector Road & Nahatan Street

2017 Build AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 285 | 197 | 0 | 265 | 185 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 6% | | 8% | | | -3% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 331 | 229 | 0 | 308 | 215 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1060 | 229 | | | 229 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1060 | 229 | | | 229 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 59 | | | 77 | |
| cM capacity (veh/h) | 191 | 805 | | | 1327 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 331 | 229 | 523 |
| Volume Left | 0 | 0 | 308 |
| Volume Right | 331 | 0 | 0 |
| cSH | 805 | 1700 | 1327 |
| Volume to Capacity | 0.41 | 0.13 | 0.23 |
| Queue Length 95th (ft) | 41 | 0 | 18 |
| Control Delay (s) | 12.6 | 0.0 | 6.0 |
| Lane LOS | B | | A |
| Approach Delay (s) | 12.6 | 0.0 | 6.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|----------------------|
| Average Delay | | 6.7 | |
| Intersection Capacity Utilization | | 62.4% | ICU Level of Service |
| Analysis Period (min) | | 15 | B |

HCM Unsignalized Intersection Capacity Analysis
 602: N. Connector Road & Clapboardtree St.

2022 No Build AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 252 | 0 | 0 | 911 | 132 | 278 |
| Sign Control | Stop | | | Free | Free | |
| Grade | -12% | | | -5% | 8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 293 | 0 | 0 | 1059 | 153 | 323 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1374 | 315 | 477 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1374 | 315 | 477 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 0 | 100 | 100 | | | |
| cM capacity (veh/h) | 160 | 731 | 1096 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 293 | 1059 | 477 | | | |
| Volume Left | 293 | 0 | 0 | | | |
| Volume Right | 0 | 0 | 323 | | | |
| cSH | 160 | 1700 | 1700 | | | |
| Volume to Capacity | 1.83 | 0.62 | 0.28 | | | |
| Queue Length 95th (ft) | 433 | 0 | 0 | | | |
| Control Delay (s) | 444.9 | 0.0 | 0.0 | | | |
| Lane LOS | F | | | | | |
| Approach Delay (s) | 444.9 | 0.0 | 0.0 | | | |
| Approach LOS | F | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 71.3 | | | |
| Intersection Capacity Utilization | | | 68.6% | ICU Level of Service | | C |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

603: Nahantan Bypass & Clapboardtree St.

2022 No Build AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 27 | 0 | 604 | 12 | 0 | 129 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 6% | | | -6% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 31 | 0 | 702 | 14 | 0 | 150 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 859 | 709 | | | 702 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 859 | 709 | | | 702 | |
| tC, single (s) | 6.5 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.3 | | | 2.2 | |
| p0 queue free % | 90 | 100 | | | 100 | |
| cM capacity (veh/h) | 319 | 437 | | | 904 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 31 | 716 | 150 |
| Volume Left | 31 | 0 | 0 |
| Volume Right | 0 | 14 | 0 |
| cSH | 319 | 1700 | 1700 |
| Volume to Capacity | 0.10 | 0.42 | 0.09 |
| Queue Length 95th (ft) | 6 | 0 | 0 |
| Control Delay (s) | 17.5 | 0.0 | 0.0 |
| Lane LOS | C | | |
| Approach Delay (s) | 17.5 | 0.0 | 0.0 |
| Approach LOS | C | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 0.6 | |
| Intersection Capacity Utilization | | 42.5% | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis
 604: Nahatan Street & Clapboardtree St.

2022 No Build AM



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | | ↔ | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 83 | 93 | 14 | 0 | 149 | 276 | 53 | 552 | 0 | 17 | 115 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 97 | 108 | 16 | 0 | 173 | 321 | 62 | 642 | 0 | 20 | 134 | 0 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|-----------------------|------|-------|-------|------|
| Volume Total (vph) | 221 | 494 | 703 | 153 |
| Volume Left (vph) | 97 | 0 | 62 | 20 |
| Volume Right (vph) | 16 | 321 | 0 | 0 |
| Hadj (s) | 0.11 | -0.34 | 0.03 | 0.13 |
| Departure Headway (s) | 7.8 | 6.7 | 7.0 | 8.2 |
| Degree Utilization, x | 0.48 | 0.91 | 1.37 | 0.35 |
| Capacity (veh/h) | 437 | 535 | 527 | 407 |
| Control Delay (s) | 17.9 | 46.3 | 197.8 | 15.5 |
| Approach Delay (s) | 17.9 | 46.3 | 197.8 | 15.5 |
| Approach LOS | C | E | F | C |

| Intersection Summary | | | |
|-----------------------------------|-------|-------|------------------------|
| Delay | | 107.1 | |
| HCM Level of Service | | F | |
| Intersection Capacity Utilization | 83.8% | | ICU Level of Service E |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis

605: Nahantan Bypass & Nahatan Street

2022 No Build AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 12 | 27 | 425 | 109 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 5% | -8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 14 | 31 | 494 | 127 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 684 | 127 | 127 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 684 | 127 | 127 | | | |
| tC, single (s) | 6.4 | 6.3 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | 2.3 | | | |
| p0 queue free % | 100 | 98 | 98 | | | |
| cM capacity (veh/h) | 408 | 905 | 1423 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 14 | 526 | 127 | | | |
| Volume Left | 0 | 31 | 0 | | | |
| Volume Right | 14 | 0 | 0 | | | |
| cSH | 905 | 1423 | 1700 | | | |
| Volume to Capacity | 0.02 | 0.02 | 0.07 | | | |
| Queue Length 95th (ft) | 1 | 1 | 0 | | | |
| Control Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.7 | | | |
| Intersection Capacity Utilization | | | 33.9% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 606: N. Connector Road & Nahatan Street

2022 No Build AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 278 | 202 | 0 | 252 | 189 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 6% | | 8% | | | -3% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 323 | 235 | 0 | 293 | 220 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1041 | 235 | | | 235 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1041 | 235 | | | 235 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 60 | | | 78 | |
| cM capacity (veh/h) | 199 | 799 | | | 1321 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 323 | 235 | 513 |
| Volume Left | 0 | 0 | 293 |
| Volume Right | 323 | 0 | 0 |
| cSH | 799 | 1700 | 1321 |
| Volume to Capacity | 0.40 | 0.14 | 0.22 |
| Queue Length 95th (ft) | 39 | 0 | 17 |
| Control Delay (s) | 12.5 | 0.0 | 5.8 |
| Lane LOS | B | | A |
| Approach Delay (s) | 12.5 | 0.0 | 5.8 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 6.6 | |
| Intersection Capacity Utilization | | 61.7% | ICU Level of Service B |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis
602: N. Connector Road & Clapboardtree St.

2022 Build AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 273 | 0 | 0 | 947 | 148 | 292 |
| Sign Control | Stop | | | Free | Free | |
| Grade | -12% | | | -5% | 8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 317 | 0 | 0 | 1101 | 172 | 340 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1443 | 342 | 512 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1443 | 342 | 512 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 0 | 100 | 100 | | | |
| cM capacity (veh/h) | 146 | 706 | 1064 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 317 | 1101 | 512 | | | |
| Volume Left | 317 | 0 | 0 | | | |
| Volume Right | 0 | 0 | 340 | | | |
| cSH | 146 | 1700 | 1700 | | | |
| Volume to Capacity | 2.18 | 0.65 | 0.30 | | | |
| Queue Length 95th (ft) | 521 | 0 | 0 | | | |
| Control Delay (s) | 603.8 | 0.0 | 0.0 | | | |
| Lane LOS | F | | | | | |
| Approach Delay (s) | 603.8 | 0.0 | 0.0 | | | |
| Approach LOS | F | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 99.3 | | | |
| Intersection Capacity Utilization | | | 71.6% | ICU Level of Service | | C |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
603: Nahantan Bypass & Clapboardtree St.

2022 Build AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 27 | 0 | 640 | 12 | 0 | 145 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 6% | | | -6% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 31 | 0 | 744 | 14 | 0 | 169 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 920 | 751 | | | 744 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 920 | 751 | | | 744 | |
| tC, single (s) | 6.5 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.6 | 3.3 | | | 2.2 | |
| p0 queue free % | 89 | 100 | | | 100 | |
| cM capacity (veh/h) | 293 | 414 | | | 873 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 31 | 758 | 169 |
| Volume Left | 31 | 0 | 0 |
| Volume Right | 0 | 14 | 0 |
| cSH | 293 | 1700 | 1700 |
| Volume to Capacity | 0.11 | 0.45 | 0.10 |
| Queue Length 95th (ft) | 7 | 0 | 0 |
| Control Delay (s) | 18.7 | 0.0 | 0.0 |
| Lane LOS | C | | |
| Approach Delay (s) | 18.7 | 0.0 | 0.0 |
| Approach LOS | C | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 0.6 | |
| Intersection Capacity Utilization | | 44.4% | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis
 604: Nahatan Street & Clapboardtree St.

2022 Build AM



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | | ↔ | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 83 | 93 | 14 | 0 | 149 | 276 | 53 | 587 | 0 | 17 | 131 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 97 | 108 | 16 | 0 | 173 | 321 | 62 | 683 | 0 | 20 | 152 | 0 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|-----------------------|------|-------|-------|------|
| Volume Total (vph) | 221 | 494 | 744 | 172 |
| Volume Left (vph) | 97 | 0 | 62 | 20 |
| Volume Right (vph) | 16 | 321 | 0 | 0 |
| Hadj (s) | 0.11 | -0.34 | 0.03 | 0.12 |
| Departure Headway (s) | 8.0 | 6.8 | 7.1 | 8.2 |
| Degree Utilization, x | 0.49 | 0.93 | 1.47 | 0.39 |
| Capacity (veh/h) | 430 | 518 | 509 | 407 |
| Control Delay (s) | 18.4 | 49.1 | 242.1 | 16.4 |
| Approach Delay (s) | 18.4 | 49.1 | 242.1 | 16.4 |
| Approach LOS | C | E | F | C |

| Intersection Summary | | | |
|-----------------------------------|-------|-------|------------------------|
| Delay | | 129.6 | |
| HCM Level of Service | | F | |
| Intersection Capacity Utilization | 86.6% | | ICU Level of Service E |
| Analysis Period (min) | | 15 | |

HCM Unsignalized Intersection Capacity Analysis

605: Nahantan Bypass & Nahatan Street

2022 Build AM



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|------|----------------------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 12 | 27 | 425 | 109 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 5% | -8% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 14 | 31 | 494 | 127 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 684 | 127 | 127 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 684 | 127 | 127 | | | |
| tC, single (s) | 6.4 | 6.3 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | 2.3 | | | |
| p0 queue free % | 100 | 98 | 98 | | | |
| cM capacity (veh/h) | 408 | 905 | 1423 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 14 | 526 | 127 | | | |
| Volume Left | 0 | 31 | 0 | | | |
| Volume Right | 14 | 0 | 0 | | | |
| cSH | 905 | 1423 | 1700 | | | |
| Volume to Capacity | 0.02 | 0.02 | 0.07 | | | |
| Queue Length 95th (ft) | 1 | 1 | 0 | | | |
| Control Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 9.0 | 0.7 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.7 | | | |
| Intersection Capacity Utilization | | | 33.9% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

606: N. Connector Road & Nahatan Street

2022 Build AM



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 0 | 292 | 202 | 0 | 273 | 189 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 6% | | 8% | | | -3% |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 340 | 235 | 0 | 317 | 220 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1090 | 235 | | | 235 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1090 | 235 | | | 235 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 58 | | | 76 | |
| cM capacity (veh/h) | 182 | 799 | | | 1321 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|------------------------|------|------|------|
| Volume Total | 340 | 235 | 537 |
| Volume Left | 0 | 0 | 317 |
| Volume Right | 340 | 0 | 0 |
| cSH | 799 | 1700 | 1321 |
| Volume to Capacity | 0.42 | 0.14 | 0.24 |
| Queue Length 95th (ft) | 43 | 0 | 19 |
| Control Delay (s) | 12.8 | 0.0 | 6.0 |
| Lane LOS | B | | A |
| Approach Delay (s) | 12.8 | 0.0 | 6.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|-----------------------------------|--|-------|------------------------|
| Average Delay | | 6.8 | |
| Intersection Capacity Utilization | | 63.8% | ICU Level of Service B |
| Analysis Period (min) | | 15 | |