



## MEMORANDUM

**TO:** File

**FROM:** Anna Smith, P.E.

**DATE:** October 31, 2008

**SUBJECT:** Roadway Improvements for US 50 ACP Model

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### Introduction

The US 50 Access Control Plan (ACP) 2035 No-Build traffic models in Synchro operate at an extremely poor Level of Service for the future No-Build peak hour conditions at many of the intersections. Many of the intersecting roadways currently carry very minimal traffic volumes and are anticipated to carry high volumes in the future. For this reason, assumptions for roadway improvements were made at several of the intersections that are anticipated to carry much higher traffic volumes in the future. The roadway improvements that were added to the model were minor and were only included if they could be accommodated within the existing right-of-way. The improvements included adding left or right turn lanes where it will be warranted and there currently are none, converting single left turn lanes to dual left turn lanes where warranted, and converting several right turn movements to free-right turns where projected high volumes require it.

Traffic signals were added to the No-Build model at the locations where they are expected to be warranted and are within spacing guidelines. The number of through lanes on US 50 was not modified.

### Summary of Improvements

The following is a summary of the roadway improvements assumed in the 2035 No-Build scenario along US 50. These changes were also assumed for the "With ACP Implemented" scenario.

- Unawep Avenue (Existing Signalized Intersection)
  - Eastbound: converted existing left turn lane to dual left turn lane
  - Southbound: added southbound right lane storage on Unawep Avenue
  - North leg: added a northbound through lane to accommodate eastbound dual left
- Palmer Avenue approaches (per Alpine Bank TIS) (Proposed Signal)
  - Eastbound: added continuous eastbound deceleration/acceleration lane from Aspen Street
  - Westbound: added a left turn lane
  - Northbound: added a left turn lane
- 27 Road (Existing Signalized Intersection)
  - Northbound: converted existing shared left/through and right turn lane to separate left turn lane and shared through/right
  - Southbound: converted existing shared left/through and right turn lane to separate left turn lane and shared through/right
  - Added northbound and southbound permitted/protected phasing
- 29 Road (Existing Signalized Intersection)
  - Eastbound: converted existing left turn lane to dual left turn lane
  - Westbound: added a channelizing island and overlapped phasing




















- North leg: added a northbound through lane to accommodate eastbound dual left
- Sundance Road (Existing Signalized Intersection)
  - Northbound: converted existing left turn lane to dual left turn lane
- 29 ½ Road (Future Signal)
  - Northbound: converted existing shared left/through/right approach to a separate left turn lane with a shared through/right lane
  - Southbound: converted existing shared left/through/right approach to a separate left turn lane with a shared through/right lane
- 30 Road (Future Signal)
  - Southbound: converted shared left/right lane to separate right and left turn lanes and added storage
- 31 Road (Future Signal)
  - Southbound: converted shared left/through/right lane to separate left turn lane and a shared through/right turn lane and added storage
- SH 141B (Existing Signalized Intersection)
  - Eastbound: converted existing left turn lane to dual left turn lane
  - Southbound: added a southbound right turn lane and added storage
  - North leg: added a northbound through lane to accommodate eastbound dual left from US 50
- Reeder Mesa (Future Signal)
  - Eastbound: converted existing left turn lane to dual left turn lane
  - Southbound: converted existing shared left/through/right lane to separate channelized right turn lane and a shared left/through lane and added storage to right turn lane
  - North leg: added a northbound through lane to accommodate eastbound dual left from US 50

# Intersection LOS

# HCM Unsignalized Intersection Capacity Analysis

## 1: US 50 #1 & Grand Mesa Ave

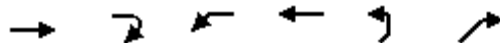
11/5/2008

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |  |
| Volume (veh/h)                    | 2                                                                                 | 746                                                                               | 0                                                                                 | 44                                                                                | 1492                                                                              | 10                                                                                | 2                                                                                  | 0                                                                                   | 3                                                                                   | 2                                                                                   | 0                                                                                   | 34                                                                                  |
| Sign Control                      |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                    | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 5                                                                                 | 1711                                                                              | 0                                                                                 | 101                                                                               | 3422                                                                              | 23                                                                                | 5                                                                                  | 0                                                                                   | 7                                                                                   | 5                                                                                   | 0                                                                                   | 78                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Median type                       |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 3445                                                                              |                                                                                   |                                                                                   | 1711                                                                              |                                                                                   |                                                                                   | 3672                                                                               | 5367                                                                                | 855                                                                                 | 4507                                                                                | 5355                                                                                | 1722                                                                                |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 3445                                                                              |                                                                                   |                                                                                   | 1711                                                                              |                                                                                   |                                                                                   | 3672                                                                               | 5367                                                                                | 855                                                                                 | 4507                                                                                | 5355                                                                                | 1722                                                                                |
| tC, single (s)                    | 4.2                                                                               |                                                                                   |                                                                                   | 4.2                                                                               |                                                                                   |                                                                                   | 7.6                                                                                | 6.6                                                                                 | 7.0                                                                                 | 7.6                                                                                 | 6.6                                                                                 | 7.0                                                                                 |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.6                                                                                | 4.0                                                                                 | 3.4                                                                                 | 3.6                                                                                 | 4.0                                                                                 | 3.4                                                                                 |
| p0 queue free %                   | 93                                                                                |                                                                                   |                                                                                   | 71                                                                                |                                                                                   |                                                                                   | 0                                                                                  | 100                                                                                 | 98                                                                                  | 0                                                                                   | 100                                                                                 | 0                                                                                   |
| cM capacity (veh/h)               | 70                                                                                |                                                                                   |                                                                                   | 354                                                                               |                                                                                   |                                                                                   | 0                                                                                  | 0                                                                                   | 295                                                                                 | 0                                                                                   | 0                                                                                   | 76                                                                                  |
| Direction, Lane #                 | EB 1                                                                              | EB 2                                                                              | EB 3                                                                              | WB 1                                                                              | WB 2                                                                              | WB 3                                                                              | NB 1                                                                               | SB 1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 5                                                                                 | 1141                                                                              | 570                                                                               | 101                                                                               | 2281                                                                              | 1164                                                                              | 11                                                                                 | 83                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 5                                                                                 | 0                                                                                 | 0                                                                                 | 101                                                                               | 0                                                                                 | 0                                                                                 | 5                                                                                  | 5                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 23                                                                                | 7                                                                                  | 78                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 70                                                                                | 1700                                                                              | 1700                                                                              | 354                                                                               | 1700                                                                              | 1700                                                                              | 0                                                                                  | 4                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.07                                                                              | 0.67                                                                              | 0.34                                                                              | 0.29                                                                              | 1.34                                                                              | 0.68                                                                              | Err                                                                                | 19.67                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 5                                                                                 | 0                                                                                 | 0                                                                                 | 29                                                                                | 0                                                                                 | 0                                                                                 | Err                                                                                | Err                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 60.0                                                                              | 0.0                                                                               | 0.0                                                                               | 19.2                                                                              | 0.0                                                                               | 0.0                                                                               | Err                                                                                | Err                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | F                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | F                                                                                  | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.2                                                                               |                                                                                   |                                                                                   | 0.5                                                                               |                                                                                   |                                                                                   | Err                                                                                | Err                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | F                                                                                  | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | Err                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 105.5%                                                                            |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                    | G                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 2: US 50 #1 & Gunnison Blvd

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NEL  | NER  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      | ↑↑   | ↘    |      |
| Volume (veh/h)         | 747  | 11   | 0    | 1543 | 0    | 5    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 1677 | 25   | 0    | 3464 | 0    | 11   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      |      | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      | 1069 |      |      |
| pX, platoon unblocked  |      |      |      |      | 0.32 |      |
| vC, conflicting volume |      |      | 1701 |      | 3421 | 851  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 1701 |      | 4302 | 851  |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 96   |
| cM capacity (veh/h)    |      |      | 357  |      | 0    | 297  |

| Direction, Lane #      | EB 1 | EB 2 | WB 1 | WB 2 | NE 1 |
|------------------------|------|------|------|------|------|
| Volume Total           | 1118 | 584  | 1732 | 1732 | 11   |
| Volume Left            | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 25   | 0    | 0    | 11   |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 297  |
| Volume to Capacity     | 0.66 | 0.34 | 1.02 | 1.02 | 0.04 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 3    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 17.6 |
| Lane LOS               |      |      |      |      | C    |
| Approach Delay (s)     | 0.0  |      | 0.0  |      | 17.6 |
| Approach LOS           |      |      |      |      | C    |

| Intersection Summary              |  |  |        |                      |   |
|-----------------------------------|--|--|--------|----------------------|---|
| Average Delay                     |  |  | 0.0    |                      |   |
| Intersection Capacity Utilization |  |  | 100.0% | ICU Level of Service | F |
| Analysis Period (min)             |  |  | 15     |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

## 3: US 50 #1 & Santa Clara Ave

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |      |      |      |      |      |      |
| Volume (veh/h)         | 30   | 721  | 0    | 1    | 1484 | 2    | 0    | 0    | 1    | 0    | 0    | 41   |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 69   | 1654 | 0    | 2    | 3404 | 5    | 0    | 0    | 2    | 0    | 0    | 94   |
| Pedestrians            |      |      |      |      |      |      |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |      |      |      |      |      |
| Median type            |      | None |      |      | None |      |      |      |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      | 634  |      |      |      |      |      |      |      |
| pX, platoon unblocked  | 0.32 |      |      |      |      |      | 0.32 | 0.32 |      | 0.32 | 0.32 | 0.32 |
| vC, conflicting volume | 3408 |      |      | 1654 |      |      | 3592 | 5204 | 827  | 4377 | 5202 | 1704 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 4284 |      |      | 1654 |      |      | 4861 | 9932 | 827  | 7331 | 9924 | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 0    |      |      | 99   |      |      | 0    | 0    | 99   | 0    | 0    | 72   |
| cM capacity (veh/h)    | 10   |      |      | 373  |      |      | 0    | 0    | 309  | 0    | 0    | 342  |

| Direction, Lane #      | EB 1   | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 |
|------------------------|--------|------|------|------|------|------|------|------|
| Volume Total           | 69     | 1102 | 551  | 2    | 2269 | 1139 | 2    | 94   |
| Volume Left            | 69     | 0    | 0    | 2    | 0    | 0    | 0    | 0    |
| Volume Right           | 0      | 0    | 0    | 0    | 0    | 5    | 2    | 94   |
| cSH                    | 10     | 1700 | 1700 | 373  | 1700 | 1700 | 309  | 342  |
| Volume to Capacity     | 6.96   | 0.65 | 0.32 | 0.01 | 1.33 | 0.67 | 0.01 | 0.28 |
| Queue Length 95th (ft) | Err    | 0    | 0    | 0    | 0    | 0    | 1    | 28   |
| Control Delay (s)      | 3427.0 | 0.0  | 0.0  | 14.7 | 0.0  | 0.0  | 16.8 | 19.5 |
| Lane LOS               | F      |      |      | B    |      |      | C    | C    |
| Approach Delay (s)     | 136.9  |      |      | 0.0  |      |      | 16.8 | 19.5 |
| Approach LOS           |        |      |      |      |      |      | C    | C    |

### Intersection Summary

|                                   |       |      |                      |
|-----------------------------------|-------|------|----------------------|
| Average Delay                     |       | 45.5 |                      |
| Intersection Capacity Utilization | 98.7% |      | ICU Level of Service |
| Analysis Period (min)             |       | 15   |                      |

# HCM Unsignalized Intersection Capacity Analysis

## 5: US 50 #1 & James St

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |      |      |      |      |      |      |
| Volume (veh/h)         | 0    | 532  | 0    | 0    | 1253 | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 0    | 1245 | 0    | 0    | 2933 | 0    | 0    | 0    | 0    | 0    | 0    | 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)   |      | 513  |      |      |      |      |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      | 0.91 |      |      | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 2933 |      |      | 1245 |      |      | 2712 | 4178 | 623  | 3555 | 4178 | 1466 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 2933 |      |      | 1073 |      |      | 2683 | 4294 | 389  | 3610 | 4294 | 1466 |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 100  |      |      | 100  |      |      | 100  | 100  | 100  | 100  | 100  | 100  |
| cM capacity (veh/h)    | 114  |      |      | 572  |      |      | 9    | 2    | 547  | 2    | 2    | 114  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 |
|------------------------|------|------|------|------|------|------|------|------|
| Volume Total           | 0    | 830  | 415  | 0    | 1955 | 978  | 0    | 0    |
| Volume Left            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity     | 0.00 | 0.49 | 0.24 | 0.00 | 1.15 | 0.58 | 0.00 | 0.00 |
| Queue Length 95th (ft) | 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  |
| Lane LOS               |      |      |      |      |      |      | A    | A    |
| Approach Delay (s)     | 0.0  |      |      | 0.0  |      |      | 0.0  | 0.0  |
| Approach LOS           |      |      |      |      |      |      | A    | A    |

### Intersection Summary

|                                   |       |
|-----------------------------------|-------|
| Average Delay                     | 0.0   |
| Intersection Capacity Utilization | 77.1% |
| ICU Level of Service              | D     |
| Analysis Period (min)             | 15    |

# HCM Unsignalized Intersection Capacity Analysis

## 6: US 50 #1 & Green Acre 1

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      | ↑↑   |      | ↗    |
| Volume (veh/h)         | 530  | 0    | 0    | 1252 | 0    | 0    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 1254 | 0    | 0    | 2963 | 0    | 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)   | 1023 |      |      | 1090 |      |      |
| pX, platoon unblocked  | 0.92 |      |      | 0.32 | 0.92 |      |
| vC, conflicting volume | 1254 |      |      | 2736 | 627  |      |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 1093 |      |      | 965  | 407  |      |
| tC, single (s)         | 4.2  |      |      | 6.9  | 7.0  |      |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 3.6  | 3.4  |      |
| p0 queue free %        | 100  |      |      | 100  | 100  |      |
| cM capacity (veh/h)    | 565  |      |      | 78   | 535  |      |

| Direction, Lane #      | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 |
|------------------------|------|------|------|------|------|
| Volume Total           | 836  | 418  | 1482 | 1482 | 0    |
| Volume Left            | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 0    | 0    | 0    |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity     | 0.49 | 0.25 | 0.87 | 0.87 | 0.00 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 0    |
| Control Delay (s)      | 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 | 77.0% |  | ICU Level of Service | D |  |
| Analysis Period (min)             | 15    |  |                      |   |  |



# HCM Unsignalized Intersection Capacity Analysis

## 7: US 50 #1 & Elm Park

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      | ↙    | ↑↑   | ↘    |      |
| Volume (veh/h)         | 522  | 4    | 5    | 1263 | 6    | 6    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 1235 | 9    | 12   | 2989 | 14   | 14   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      |      | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   | 1190 |      |      | 923  |      |      |
| pX, platoon unblocked  |      |      |      | 0.92 | 0.31 | 0.92 |
| vC, conflicting volume |      |      |      | 1245 | 2758 | 622  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      |      | 1093 | 1080 | 416  |
| tC, single (s)         |      |      |      | 4.2  | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      |      | 2.2  | 3.6  | 3.4  |
| p0 queue free %        |      |      |      | 98   | 78   | 97   |
| cM capacity (veh/h)    |      |      |      | 568  | 64   | 531  |

| Direction, Lane #      | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 |   |
|------------------------|------|------|------|------|------|------|---|
| Volume Total           | 824  | 421  | 12   | 1495 | 1495 | 28   |   |
| Volume Left            | 0    | 0    | 12   | 0    | 0    | 14   |   |
| Volume Right           | 0    | 9    | 0    | 0    | 0    | 14   |   |
| cSH                    | 1700 | 1700 | 568  | 1700 | 1700 | 114  |   |
| Volume to Capacity     | 0.48 | 0.25 | 0.02 | 0.88 | 0.88 | 0.25 |   |
| Queue Length 95th (ft) | 0    | 0    | 2    | 0    | 0    | 23   |   |
| Control Delay (s)      | 0.0  | 0.0  | 11.5 | 0.0  | 0.0  | 46.9 |   |
| Lane LOS               |      |      |      | B    |      |      | E |
| Approach Delay (s)     | 0.0  | 0.0  |      |      |      | 46.9 |   |
| Approach LOS           |      |      |      |      |      | E    |   |

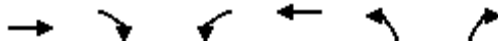
### Intersection Summary

|                                   |  |  |       |                      |   |  |
|-----------------------------------|--|--|-------|----------------------|---|--|
| Average Delay                     |  |  | 0.3   |                      |   |  |
| Intersection Capacity Utilization |  |  | 84.4% | ICU Level of Service | E |  |
| Analysis Period (min)             |  |  | 15    |                      |   |  |

# HCM Unsignalized Intersection Capacity Analysis

## 8: US 50 #1 & Green Acre 2

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      | ↑↑   |      | ↗    |
| Volume (veh/h)         | 519  | 1    | 0    | 1264 | 0    | 9    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 1242 | 2    | 0    | 3025 | 0    | 22   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      |      | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   | 596  |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      | 0.27 |      |
| vC, conflicting volume | 1244 |      |      | 2756 | 622  |      |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 1244 |      |      | 2092 | 622  |      |
| tC, single (s)         | 4.2  |      |      | 6.9  | 7.0  |      |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 3.6  | 3.4  |      |
| p0 queue free %        | 100  |      |      | 100  | 95   |      |
| cM capacity (veh/h)    | 539  |      |      | 12   | 422  |      |

| Direction, Lane #      | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 |
|------------------------|------|------|------|------|------|
| Volume Total           | 828  | 416  | 1513 | 1513 | 22   |
| Volume Left            | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 2    | 0    | 0    | 22   |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 422  |
| Volume to Capacity     | 0.49 | 0.24 | 0.89 | 0.89 | 0.05 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 4    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 14.0 |
| Lane LOS               | B    |      |      |      |      |
| Approach Delay (s)     | 0.0  | 0.0  |      | 14.0 |      |
| Approach LOS           | B    |      |      |      |      |

| Intersection Summary              |       |  |                      |   |  |
|-----------------------------------|-------|--|----------------------|---|--|
| Average Delay                     | 0.1   |  |                      |   |  |
| Intersection Capacity Utilization | 77.8% |  | ICU Level of Service | D |  |
| Analysis Period (min)             | 15    |  |                      |   |  |

# HCM Unsignalized Intersection Capacity Analysis

## 9: US 50 #1 & Aspen St

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    | ↗    | ↕    |      | ↖    | ↕    |      |      | ↕    |      |      | ↕    |      |
| Volume (veh/h)         | 13   | 512  | 7    | 6    | 1261 | 2    | 1    | 0    | 5    | 2    | 0    | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 31   | 1225 | 10   | 8    | 3018 | 5    | 2    | 0    | 6    | 5    | 0    | 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)   |      |      |      |      | 381  |      |      |      |      |      |      |      |
| pX, platoon unblocked  | 0.27 |      |      |      |      |      | 0.27 | 0.27 |      | 0.27 | 0.27 | 0.27 |
| vC, conflicting volume | 3023 |      |      | 1235 |      |      | 2818 | 4332 | 618  | 3718 | 4335 | 1511 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 3085 |      |      | 1235 |      |      | 2318 | 8001 | 618  | 5694 | 8010 | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 0    |      |      | 98   |      |      | 0    | 0    | 99   | 0    | 0    | 100  |
| cM capacity (veh/h)    | 26   |      |      | 543  |      |      | 0    | 0    | 425  | 0    | 0    | 286  |

| Direction, Lane #      | EB 1  | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 |
|------------------------|-------|------|------|------|------|------|------|------|
| Volume Total           | 31    | 817  | 418  | 8    | 2012 | 1011 | 8    | 5    |
| Volume Left            | 31    | 0    | 0    | 8    | 0    | 0    | 2    | 5    |
| Volume Right           | 0     | 0    | 10   | 0    | 0    | 5    | 6    | 0    |
| cSH                    | 26    | 1700 | 1700 | 543  | 1700 | 1700 | 0    | 0    |
| Volume to Capacity     | 1.18  | 0.48 | 0.25 | 0.02 | 1.18 | 0.59 | Err  | Err  |
| Queue Length 95th (ft) | 93    | 0    | 0    | 1    | 0    | 0    | Err  | Err  |
| Control Delay (s)      | 456.3 | 0.0  | 0.0  | 11.7 | 0.0  | 0.0  | Err  | Err  |
| Lane LOS               | F     |      |      | B    |      |      | F    | F    |
| Approach Delay (s)     | 11.2  |      |      | 0.0  |      |      | Err  | Err  |
| Approach LOS           |       |      |      |      |      |      | F    | F    |

### Intersection Summary

|                                   |       |     |                        |
|-----------------------------------|-------|-----|------------------------|
| Average Delay                     |       | Err |                        |
| Intersection Capacity Utilization | 84.4% |     | ICU Level of Service E |
| Analysis Period (min)             | 15    |     |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 11: US 50 #1 & Palisade St

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↖    | ↑↑   | ↑↑   |      | ↘    |      |
| Volume (veh/h)         | 12   | 514  | 1302 | 8    | 0    | 5    |
| Sign Control           |      | Free | Free |      | Stop |      |
| Grade                  |      | 0%   | 0%   |      | 0%   |      |
| Peak Hour Factor       | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 29   | 1230 | 3116 | 19   | 0    | 12   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            |      | None | None |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      | 420  |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      | 0.85 |      |
| vC, conflicting volume | 3135 |      |      |      | 3798 | 1568 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 3135 |      |      |      | 3943 | 1568 |
| tC, single (s)         | 4.2  |      |      |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.6  | 3.4  |
| p0 queue free %        | 69   |      |      |      | 100  | 88   |
| cM capacity (veh/h)    | 94   |      |      |      | 1    | 97   |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|------|------|------|
| Volume Total           | 29   | 615  | 615  | 2077 | 1058 | 12   |
| Volume Left            | 29   | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 0    | 0    | 19   | 12   |
| cSH                    | 94   | 1700 | 1700 | 1700 | 1700 | 97   |
| Volume to Capacity     | 0.31 | 0.36 | 0.36 | 1.22 | 0.62 | 0.12 |
| Queue Length 95th (ft) | 29   | 0    | 0    | 0    | 0    | 10   |
| Control Delay (s)      | 59.2 | 0.0  | 0.0  | 0.0  | 0.0  | 47.3 |
| Lane LOS               | F    |      |      |      |      | E    |
| Approach Delay (s)     | 1.4  |      |      | 0.0  |      | 47.3 |
| Approach LOS           |      |      |      |      |      | E    |

### Intersection Summary

|                                   |  |       |  |                      |  |   |
|-----------------------------------|--|-------|--|----------------------|--|---|
| Average Delay                     |  | 0.5   |  |                      |  |   |
| Intersection Capacity Utilization |  | 87.2% |  | ICU Level of Service |  | E |
| Analysis Period (min)             |  | 15    |  |                      |  |   |

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Intersection has too many legs for HCM analysis.

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HCM Unsignalized Intersection Capacity Analysis  
 14: US 50 #1 & Dorothy Ave

11/5/2008

| Movement                          | EBL         | EBT         | EBR         | WBL         | WBT                  | WBR         | NBL         | NBT         | NBR         | SBL  | SBT  | SBR  |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|-------------|-------------|-------------|-------------|------|------|------|
| Lane Configurations               |             |             |             |             |                      |             |             |             |             |      |      |      |
| Volume (veh/h)                    | 2           | 417         | 66          | 0           | 1070                 | 10          | 33          | 0           | 3           | 13   | 0    | 20   |
| Sign Control                      |             | Free        |             |             | Free                 |             |             | Stop        |             |      | Stop |      |
| Grade                             |             | 0%          |             |             | 0%                   |             |             | 0%          |             |      | 0%   |      |
| Peak Hour Factor                  | 0.89        | 0.89        | 0.89        | 0.89        | 0.89                 | 0.89        | 0.89        | 0.89        | 0.89        | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph)            | 5           | 1068        | 169         | 0           | 2741                 | 26          | 85          | 0           | 8           | 33   | 0    | 51   |
| Pedestrians                       |             |             |             |             |                      |             |             |             |             |      |      |      |
| Lane Width (ft)                   |             |             |             |             |                      |             |             |             |             |      |      |      |
| Walking Speed (ft/s)              |             |             |             |             |                      |             |             |             |             |      |      |      |
| Percent Blockage                  |             |             |             |             |                      |             |             |             |             |      |      |      |
| Right turn flare (veh)            |             |             |             |             |                      |             |             |             |             |      |      |      |
| Median type                       |             | None        |             |             | None                 |             |             |             |             |      |      |      |
| Median storage (veh)              |             |             |             |             |                      |             |             |             |             |      |      |      |
| Upstream signal (ft)              |             | 807         |             |             |                      |             |             |             |             |      |      |      |
| pX, platoon unblocked             |             |             |             | 0.86        |                      |             | 0.86        | 0.86        | 0.86        | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume            | 2767        |             |             | 1068        |                      |             | 2500        | 3845        | 534         | 3306 | 3832 | 1383 |
| vC1, stage 1 conf vol             |             |             |             |             |                      |             |             |             |             |      |      |      |
| vC2, stage 2 conf vol             |             |             |             |             |                      |             |             |             |             |      |      |      |
| vCu, unblocked vol                | 2767        |             |             | 756         |                      |             | 2420        | 3982        | 135         | 3355 | 3967 | 1383 |
| tC, single (s)                    | 4.2         |             |             | 4.2         |                      |             | 7.6         | 6.6         | 7.0         | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)                   |             |             |             |             |                      |             |             |             |             |      |      |      |
| tF (s)                            | 2.2         |             |             | 2.2         |                      |             | 3.6         | 4.0         | 3.4         | 3.6  | 4.0  | 3.4  |
| p0 queue free %                   | 96          |             |             | 100         |                      |             | 0           | 100         | 99          | 0    | 100  | 61   |
| cM capacity (veh/h)               | 133         |             |             | 715         |                      |             | 8           | 2           | 757         | 2    | 2    | 130  |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>EB 2</b> | <b>EB 3</b> | <b>EB 4</b> | <b>WB 1</b>          | <b>WB 2</b> | <b>WB 3</b> | <b>NB 1</b> | <b>SB 1</b> |      |      |      |
| Volume Total                      | 5           | 534         | 534         | 169         | 0                    | 1827        | 939         | 92          | 85          |      |      |      |
| Volume Left                       | 5           | 0           | 0           | 0           | 0                    | 0           | 0           | 85          | 33          |      |      |      |
| Volume Right                      | 0           | 0           | 0           | 169         | 0                    | 0           | 26          | 8           | 51          |      |      |      |
| cSH                               | 133         | 1700        | 1700        | 1700        | 1700                 | 1700        | 1700        | 9           | 6           |      |      |      |
| Volume to Capacity                | 0.04        | 0.31        | 0.31        | 0.10        | 0.00                 | 1.07        | 0.55        | 10.39       | 14.18       |      |      |      |
| Queue Length 95th (ft)            | 3           | 0           | 0           | 0           | 0                    | 0           | 0           | Err         | Err         |      |      |      |
| Control Delay (s)                 | 33.1        | 0.0         | 0.0         | 0.0         | 0.0                  | 0.0         | 0.0         | Err         | Err         |      |      |      |
| Lane LOS                          | D           |             |             |             |                      |             |             | F           | F           |      |      |      |
| Approach Delay (s)                | 0.1         |             |             |             | 0.0                  |             |             | Err         | Err         |      |      |      |
| Approach LOS                      |             |             |             |             |                      |             |             | F           | F           |      |      |      |
| <b>Intersection Summary</b>       |             |             |             |             |                      |             |             |             |             |      |      |      |
| Average Delay                     |             |             | 422.3       |             |                      |             |             |             |             |      |      |      |
| Intersection Capacity Utilization |             |             | 84.2%       |             | ICU Level of Service |             |             |             | E           |      |      |      |
| Analysis Period (min)             |             |             | 15          |             |                      |             |             |             |             |      |      |      |













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Intersection Sign configuration not allowed in HCM analysis.

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HCM Unsignalized Intersection Capacity Analysis  
 16: US 50 #1 & WB On-Ramp

11/5/2008

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                    |                                                                                     | ↗                                                                                   |                                                                                     |                                                                                     | ↗                                                                                   |
| Volume (veh/h)                    | 0                                                                                 | 366                                                                               | 0                                                                                 | 0                                                                                 | 790                                                                               | 0                                                                                 | 0                                                                                  | 0                                                                                   | 3                                                                                   | 0                                                                                   | 0                                                                                   | 360                                                                                 |
| Sign Control                      |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                    | Yield                                                                               |                                                                                     |                                                                                     | Yield                                                                               |                                                                                     |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 907                                                                               | 0                                                                                 | 0                                                                                 | 2353                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 5                                                                                   | 0                                                                                   | 0                                                                                   | 571                                                                                 |
| 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            | 2353                                                                              |                                                                                   |                                                                                   | 907                                                                               |                                                                                   |                                                                                   | 2655                                                                               | 3260                                                                                | 454                                                                                 | 2811                                                                                | 3260                                                                                | 1176                                                                                |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2353                                                                              |                                                                                   |                                                                                   | 907                                                                               |                                                                                   |                                                                                   | 2655                                                                               | 3260                                                                                | 454                                                                                 | 2811                                                                                | 3260                                                                                | 1176                                                                                |
| tC, single (s)                    | 4.2                                                                               |                                                                                   |                                                                                   | 4.2                                                                               |                                                                                   |                                                                                   | 7.6                                                                                | 6.6                                                                                 | 7.0                                                                                 | 7.6                                                                                 | 6.6                                                                                 | 7.0                                                                                 |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.6                                                                                | 4.0                                                                                 | 3.4                                                                                 | 3.6                                                                                 | 4.0                                                                                 | 3.4                                                                                 |
| p0 queue free %                   | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |                                                                                   | 0                                                                                  | 100                                                                                 | 99                                                                                  | 100                                                                                 | 100                                                                                 | 0                                                                                   |
| cM capacity (veh/h)               | 196                                                                               |                                                                                   |                                                                                   | 728                                                                               |                                                                                   |                                                                                   | 0                                                                                  | 8                                                                                   | 545                                                                                 | 8                                                                                   | 8                                                                                   | 179                                                                                 |
| Direction, Lane #                 | EB 1                                                                              | EB 2                                                                              | WB 1                                                                              | WB 2                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 454                                                                               | 454                                                                               | 1176                                                                              | 1176                                                                              | 5                                                                                 | 571                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 5                                                                                 | 571                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 545                                                                               | 179                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.27                                                                              | 0.27                                                                              | 0.69                                                                              | 0.69                                                                              | 0.01                                                                              | 3.18                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | Err                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 11.7                                                                              | Err                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   | B                                                                                 | F                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 11.7                                                                              | Err                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   | B                                                                                 | F                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 1489.2                                                                            |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 99.0%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | F                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |



HCM Unsignalized Intersection Capacity Analysis  
 17: US 50 #1 & Frontage Rd

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖    | ↑↑   | ↗    | ↖    | ↑↑   | ↗    |      | ↕    |      |      | ↕    |      |
| Volume (veh/h)         | 40   | 306  | 15   | 15   | 741  | 9    | 4    | 4    | 3    | 0    | 5    | 45   |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 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) | 127  | 975  | 48   | 48   | 2361 | 29   | 13   | 13   | 10   | 0    | 16   | 143  |
| 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 | 2390 |      |      | 1023 |      |      | 2657 | 3715 | 487  | 3215 | 3734 | 1180 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 2390 |      |      | 1023 |      |      | 2657 | 3715 | 487  | 3215 | 3734 | 1180 |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 33   |      |      | 93   |      |      | 0    | 0    | 98   | 0    | 0    | 20   |
| cM capacity (veh/h)    | 190  |      |      | 657  |      |      | 0    | 1    | 518  | 0    | 1    | 178  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | EB 4 | WB 1 | WB 2 | WB 3 | WB 4 | NB 1 | SB 1  |
|------------------------|------|------|------|------|------|------|------|------|------|-------|
| Volume Total           | 127  | 487  | 487  | 48   | 48   | 1180 | 1180 | 29   | 35   | 159   |
| Volume Left            | 127  | 0    | 0    | 0    | 48   | 0    | 0    | 0    | 13   | 0     |
| Volume Right           | 0    | 0    | 0    | 48   | 0    | 0    | 0    | 29   | 10   | 143   |
| cSH                    | 190  | 1700 | 1700 | 1700 | 657  | 1700 | 1700 | 1700 | 0    | 12    |
| Volume to Capacity     | 0.67 | 0.29 | 0.29 | 0.03 | 0.07 | 0.69 | 0.69 | 0.02 | Err  | 13.78 |
| Queue Length 95th (ft) | 101  | 0    | 0    | 0    | 6    | 0    | 0    | 0    | Err  | Err   |
| Control Delay (s)      | 55.9 | 0.0  | 0.0  | 0.0  | 10.9 | 0.0  | 0.0  | 0.0  | Err  | Err   |
| Lane LOS               | F    |      |      |      | B    |      |      |      | F    | F     |
| Approach Delay (s)     | 6.2  |      |      |      | 0.2  |      |      |      | Err  | Err   |
| Approach LOS           |      |      |      |      |      |      |      |      | F    | F     |

Intersection Summary

|                                   |  |  |       |     |                      |  |  |  |   |  |
|-----------------------------------|--|--|-------|-----|----------------------|--|--|--|---|--|
| Average Delay                     |  |  |       | Err |                      |  |  |  |   |  |
| Intersection Capacity Utilization |  |  | 83.4% |     | ICU Level of Service |  |  |  | E |  |
| Analysis Period (min)             |  |  | 15    |     |                      |  |  |  |   |  |

# HCM Unsignalized Intersection Capacity Analysis

## 20: US 50 WB #3 & Fairgrounds

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |
| Volume (veh/h)         | 0    | 0    | 8    | 739  | 6    | 0    |
| Sign Control           | Free |      |      | Free | Stop |      |
| 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    | 24   | 2201 | 18   | 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)   | 1235 |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |
| vC, conflicting volume |      |      | 0    |      | 1148 | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 0    |      | 1148 | 0    |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 99   |      | 90   | 100  |
| cM capacity (veh/h)    |      |      | 1600 |      | 185  | 1075 |

| Direction, Lane #      | WB 1 | WB 2 | WB 3 | NB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 24   | 1100 | 1100 | 18   |
| Volume Left            | 24   | 0    | 0    | 18   |
| Volume Right           | 0    | 0    | 0    | 0    |
| cSH                    | 1600 | 1700 | 1700 | 185  |
| Volume to Capacity     | 0.01 | 0.65 | 0.65 | 0.10 |
| Queue Length 95th (ft) | 1    | 0    | 0    | 8    |
| Control Delay (s)      | 7.3  | 0.0  | 0.0  | 26.6 |
| Lane LOS               | A    |      |      | D    |
| Approach Delay (s)     | 0.1  |      |      | 26.6 |
| Approach LOS           |      |      |      | D    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.3   |                        |
| Intersection Capacity Utilization |  | 92.2% | ICU Level of Service F |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 21: US 50 EB #2 & Fairgrounds

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   | ↗    |      |      |      |      | ↑    |      |      | ↖    |      |
| Volume (veh/h)         | 0    | 302  | 6    | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 8    | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0    | 899  | 18   | 0    | 0    | 0    | 0    | 18   | 0    | 0    | 24   | 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)   |      | 1250 |      |      |      |      |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      | 0.88 |      |      | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| vC, conflicting volume | 0    |      |      | 917  |      |      | 911  | 899  | 450  | 459  | 917  | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 0    |      |      | 625  |      |      | 618  | 604  | 91   | 102  | 625  | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 100  |      |      | 100  |      |      | 100  | 95   | 100  | 100  | 93   | 100  |
| cM capacity (veh/h)    | 1600 |      |      | 818  |      |      | 305  | 355  | 823  | 725  | 345  | 1075 |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | NB 1 | SB 1 |
|------------------------|------|------|------|------|------|
| Volume Total           | 450  | 450  | 18   | 18   | 24   |
| Volume Left            | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 18   | 0    | 0    |
| cSH                    | 1700 | 1700 | 1700 | 355  | 345  |
| Volume to Capacity     | 0.26 | 0.26 | 0.01 | 0.05 | 0.07 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 4    | 6    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 15.7 | 16.2 |
| Lane LOS               |      |      |      | C    | C    |
| Approach Delay (s)     | 0.0  |      |      | 15.7 | 16.2 |
| Approach LOS           |      |      |      | C    | C    |

### Intersection Summary

|                                   |  |       |  |                      |   |
|-----------------------------------|--|-------|--|----------------------|---|
| Average Delay                     |  | 0.7   |  |                      |   |
| Intersection Capacity Utilization |  | 87.5% |  | ICU Level of Service | E |
| Analysis Period (min)             |  | 15    |  |                      |   |

HCM Unsignalized Intersection Capacity Analysis  
 22: US 50 EB #2 & KOA

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      |      |      | ↗    |
| Volume (veh/h)         | 300  | 3    | 0    | 0    | 0    | 13   |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 956  | 10   | 0    | 0    | 0    | 41   |
| 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 |      |      | 965  |      | 961  | 483  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 965  |      | 961  | 483  |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 92   |
| cM capacity (veh/h)    |      |      | 691  |      | 249  | 522  |

| Direction, Lane #      | EB 1 | EB 2 | NB 1 |
|------------------------|------|------|------|
| Volume Total           | 637  | 328  | 41   |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 10   | 41   |
| cSH                    | 1700 | 1700 | 522  |
| Volume to Capacity     | 0.37 | 0.19 | 0.08 |
| Queue Length 95th (ft) | 0    | 0    | 6    |
| Control Delay (s)      | 0.0  | 0.0  | 12.5 |
| Lane LOS               |      |      | B    |
| Approach Delay (s)     | 0.0  |      | 12.5 |
| Approach LOS           |      |      | B    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.5   |                        |
| Intersection Capacity Utilization |  | 33.0% | ICU Level of Service A |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 25: US 50 EB #2 & Rainbow Dr

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   | ↗    |      |      |      | ↗    |
| Volume (veh/h)         | 1021 | 9    | 0    | 0    | 0    | 38   |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| Hourly flow rate (vph) | 1215 | 11   | 0    | 0    | 0    | 45   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      |      | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   | 831  |      |      |      |      |      |
| pX, platoon unblocked  |      |      | 0.86 |      | 0.86 | 0.86 |
| vC, conflicting volume |      |      | 1226 |      | 1215 | 608  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 932  |      | 919  | 211  |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 93   |
| cM capacity (veh/h)    |      |      | 610  |      | 227  | 674  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | NB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 608  | 608  | 11   | 45   |
| Volume Left            | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 11   | 45   |
| cSH                    | 1700 | 1700 | 1700 | 674  |
| Volume to Capacity     | 0.36 | 0.36 | 0.01 | 0.07 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 5    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 10.7 |
| Lane LOS               |      |      |      | B    |
| Approach Delay (s)     | 0.0  |      |      | 10.7 |
| Approach LOS           |      |      |      | B    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.4   |                        |
| Intersection Capacity Utilization |  | 38.2% | ICU Level of Service A |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 26: US 50 WB #3 & Tennessee St

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↗    |
| Volume (veh/h)         | 0    | 0    | 2180 | 0    | 0    | 9    |
| Sign Control           |      | Free | Free |      | Stop |      |
| Grade                  |      | 0%   | 0%   |      | 0%   |      |
| Peak Hour Factor       | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| Hourly flow rate (vph) | 0    | 0    | 2725 | 0    | 0    | 11   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            |      | None | None |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      | 1096 |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |
| vC, conflicting volume | 2725 |      |      | 2725 | 1362 |      |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 2725 |      |      | 2725 | 1362 |      |
| tC, single (s)         | 4.2  |      |      | 6.9  | 7.0  |      |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 3.6  | 3.4  |      |
| p0 queue free %        | 100  |      |      | 100  | 92   |      |
| cM capacity (veh/h)    | 139  |      |      | 16   | 134  |      |

| Direction, Lane #      | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 1817 | 908  | 11   |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 11   |
| cSH                    | 1700 | 1700 | 134  |
| Volume to Capacity     | 1.07 | 0.53 | 0.08 |
| Queue Length 95th (ft) | 0    | 0    | 7    |
| Control Delay (s)      | 0.0  | 0.0  | 34.3 |
| Lane LOS               |      |      | D    |
| Approach Delay (s)     | 0.0  |      | 34.3 |
| Approach LOS           |      |      | D    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.1   |                        |
| Intersection Capacity Utilization |  | 70.3% | ICU Level of Service C |
| Analysis Period (min)             |  | 15    |                        |

HCM Unsignalized Intersection Capacity Analysis  
 27: US 50 WB #3 & Indiana St

11/5/2008



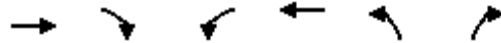
| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↗    |
| Volume (veh/h)         | 0    | 0    | 680  | 1    | 0    | 0    |
| Sign Control           |      | Free | Free |      | Stop |      |
| Grade                  |      | 0%   | 0%   |      | 0%   |      |
| Peak Hour Factor       | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| Hourly flow rate (vph) | 0    | 0    | 840  | 1    | 0    | 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 | 841  |      |      |      | 840  | 420  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 841  |      |      |      | 840  | 420  |
| tC, single (s)         | 4.2  |      |      |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.6  | 3.4  |
| p0 queue free %        | 100  |      |      |      | 100  | 100  |
| cM capacity (veh/h)    | 771  |      |      |      | 298  | 573  |

| Direction, Lane #      | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 560  | 281  | 0    |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 1    | 0    |
| cSH                    | 1700 | 1700 | 1700 |
| Volume to Capacity     | 0.33 | 0.17 | 0.00 |
| Queue Length 95th (ft) | 0    | 0    | 0    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  |
| Lane LOS               |      |      | A    |
| Approach Delay (s)     | 0.0  |      | 0.0  |
| Approach LOS           |      |      | A    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.0   |                        |
| Intersection Capacity Utilization |  | 22.2% | ICU Level of Service A |
| Analysis Period (min)             |  | 15    |                        |

HCM Unsignalized Intersection Capacity Analysis  
 28: US 50 WB #3 & Dee Vee Dr

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL   | NBR  |
|------------------------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↕↕   | ↗     |      |
| Volume (veh/h)         | 0    | 0    | 0    | 2108 | 3     | 0    |
| Sign Control           | Free |      |      | Free | Yield |      |
| Grade                  | 0%   |      |      | 0%   | 0%    |      |
| Peak Hour Factor       | 0.87 | 0.87 | 0.87 | 0.87 | 0.87  | 0.87 |
| Hourly flow rate (vph) | 0    | 0    | 0    | 2423 | 3     | 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 |      |      | 0    | 1211 | 0     |      |
| vC1, stage 1 conf vol  |      |      |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |       |      |
| vCu, unblocked vol     |      |      | 0    | 1211 | 0     |      |
| tC, single (s)         |      |      | 4.2  | 6.9  | 7.0   |      |
| tC, 2 stage (s)        |      |      |      |      |       |      |
| tF (s)                 |      |      | 2.2  | 3.6  | 3.4   |      |
| p0 queue free %        |      |      | 100  | 98   | 100   |      |
| cM capacity (veh/h)    |      |      | 1600 | 170  | 1075  |      |

| Direction, Lane #      | WB 1 | WB 2 | NB 1 |
|------------------------|------|------|------|
| Volume Total           | 808  | 1615 | 3    |
| Volume Left            | 0    | 0    | 3    |
| Volume Right           | 0    | 0    | 0    |
| cSH                    | 1600 | 1700 | 170  |
| Volume to Capacity     | 0.00 | 0.95 | 0.02 |
| Queue Length 95th (ft) | 0    | 0    | 2    |
| Control Delay (s)      | 0.0  | 0.0  | 26.6 |
| Lane LOS               | D    |      |      |
| Approach Delay (s)     | 0.0  | 26.6 |      |
| Approach LOS           | D    |      |      |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 0.0   |                      |   |
| Intersection Capacity Utilization | 68.3% | ICU Level of Service | C |
| Analysis Period (min)             | 15    |                      |   |



# HCM Unsignalized Intersection Capacity Analysis

29: US 50 EB #2 & Dee Vee Dr

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↔↔   |      |      |      |      |      | ↔    |      |      | ↔     |      |
| Volume (veh/h)         | 3    | 1065 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 3    | 0     | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Yield |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%    |      |
| Peak Hour Factor       | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87  | 0.87 |
| Hourly flow rate (vph) | 3    | 1224 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 3    | 0     | 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 | 0    |      |      | 1224 |      |      | 1231 | 1231 | 612  | 619  | 1231  | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |       |      |
| vCu, unblocked vol     | 0    |      |      | 1224 |      |      | 1231 | 1231 | 612  | 619  | 1231  | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6   | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |       |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0   | 3.4  |
| p0 queue free %        | 100  |      |      | 100  |      |      | 100  | 100  | 100  | 99   | 100   | 100  |
| cM capacity (veh/h)    | 1600 |      |      | 549  |      |      | 130  | 172  | 429  | 366  | 172   | 1075 |

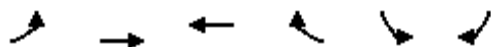
| Direction, Lane #      | EB 1 | EB 2 | NB 1 | SB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 616  | 612  | 0    | 3    |
| Volume Left            | 3    | 0    | 0    | 3    |
| Volume Right           | 0    | 0    | 0    | 0    |
| cSH                    | 1600 | 1700 | 1700 | 366  |
| Volume to Capacity     | 0.00 | 0.36 | 0.00 | 0.01 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 1    |
| Control Delay (s)      | 0.1  | 0.0  | 0.0  | 14.9 |
| Lane LOS               | A    |      | A    | B    |
| Approach Delay (s)     | 0.0  |      | 0.0  | 14.9 |
| Approach LOS           |      |      | A    | B    |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 0.1   |                      |
| Intersection Capacity Utilization |  | 39.5% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | A                    |

# HCM Unsignalized Intersection Capacity Analysis

## 30: US 50 WB #3 & Elm Dr

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↗    |
| Volume (veh/h)         | 0    | 0    | 2108 | 0    | 0    | 4    |
| Sign Control           |      | Free | Free |      | Stop |      |
| Grade                  |      | 0%   | 0%   |      | 0%   |      |
| Peak Hour Factor       | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| Hourly flow rate (vph) | 0    | 0    | 2510 | 0    | 0    | 5    |
| 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 | 2510 |      |      |      | 2510 | 1255 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 2510 |      |      |      | 2510 | 1255 |
| tC, single (s)         | 4.2  |      |      |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.6  | 3.4  |
| p0 queue free %        | 100  |      |      |      | 100  | 97   |
| cM capacity (veh/h)    | 170  |      |      |      | 22   | 159  |

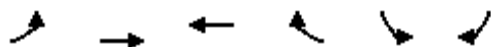
| Direction, Lane #      | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 1673 | 837  | 5    |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 5    |
| cSH                    | 1700 | 1700 | 159  |
| Volume to Capacity     | 0.98 | 0.49 | 0.03 |
| Queue Length 95th (ft) | 0    | 0    | 2    |
| Control Delay (s)      | 0.0  | 0.0  | 28.4 |
| Lane LOS               |      |      | D    |
| Approach Delay (s)     | 0.0  |      | 28.4 |
| Approach LOS           |      |      | D    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.1   |                        |
| Intersection Capacity Utilization |  | 68.3% | ICU Level of Service C |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 31: US 50 WB #3 & Reta Dr

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↑    |
| Volume (veh/h)         | 0    | 0    | 2110 | 0    | 0    | 2    |
| Sign Control           |      | Free | Free |      | Stop |      |
| 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    | 2293 | 0    | 0    | 2    |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            |      | None | None |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      | 389  |      |      |      |
| pX, platoon unblocked  | 0.46 |      |      |      | 0.46 | 0.46 |
| vC, conflicting volume | 2293 |      |      |      | 2293 | 1147 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 1474 |      |      |      | 1474 | 0    |
| tC, single (s)         | 4.2  |      |      |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.6  | 3.4  |
| p0 queue free %        | 100  |      |      |      | 100  | 100  |
| cM capacity (veh/h)    | 203  |      |      |      | 53   | 497  |

| Direction, Lane #      | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 1529 | 764  | 2    |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 2    |
| cSH                    | 1700 | 1700 | 497  |
| Volume to Capacity     | 0.90 | 0.45 | 0.00 |
| Queue Length 95th (ft) | 0    | 0    | 0    |
| Control Delay (s)      | 0.0  | 0.0  | 12.3 |
| Lane LOS               |      |      | B    |
| Approach Delay (s)     | 0.0  |      | 12.3 |
| Approach LOS           |      |      | B    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.0   |                        |
| Intersection Capacity Utilization |  | 68.3% | ICU Level of Service C |
| Analysis Period (min)             |  | 15    |                        |

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Intersection has too many lanes per leg.

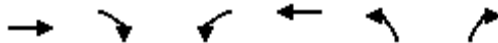
HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

# HCM Unsignalized Intersection Capacity Analysis

## 38: US 50 EB #2 & Redrock Rd

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      |      |      | ↗    |
| Volume (veh/h)         | 1313 | 18   | 0    | 0    | 0    | 41   |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 1475 | 20   | 0    | 0    | 0    | 46   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      | None |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   | 595  |      |      |      |      |      |
| pX, platoon unblocked  |      |      | 0.82 |      | 0.82 | 0.82 |
| vC, conflicting volume |      |      | 1496 |      | 1485 | 748  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 1165 |      | 1152 | 253  |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 92   |
| cM capacity (veh/h)    |      |      | 474  |      | 153  | 605  |

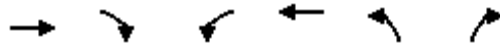
| Direction, Lane #      | EB 1 | EB 2 | NB 1 |
|------------------------|------|------|------|
| Volume Total           | 984  | 512  | 46   |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 20   | 46   |
| cSH                    | 1700 | 1700 | 605  |
| Volume to Capacity     | 0.58 | 0.30 | 0.08 |
| Queue Length 95th (ft) | 0    | 0    | 6    |
| Control Delay (s)      | 0.0  | 0.0  | 11.4 |
| Lane LOS               |      |      | B    |
| Approach Delay (s)     | 0.0  |      | 11.4 |
| Approach LOS           |      |      | B    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 0.3                  |   |
| Intersection Capacity Utilization | 46.9% | ICU Level of Service | A |
| Analysis Period (min)             | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

39: US 50 WB #3 & 29 1/4 Rd

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL   | NBR  |
|------------------------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↕↕   | ↕     |      |
| Volume (veh/h)         | 0    | 0    | 0    | 2978 | 82    | 0    |
| Sign Control           | Free |      |      | Free | Yield |      |
| Grade                  | 0%   |      |      | 0%   | 0%    |      |
| Peak Hour Factor       | 0.88 | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 |
| Hourly flow rate (vph) | 0    | 0    | 0    | 3384 | 93    | 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)   | 1002 |      |      |      |       |      |
| pX, platoon unblocked  |      |      |      |      |       |      |
| vC, conflicting volume |      |      | 0    | 1692 | 0     |      |
| vC1, stage 1 conf vol  |      |      |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |       |      |
| vCu, unblocked vol     |      |      | 0    | 1692 | 0     |      |
| tC, single (s)         |      |      | 4.2  | 6.9  | 7.0   |      |
| tC, 2 stage (s)        |      |      |      |      |       |      |
| tF (s)                 |      |      | 2.2  | 3.6  | 3.4   |      |
| p0 queue free %        |      |      | 100  | 0    | 100   |      |
| cM capacity (veh/h)    |      |      | 1600 | 81   | 1075  |      |

| Direction, Lane #      | WB 1 | WB 2  | NB 1  |
|------------------------|------|-------|-------|
| Volume Total           | 1128 | 2256  | 93    |
| Volume Left            | 0    | 0     | 93    |
| Volume Right           | 0    | 0     | 0     |
| cSH                    | 1600 | 1700  | 81    |
| Volume to Capacity     | 0.00 | 1.33  | 1.14  |
| Queue Length 95th (ft) | 0    | 0     | 167   |
| Control Delay (s)      | 0.0  | 0.0   | 236.1 |
| Lane LOS               | F    |       |       |
| Approach Delay (s)     | 0.0  | 236.1 |       |
| Approach LOS           | F    |       |       |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| Average Delay                     |        |                      | 6.3 |
| Intersection Capacity Utilization | 135.0% | ICU Level of Service | H   |
| Analysis Period (min)             |        |                      | 15  |

# HCM Unsignalized Intersection Capacity Analysis

40: US 50 EB #2 & 29 1/4 Rd

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↔↔   |      |      |      |      |      | ↔    |      |      | ↔     |      |
| Volume (veh/h)         | 0    | 1332 | 32   | 0    | 0    | 0    | 0    | 82   | 9    | 0    | 0     | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Yield |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%    |      |
| Peak Hour Factor       | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 |
| Hourly flow rate (vph) | 0    | 1514 | 36   | 0    | 0    | 0    | 0    | 93   | 10   | 0    | 0     | 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)   |      | 969  |      |      |      |      |      |      |      |      |       |      |
| pX, platoon unblocked  |      |      |      | 0.82 |      |      | 0.82 | 0.82 | 0.82 | 0.82 | 0.82  | 0.82 |
| vC, conflicting volume | 0    |      |      | 1550 |      |      | 1532 | 1532 | 775  | 814  | 1550  | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |       |      |
| vCu, unblocked vol     | 0    |      |      | 1228 |      |      | 1205 | 1205 | 280  | 328  | 1228  | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6   | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |       |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0   | 3.4  |
| p0 queue free %        | 100  |      |      | 100  |      |      | 100  | 36   | 98   | 100  | 100   | 100  |
| cM capacity (veh/h)    | 1600 |      |      | 448  |      |      | 111  | 146  | 579  | 233  | 141   | 1075 |

| Direction, Lane #      | EB 1 | EB 2 | NB 1 | SB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 757  | 793  | 103  | 0    |
| Volume Left            | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 36   | 10   | 0    |
| cSH                    | 1600 | 1700 | 157  | 1700 |
| Volume to Capacity     | 0.00 | 0.47 | 0.66 | 0.00 |
| Queue Length 95th (ft) | 0    | 0    | 93   | 0    |
| Control Delay (s)      | 0.0  | 0.0  | 63.5 | 0.0  |
| Lane LOS               |      |      | F    | A    |
| Approach Delay (s)     | 0.0  |      | 63.5 | 0.0  |
| Approach LOS           |      |      | F    | A    |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 4.0   |                      |
| Intersection Capacity Utilization |  | 93.5% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | F                    |

# HCM Unsignalized Intersection Capacity Analysis

42: US 50 #4 & 29 3/4 Rd

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    | ↘    | ↑↑   | ↗    | ↘    | ↑↑   | ↗    |      | ↕    |      |      | ↕    |      |
| Volume (veh/h)         | 36   | 1200 | 100  | 100  | 2300 | 14   | 100  | 0    | 100  | 9    | 0    | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.92 | 0.89 | 0.89 | 0.89 | 0.89 | 0.92 | 0.89 | 0.92 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 39   | 1348 | 112  | 112  | 2584 | 15   | 112  | 0    | 112  | 10   | 0    | 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 | 2599 |      |      | 1461 |      |      | 2943 | 4251 | 674  | 3674 | 4348 | 1292 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 2599 |      |      | 1461 |      |      | 2943 | 4251 | 674  | 3674 | 4348 | 1292 |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 75   |      |      | 75   |      |      | 0    | 100  | 71   | 0    | 100  | 100  |
| cM capacity (veh/h)    | 156  |      |      | 444  |      |      | 4    | 1    | 390  | 1    | 1    | 150  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | EB 4 | WB 1 | WB 2 | WB 3 | WB 4 | NB 1  | SB 1  |
|------------------------|------|------|------|------|------|------|------|------|-------|-------|
| Volume Total           | 39   | 674  | 674  | 112  | 112  | 1292 | 1292 | 15   | 225   | 10    |
| Volume Left            | 39   | 0    | 0    | 0    | 112  | 0    | 0    | 0    | 112   | 10    |
| Volume Right           | 0    | 0    | 0    | 112  | 0    | 0    | 0    | 15   | 112   | 0     |
| cSH                    | 156  | 1700 | 1700 | 1700 | 444  | 1700 | 1700 | 1700 | 8     | 1     |
| Volume to Capacity     | 0.25 | 0.40 | 0.40 | 0.07 | 0.25 | 0.76 | 0.76 | 0.01 | 27.80 | 12.97 |
| Queue Length 95th (ft) | 24   | 0    | 0    | 0    | 25   | 0    | 0    | 0    | Err   | Err   |
| Control Delay (s)      | 35.6 | 0.0  | 0.0  | 0.0  | 15.8 | 0.0  | 0.0  | 0.0  | Err   | Err   |
| Lane LOS               | E    |      |      |      | C    |      |      |      | F     | F     |
| Approach Delay (s)     | 0.9  |      |      |      | 0.7  |      |      |      | Err   | Err   |
| Approach LOS           |      |      |      |      |      |      |      |      | F     | F     |

## Intersection Summary

|                                   |  |       |  |                      |  |  |  |  |   |  |
|-----------------------------------|--|-------|--|----------------------|--|--|--|--|---|--|
| Average Delay                     |  | 528.1 |  |                      |  |  |  |  |   |  |
| Intersection Capacity Utilization |  | 87.3% |  | ICU Level of Service |  |  |  |  | E |  |
| Analysis Period (min)             |  | 15    |  |                      |  |  |  |  |   |  |



# HCM Unsignalized Intersection Capacity Analysis

## 44: US 50 #4 & S Frontage Rd

11/5/2008



| Movement                          | EBT  | EBR  | WBL   | WBT  | NBL                    | NBR   |
|-----------------------------------|------|------|-------|------|------------------------|-------|
| Lane Configurations               | ↑↑   |      | ↙     | ↑↑   | ↘                      |       |
| Volume (veh/h)                    | 1246 | 0    | 9     | 2418 | 19                     | 28    |
| Sign Control                      | Free |      |       | Free | Stop                   |       |
| Grade                             | 0%   |      |       | 0%   | 0%                     |       |
| Peak Hour Factor                  | 0.89 | 0.89 | 0.89  | 0.89 | 0.89                   | 0.89  |
| Hourly flow rate (vph)            | 1400 | 0    | 10    | 2717 | 21                     | 31    |
| 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            |      |      | 1400  | 2779 |                        | 700   |
| vC1, stage 1 conf vol             |      |      |       |      |                        |       |
| vC2, stage 2 conf vol             |      |      |       |      |                        |       |
| vCu, unblocked vol                |      |      | 1400  | 2779 |                        | 700   |
| tC, single (s)                    |      |      | 4.2   | 6.9  |                        | 7.0   |
| tC, 2 stage (s)                   |      |      |       |      |                        |       |
| tF (s)                            |      |      | 2.2   | 3.6  |                        | 3.4   |
| p0 queue free %                   |      |      | 98    | 0    |                        | 92    |
| cM capacity (veh/h)               |      |      | 469   | 14   |                        | 375   |
| Direction, Lane #                 | EB 1 | EB 2 | WB 1  | WB 2 | WB 3                   | NB 1  |
| Volume Total                      | 933  | 467  | 10    | 1358 | 1358                   | 53    |
| Volume Left                       | 0    | 0    | 10    | 0    | 0                      | 21    |
| Volume Right                      | 0    | 0    | 0     | 0    | 0                      | 31    |
| cSH                               | 1700 | 1700 | 469   | 1700 | 1700                   | 33    |
| Volume to Capacity                | 0.55 | 0.27 | 0.02  | 0.80 | 0.80                   | 1.59  |
| Queue Length 95th (ft)            | 0    | 0    | 2     | 0    | 0                      | 146   |
| Control Delay (s)                 | 0.0  | 0.0  | 12.8  | 0.0  | 0.0                    | 556.8 |
| Lane LOS                          | B    |      |       | F    |                        |       |
| Approach Delay (s)                | 0.0  |      | 0.0   |      | 556.8                  |       |
| Approach LOS                      |      |      |       | F    |                        |       |
| Intersection Summary              |      |      |       |      |                        |       |
| Average Delay                     |      |      | 7.1   |      |                        |       |
| Intersection Capacity Utilization |      |      | 76.8% |      | ICU Level of Service D |       |
| Analysis Period (min)             |      |      | 15    |      |                        |       |

# HCM Unsignalized Intersection Capacity Analysis

## 47: US 50 #7 & CDOT

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   | ↑    | ↵    | ↑↑↑  | ↵    |      |
| Volume (veh/h)         | 1602 | 55   | 0    | 2667 | 0    | 21   |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 1669 | 57   | 0    | 2778 | 0    | 22   |
| 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 |      |      | 1726 |      | 2595 | 834  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 1726 |      | 2595 | 834  |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 93   |
| cM capacity (veh/h)    |      |      | 349  |      | 19   | 305  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | WB 4 | NB 1 |
|------------------------|------|------|------|------|------|------|------|------|
| Volume Total           | 834  | 834  | 57   | 0    | 926  | 926  | 926  | 22   |
| Volume Left            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 57   | 0    | 0    | 0    | 0    | 22   |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 305  |
| Volume to Capacity     | 0.49 | 0.49 | 0.03 | 0.00 | 0.54 | 0.54 | 0.54 | 0.07 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 6    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 17.7 |
| Lane LOS               |      |      |      |      |      |      |      | C    |
| Approach Delay (s)     | 0.0  |      |      | 0.0  |      |      |      | 17.7 |
| Approach LOS           |      |      |      |      |      |      |      | C    |

| Intersection Summary              |  |  |       |  |                      |  |   |  |
|-----------------------------------|--|--|-------|--|----------------------|--|---|--|
| Average Delay                     |  |  | 0.1   |  |                      |  |   |  |
| Intersection Capacity Utilization |  |  | 61.5% |  | ICU Level of Service |  | B |  |
| Analysis Period (min)             |  |  | 15    |  |                      |  |   |  |

# HCM Unsignalized Intersection Capacity Analysis

49: US 50 #7 & 3247

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |      |      |      |      |      |      |
| Volume (veh/h)         | 13   | 1550 | 0    | 0    | 2675 | 0    | 4    | 0    | 0    | 0    | 0    | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| Hourly flow rate (vph) | 15   | 1824 | 0    | 0    | 3147 | 0    | 5    | 0    | 0    | 0    | 0    | 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 | 3147 |      |      | 1824 |      |      | 3428 | 5001 | 912  | 4089 | 5001 | 1574 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 3147 |      |      | 1824 |      |      | 3428 | 5001 | 912  | 4089 | 5001 | 1574 |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 84   |      |      | 100  |      |      | 0    | 100  | 100  | 100  | 100  | 100  |
| cM capacity (veh/h)    | 93   |      |      | 319  |      |      | 2    | 0    | 271  | 1    | 0    | 96   |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1   | SB 1 |
|------------------------|------|------|------|------|------|------|--------|------|
| Volume Total           | 15   | 1216 | 608  | 0    | 2098 | 1049 | 5      | 0    |
| Volume Left            | 15   | 0    | 0    | 0    | 0    | 0    | 5      | 0    |
| Volume Right           | 0    | 0    | 0    | 0    | 0    | 0    | 0      | 0    |
| cSH                    | 93   | 1700 | 1700 | 1700 | 1700 | 1700 | 2      | 1700 |
| Volume to Capacity     | 0.16 | 0.72 | 0.36 | 0.00 | 1.23 | 0.62 | 2.11   | 0.00 |
| Queue Length 95th (ft) | 14   | 0    | 0    | 0    | 0    | 0    | 37     | 0    |
| Control Delay (s)      | 51.1 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 3128.1 | 0.0  |
| Lane LOS               | F    |      |      |      |      |      | F      | A    |
| Approach Delay (s)     | 0.4  |      |      | 0.0  |      |      | 3128.1 | 0.0  |
| Approach LOS           |      |      |      |      |      |      | F      | A    |

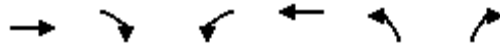
## Intersection Summary

|                                   |  |       |  |                      |  |  |   |  |
|-----------------------------------|--|-------|--|----------------------|--|--|---|--|
| Average Delay                     |  | 3.1   |  |                      |  |  |   |  |
| Intersection Capacity Utilization |  | 83.9% |  | ICU Level of Service |  |  | E |  |
| Analysis Period (min)             |  | 15    |  |                      |  |  |   |  |

# HCM Unsignalized Intersection Capacity Analysis

50: US 50 #7 & 1st St

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |     |
|------------------------|------|------|------|------|------|------|-----|
| Lane Configurations    | ↑↑   | ↑    | ↓    | ↑↑   | ↓    |      |     |
| Volume (veh/h)         | 1550 | 8    | 0    | 2650 | 26   | 30   |     |
| Sign Control           | Free |      |      | Free | Stop |      |     |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |     |
| Peak Hour Factor       | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |     |
| Hourly flow rate (vph) | 1824 | 9    | 0    | 3118 | 31   | 35   |     |
| 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 |      |      | 1833 |      |      | 3382 | 912 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |     |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |     |
| vCu, unblocked vol     |      |      | 1833 |      |      | 3382 | 912 |
| tC, single (s)         |      |      | 4.2  |      |      | 6.9  | 7.0 |
| tC, 2 stage (s)        |      |      |      |      |      |      |     |
| tF (s)                 |      |      | 2.2  |      |      | 3.6  | 3.4 |
| p0 queue free %        |      |      | 100  |      |      | 0    | 87  |
| cM capacity (veh/h)    |      |      | 317  |      |      | 5    | 271 |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 |
|------------------------|------|------|------|------|------|------|------|
| Volume Total           | 912  | 912  | 9    | 0    | 1559 | 1559 | 66   |
| Volume Left            | 0    | 0    | 0    | 0    | 0    | 0    | 31   |
| Volume Right           | 0    | 0    | 9    | 0    | 0    | 0    | 35   |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 11   |
| Volume to Capacity     | 0.54 | 0.54 | 0.01 | 0.00 | 0.92 | 0.92 | 5.83 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 0    | 0    | Err  |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | Err  |
| Lane LOS               |      |      |      |      |      |      | F    |
| Approach Delay (s)     | 0.0  |      |      | 0.0  |      |      | Err  |
| Approach LOS           |      |      |      |      |      |      | F    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 131.3 |                      |   |
| Intersection Capacity Utilization | 83.3% | ICU Level of Service | E |
| Analysis Period (min)             | 15    |                      |   |

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Intersection Sign configuration not allowed in HCM analysis.

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Intersection Sign configuration not allowed in HCM analysis.

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Intersection Sign configuration not allowed in HCM analysis.

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Intersection Sign configuration not allowed in HCM analysis.

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Intersection Sign configuration not allowed in HCM analysis.

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Intersection Sign configuration not allowed in HCM analysis.

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# HCM Signalized Intersection Capacity Analysis

## 4: US 50 #1 & Unawweep Ave

11/5/2008



| Movement               | EBL  | EBT   | EBR   | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT   | SBR   |
|------------------------|------|-------|-------|------|-------|------|------|-------|------|------|-------|-------|
| Lane Configurations    | ↖↗   | ↕     | ↖     | ↖    | ↕     | ↖    |      | ↕     | ↖    |      | ↕     | ↖     |
| Volume (vph)           | 189  | 525   | 6     | 1    | 1244  | 0    | 10   | 1     | 2    | 13   | 3     | 221   |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  |
| Total Lost time (s)    | 4.0  | 6.0   | 6.0   | 4.0  | 6.0   |      |      | 5.0   | 5.0  |      | 5.0   | 4.0   |
| Lane Util. Factor      | 0.97 | 0.95  | 1.00  | 1.00 | 0.95  |      |      | 1.00  | 1.00 |      | 1.00  | 1.00  |
| Frt                    | 1.00 | 1.00  | 0.85  | 1.00 | 1.00  |      |      | 1.00  | 0.85 |      | 1.00  | 0.85  |
| Flt Protected          | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |      |      | 0.95  | 1.00 |      | 0.96  | 1.00  |
| Satd. Flow (prot)      | 3335 | 3438  | 1538  | 1719 | 3438  |      |      | 1727  | 1538 |      | 1739  | 1538  |
| Flt Permitted          | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |      |      | 0.72  | 1.00 |      | 0.75  | 1.00  |
| Satd. Flow (perm)      | 3335 | 3438  | 1538  | 1719 | 3438  |      |      | 1302  | 1538 |      | 1358  | 1538  |
| Peak-hour factor, PHF  | 0.93 | 0.93  | 0.93  | 0.93 | 0.93  | 0.93 | 0.93 | 0.93  | 0.93 | 0.93 | 0.93  | 0.93  |
| Growth Factor (vph)    | 121% | 211%  | 211%  | 213% | 213%  | 121% | 211% | 121%  | 211% | 121% | 121%  | 121%  |
| Adj. Flow (vph)        | 246  | 1191  | 14    | 2    | 2849  | 0    | 23   | 1     | 5    | 17   | 4     | 288   |
| RTOR Reduction (vph)   | 0    | 0     | 2     | 0    | 0     | 0    | 0    | 0     | 5    | 0    | 0     | 0     |
| Lane Group Flow (vph)  | 246  | 1191  | 12    | 2    | 2849  | 0    | 0    | 24    | 0    | 0    | 21    | 288   |
| Turn Type              | Prot |       | Perm  | Prot |       | Perm | Perm |       | Perm | Perm |       | Over  |
| Protected Phases       | 1    | 6     |       | 5    | 2     |      |      | 4     |      |      | 4     | 1     |
| Permitted Phases       |      |       | 6     |      |       | 2    | 4    |       | 4    | 4    |       |       |
| Actuated Green, G (s)  | 21.2 | 117.1 | 117.1 | 0.8  | 96.7  |      |      | 7.1   | 7.1  |      | 7.1   | 21.2  |
| Effective Green, g (s) | 21.2 | 117.1 | 117.1 | 0.8  | 96.7  |      |      | 7.1   | 7.1  |      | 7.1   | 21.2  |
| Actuated g/C Ratio     | 0.15 | 0.84  | 0.84  | 0.01 | 0.69  |      |      | 0.05  | 0.05 |      | 0.05  | 0.15  |
| Clearance Time (s)     | 4.0  | 6.0   | 6.0   | 4.0  | 6.0   |      |      | 5.0   | 5.0  |      | 5.0   | 4.0   |
| Vehicle Extension (s)  | 3.0  | 5.0   | 5.0   | 2.5  | 3.5   |      |      | 3.0   | 3.0  |      | 3.0   | 3.0   |
| Lane Grp Cap (vph)     | 505  | 2876  | 1286  | 10   | 2375  |      |      | 66    | 78   |      | 69    | 233   |
| v/s Ratio Prot         | 0.07 | 0.35  |       | 0.00 | c0.83 |      |      |       |      |      |       | c0.19 |
| v/s Ratio Perm         |      |       | 0.01  |      |       |      |      | c0.02 | 0.00 |      | 0.02  |       |
| v/c Ratio              | 0.49 | 0.41  | 0.01  | 0.20 | 1.20  |      |      | 0.36  | 0.00 |      | 0.30  | 1.24  |
| Uniform Delay, d1      | 54.4 | 2.9   | 1.9   | 69.3 | 21.6  |      |      | 64.3  | 63.1 |      | 64.1  | 59.4  |
| Progression Factor     | 1.00 | 1.00  | 1.00  | 1.04 | 0.30  |      |      | 1.00  | 1.00 |      | 1.00  | 1.00  |
| Incremental Delay, d2  | 0.7  | 0.4   | 0.0   | 0.6  | 90.2  |      |      | 3.4   | 0.0  |      | 2.5   | 137.5 |
| Delay (s)              | 55.2 | 3.3   | 1.9   | 72.5 | 96.8  |      |      | 67.7  | 63.1 |      | 66.6  | 196.9 |
| Level of Service       | E    | A     | A     | E    | F     |      |      | E     | E    |      | E     | F     |
| Approach Delay (s)     |      | 12.1  |       |      | 96.8  |      |      | 66.9  |      |      | 188.0 |       |
| Approach LOS           |      | B     |       |      | F     |      |      | E     |      |      | F     |       |

### Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 76.2   | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 1.16   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 15.0 |
| Intersection Capacity Utilization | 105.6% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 10: US 50 #1 & Palmer St

11/5/2008



| Movement               | EBL   | EBT   | EBR   | WBL   | WBT   | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|-------|-------|-------|------|-------|------|------|------|------|------|
| Lane Configurations    |       |       |       |       |       |      |       |      |      |      |      |      |
| Volume (vph)           | 2     | 512   | 35    | 10    | 1291  | 0    | 50    | 5    | 5    | 0    | 5    | 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   | 6.0   |      | 6.0   | 6.0  |      |      | 6.0  |      |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  |      | 1.00  | 1.00 |      |      | 1.00 |      |
| Frt                    | 1.00  | 1.00  | 0.85  | 1.00  | 1.00  |      | 1.00  | 0.92 |      |      | 1.00 |      |
| Flt Protected          | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |      | 0.95  | 1.00 |      |      | 1.00 |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538  | 1719  | 3438  |      | 1719  | 1674 |      |      | 1810 |      |
| Flt Permitted          | 0.04  | 1.00  | 1.00  | 0.19  | 1.00  |      | 0.38  | 1.00 |      |      | 1.00 |      |
| Satd. Flow (perm)      | 71    | 3438  | 1538  | 352   | 3438  |      | 693   | 1674 |      |      | 1810 |      |
| Peak-hour factor, PHF  | 0.89  | 0.89  | 0.89  | 0.89  | 0.89  | 0.89 | 0.89  | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Growth Factor (vph)    | 213%  | 213%  | 125%  | 125%  | 213%  | 213% | 125%  | 125% | 125% | 213% | 125% | 213% |
| Adj. Flow (vph)        | 5     | 1225  | 49    | 14    | 3090  | 0    | 70    | 7    | 7    | 0    | 7    | 0    |
| RTOR Reduction (vph)   | 0     | 0     | 13    | 0     | 0     | 0    | 0     | 6    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 5     | 1225  | 36    | 14    | 3090  | 0    | 70    | 8    | 0    | 0    | 7    | 0    |
| Turn Type              | pm+pt |       | Perm  | pm+pt |       |      | pm+pt |      |      |      | Perm |      |
| Protected Phases       | 5     | 2     |       | 1     | 6     |      | 3     | 8    |      |      |      | 4    |
| Permitted Phases       | 2     |       | 2     | 6     |       |      | 8     |      |      | 4    |      |      |
| Actuated Green, G (s)  | 102.3 | 101.5 | 101.5 | 106.3 | 103.5 |      | 17.7  | 17.7 |      |      | 6.2  |      |
| Effective Green, g (s) | 102.3 | 101.5 | 101.5 | 106.3 | 103.5 |      | 17.7  | 17.7 |      |      | 6.2  |      |
| Actuated g/C Ratio     | 0.73  | 0.72  | 0.72  | 0.76  | 0.74  |      | 0.13  | 0.13 |      |      | 0.04 |      |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |      | 6.0   | 6.0  |      |      | 6.0  |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |      | 3.0   | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 61    | 2493  | 1115  | 295   | 2542  |      | 128   | 212  |      |      | 80   |      |
| v/s Ratio Prot         | 0.00  | 0.36  |       | c0.00 | c0.90 |      | c0.02 | 0.00 |      |      | 0.00 |      |
| v/s Ratio Perm         | 0.06  |       | 0.02  | 0.04  |       |      | c0.05 |      |      |      |      |      |
| v/c Ratio              | 0.08  | 0.49  | 0.03  | 0.05  | 1.22  |      | 0.55  | 0.04 |      |      | 0.09 |      |
| Uniform Delay, d1      | 69.4  | 8.2   | 5.4   | 8.9   | 18.2  |      | 55.8  | 53.7 |      |      | 64.2 |      |
| Progression Factor     | 1.00  | 0.98  | 0.97  | 0.44  | 0.33  |      | 1.00  | 1.00 |      |      | 1.00 |      |
| Incremental Delay, d2  | 0.6   | 0.7   | 0.1   | 0.0   | 97.4  |      | 4.7   | 0.1  |      |      | 0.5  |      |
| Delay (s)              | 70.0  | 8.7   | 5.3   | 4.0   | 103.3 |      | 60.5  | 53.7 |      |      | 64.7 |      |
| Level of Service       | E     | A     | A     | A     | F     |      | E     | D    |      |      | E    |      |
| Approach Delay (s)     |       | 8.8   |       |       | 102.9 |      |       | 59.4 |      |      | 64.7 |      |
| Approach LOS           |       | A     |       |       | F     |      |       | E    |      |      | E    |      |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 75.1  | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 1.05  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 96.1% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

13: US 50 #1 & 27 Rd

11/5/2008



| Movement               | EBL   | EBT  | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|------------------------|-------|------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations    |       |      |      |       |       |      |       |       |      |       |       |      |
| Volume (vph)           | 36    | 435  | 24   | 27    | 1047  | 22   | 139   | 20    | 15   | 27    | 29    | 32   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 7.0  | 7.0  | 4.0   | 7.0   | 7.0  | 5.0   | 5.5   |      | 5.0   | 5.5   |      |
| Lane Util. Factor      | 1.00  | 0.95 | 1.00 | 1.00  | 0.95  | 1.00 | 1.00  | 1.00  |      | 1.00  | 1.00  |      |
| Frt                    | 1.00  | 1.00 | 0.85 | 1.00  | 1.00  | 0.85 | 1.00  | 0.94  |      | 1.00  | 0.92  |      |
| Flt Protected          | 0.95  | 1.00 | 1.00 | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |      | 0.95  | 1.00  |      |
| Satd. Flow (prot)      | 1719  | 3438 | 1538 | 1719  | 3438  | 1538 | 1719  | 1693  |      | 1719  | 1669  |      |
| Flt Permitted          | 0.05  | 1.00 | 1.00 | 0.22  | 1.00  | 1.00 | 0.28  | 1.00  |      | 0.70  | 1.00  |      |
| Satd. Flow (perm)      | 84    | 3438 | 1538 | 393   | 3438  | 1538 | 499   | 1693  |      | 1263  | 1669  |      |
| Peak-hour factor, PHF  | 0.91  | 0.91 | 0.91 | 0.91  | 0.91  | 0.91 | 0.91  | 0.91  | 0.91 | 0.91  | 0.91  | 0.91 |
| Growth Factor (vph)    | 213%  | 213% | 213% | 236%  | 228%  | 228% | 236%  | 236%  | 236% | 228%  | 236%  | 228% |
| Adj. Flow (vph)        | 84    | 1018 | 56   | 70    | 2623  | 55   | 360   | 52    | 39   | 68    | 75    | 80   |
| RTOR Reduction (vph)   | 0     | 0    | 20   | 0     | 0     | 5    | 0     | 19    | 0    | 0     | 19    | 0    |
| Lane Group Flow (vph)  | 84    | 1018 | 36   | 70    | 2623  | 50   | 360   | 72    | 0    | 68    | 136   | 0    |
| Turn Type              | pm+pt |      | Perm | pm+pt |       | Perm | pm+pt |       |      | pm+pt |       |      |
| Protected Phases       | 1     | 6    |      | 5     | 2     |      | 7     | 4     |      | 3     | 8     |      |
| Permitted Phases       | 6     |      | 6    | 2     |       | 2    | 4     |       |      | 8     |       |      |
| Actuated Green, G (s)  | 91.0  | 88.0 | 88.0 | 87.2  | 87.2  | 87.2 | 31.5  | 20.9  |      | 15.1  | 9.5   |      |
| Effective Green, g (s) | 91.0  | 88.0 | 88.0 | 87.2  | 87.2  | 87.2 | 31.5  | 20.9  |      | 15.1  | 9.5   |      |
| Actuated g/C Ratio     | 0.65  | 0.63 | 0.63 | 0.62  | 0.62  | 0.62 | 0.22  | 0.15  |      | 0.11  | 0.07  |      |
| Clearance Time (s)     | 4.0   | 7.0  | 7.0  | 4.0   | 7.0   | 7.0  | 5.0   | 5.5   |      | 5.0   | 5.5   |      |
| Vehicle Extension (s)  | 2.2   | 2.2  | 2.2  | 2.2   | 2.2   | 2.2  | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Lane Grp Cap (vph)     | 111   | 2161 | 967  | 283   | 2141  | 958  | 260   | 253   |      | 154   | 113   |      |
| v/s Ratio Prot         | c0.03 | 0.30 |      | 0.01  | c0.76 |      | c0.17 | 0.04  |      | 0.02  | 0.08  |      |
| v/s Ratio Perm         | 0.47  |      | 0.02 | 0.15  |       | 0.03 | c0.14 |       |      | 0.03  |       |      |
| v/c Ratio              | 0.76  | 0.47 | 0.04 | 0.25  | 1.23  | 0.05 | 1.38  | 0.29  |      | 0.44  | 1.21  |      |
| Uniform Delay, d1      | 62.4  | 13.7 | 9.9  | 11.9  | 26.4  | 10.3 | 51.3  | 52.9  |      | 58.0  | 65.2  |      |
| Progression Factor     | 0.80  | 0.86 | 0.67 | 0.37  | 0.35  | 0.21 | 1.00  | 1.00  |      | 1.00  | 1.00  |      |
| Incremental Delay, d2  | 21.8  | 0.7  | 0.1  | 0.2   | 104.5 | 0.1  | 195.2 | 0.6   |      | 2.0   | 150.5 |      |
| Delay (s)              | 71.5  | 12.5 | 6.6  | 4.6   | 113.8 | 2.2  | 246.4 | 53.5  |      | 60.0  | 215.7 |      |
| Level of Service       | E     | B    | A    | A     | F     | A    | F     | D     |      | E     | F     |      |
| Approach Delay (s)     |       | 16.5 |      |       | 108.8 |      |       | 207.5 |      |       | 168.3 |      |
| Approach LOS           |       | B    |      |       | F     |      |       | F     |      |       | F     |      |

## Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 98.1   | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.18   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 106.8% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

18: US 50 WB #3 & 27 3/4 Rd

11/5/2008



| Movement                  | EBL  | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|------|------|-------|-------|------|------|-------|------|------|-------|------|
| Lane Configurations       |      |      |      | ↖     | ↗     | ↗    |      | ↖     |      |      | ↖     | ↗    |
| Volume (vph)              | 0    | 0    | 0    | 9     | 727   | 30   | 1    | 27    | 0    | 0    | 28    | 34   |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      |      |      | 4.0   | 6.0   | 6.0  |      | 6.0   |      |      | 6.0   |      |
| Lane Util. Factor         |      |      |      | 1.00  | 0.95  | 1.00 |      | 1.00  |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      |      |      | 1.00  | 1.00  | 0.85 |      | 1.00  |      |      | 0.93  |      |
| Fl <sub>t</sub> Protected |      |      |      | 0.95  | 1.00  | 1.00 |      | 1.00  |      |      | 1.00  |      |
| Satd. Flow (prot)         |      |      |      | 1719  | 3438  | 1538 |      | 1806  |      |      | 1675  |      |
| Fl <sub>t</sub> Permitted |      |      |      | 0.95  | 1.00  | 1.00 |      | 0.59  |      |      | 1.00  |      |
| Satd. Flow (perm)         |      |      |      | 1719  | 3438  | 1538 |      | 1061  |      |      | 1675  |      |
| Peak-hour factor, PHF     | 0.92 | 0.92 | 0.92 | 0.92  | 0.92  | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92  | 0.92 |
| Growth Factor (vph)       | 100% | 100% | 100% | 274%  | 274%  | 274% | 274% | 274%  | 274% | 274% | 274%  | 274% |
| Adj. Flow (vph)           | 0    | 0    | 0    | 27    | 2165  | 89   | 3    | 80    | 0    | 0    | 83    | 101  |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0     | 0     | 32   | 0    | 0     | 0    | 0    | 31    | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 27    | 2165  | 57   | 0    | 83    | 0    | 0    | 153   | 0    |
| Turn Type                 |      |      |      | pm+pt |       | Perm |      | Perm  |      |      |       |      |
| Protected Phases          |      |      |      | 5     | 6     |      |      | 1 8   |      |      | 4     |      |
| Permitted Phases          |      |      |      | 6     |       | 6    |      | 1 8   |      |      |       |      |
| Actuated Green, G (s)     |      |      |      | 90.0  | 82.8  | 82.8 |      | 28.0  |      |      | 15.2  |      |
| Effective Green, g (s)    |      |      |      | 90.0  | 82.8  | 82.8 |      | 28.0  |      |      | 15.2  |      |
| Actuated g/C Ratio        |      |      |      | 0.64  | 0.59  | 0.59 |      | 0.20  |      |      | 0.11  |      |
| Clearance Time (s)        |      |      |      | 4.0   | 6.0   | 6.0  |      |       |      |      | 6.0   |      |
| Vehicle Extension (s)     |      |      |      | 3.0   | 3.0   | 3.0  |      |       |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      |      |      | 1105  | 2033  | 910  |      | 212   |      |      | 182   |      |
| v/s Ratio Prot            |      |      |      | c0.00 | c0.63 |      |      |       |      |      | c0.09 |      |
| v/s Ratio Perm            |      |      |      | 0.01  |       | 0.04 |      | c0.08 |      |      |       |      |
| v/c Ratio                 |      |      |      | 0.02  | 1.06  | 0.06 |      | 0.39  |      |      | 0.84  |      |
| Uniform Delay, d1         |      |      |      | 9.1   | 28.6  | 12.1 |      | 48.6  |      |      | 61.2  |      |
| Progression Factor        |      |      |      | 0.15  | 0.16  | 0.00 |      | 1.25  |      |      | 1.00  |      |
| Incremental Delay, d2     |      |      |      | 0.0   | 30.5  | 0.0  |      | 1.2   |      |      | 27.3  |      |
| Delay (s)                 |      |      |      | 1.3   | 35.1  | 0.0  |      | 62.0  |      |      | 88.5  |      |
| Level of Service          |      |      |      | A     | D     | A    |      | E     |      |      | F     |      |
| Approach Delay (s)        |      | 0.0  |      |       | 33.3  |      |      | 62.0  |      |      | 88.5  |      |
| Approach LOS              |      | A    |      |       | C     |      |      | E     |      |      | F     |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 38.3  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.90  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 22.0 |
| Intersection Capacity Utilization | 74.8% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group



# HCM Signalized Intersection Capacity Analysis

## 19: US 50 EB #2 & 27 3/4 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |       |       |      |      |      |      |      |      |      |      |       |      |
| Volume (vph)           | 21    | 293   | 0    | 0    | 0    | 0    | 0    | 7    | 4    | 24   | 13    | 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      | 1.00  | 0.95  |      |      |      |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    | 1.00  | 1.00  |      |      |      |      |      | 0.95 |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  |      |      |      |      |      | 1.00 |      |      | 0.97  |      |
| Satd. Flow (prot)      | 1719  | 3438  |      |      |      |      |      | 1721 |      |      | 1753  |      |
| Flt Permitted          | 0.95  | 1.00  |      |      |      |      |      | 1.00 |      |      | 0.39  |      |
| Satd. Flow (perm)      | 1719  | 3438  |      |      |      |      |      | 1721 |      |      | 710   |      |
| Peak-hour factor, PHF  | 0.92  | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 |
| Growth Factor (vph)    | 274%  | 274%  | 274% | 100% | 100% | 100% | 274% | 274% | 274% | 274% | 274%  | 274% |
| Adj. Flow (vph)        | 63    | 873   | 0    | 0    | 0    | 0    | 0    | 21   | 12   | 71   | 39    | 0    |
| RTOR Reduction (vph)   | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 11   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 63    | 873   | 0    | 0    | 0    | 0    | 0    | 22   | 0    | 0    | 110   | 0    |
| Turn Type              | pm+pt |       | Perm |      |      |      |      |      |      | Perm |       |      |
| Protected Phases       | 1     | 2     |      |      |      |      |      | 8    |      |      | 4 5   |      |
| Permitted Phases       | 2     |       | 2    |      |      |      |      |      |      | 4 5  |       |      |
| Actuated Green, G (s)  | 95.6  | 82.8  |      |      |      |      |      | 15.2 |      |      | 26.4  |      |
| Effective Green, g (s) | 95.6  | 82.8  |      |      |      |      |      | 15.2 |      |      | 22.4  |      |
| Actuated g/C Ratio     | 0.68  | 0.59  |      |      |      |      |      | 0.11 |      |      | 0.16  |      |
| Clearance Time (s)     | 6.0   | 6.0   |      |      |      |      |      | 6.0  |      |      |       |      |
| Vehicle Extension (s)  | 3.0   | 3.0   |      |      |      |      |      | 3.0  |      |      |       |      |
| Lane Grp Cap (vph)     | 1248  | 2033  |      |      |      |      |      | 187  |      |      | 114   |      |
| v/s Ratio Prot         | c0.00 | c0.25 |      |      |      |      |      | 0.01 |      |      |       |      |
| v/s Ratio Perm         | 0.03  |       |      |      |      |      |      |      |      |      | c0.15 |      |
| v/c Ratio              | 0.05  | 0.43  |      |      |      |      |      | 0.12 |      |      | 0.96  |      |
| Uniform Delay, d1      | 7.3   | 15.7  |      |      |      |      |      | 56.4 |      |      | 58.4  |      |
| Progression Factor     | 0.47  | 0.62  |      |      |      |      |      | 1.00 |      |      | 0.58  |      |
| Incremental Delay, d2  | 0.0   | 0.6   |      |      |      |      |      | 0.3  |      |      | 63.1  |      |
| Delay (s)              | 3.5   | 10.4  |      |      |      |      |      | 56.6 |      |      | 96.9  |      |
| Level of Service       | A     | B     |      |      |      |      |      | E    |      |      | F     |      |
| Approach Delay (s)     |       | 9.9   |      |      | 0.0  |      |      | 56.6 |      |      | 96.9  |      |
| Approach LOS           |       | A     |      |      | A    |      |      | E    |      |      | F     |      |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.2  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.48  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 44.4% | ICU Level of Service | A    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

23: US 50 WB #3 & 28 1/2 Rd

11/5/2008



| Movement                  | EBL  | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      |      |      | ↙     | ↕     | ↗    |      | ↖     |      |      | ↕    | ↘    |
| Volume (vph)              | 0    | 0    | 0    | 8     | 677   | 7    | 49   | 56    | 0    | 0    | 18   | 42   |
| 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  |      |
| Lane Util. Factor         |      |      |      | 1.00  | 0.95  | 1.00 |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      |      |      | 1.00  | 1.00  | 0.85 |      | 1.00  |      |      | 0.91 |      |
| Fl <sub>t</sub> Protected |      |      |      | 0.95  | 1.00  | 1.00 |      | 0.98  |      |      | 1.00 |      |
| Satd. Flow (prot)         |      |      |      | 1719  | 3438  | 1538 |      | 1768  |      |      | 1639 |      |
| Fl <sub>t</sub> Permitted |      |      |      | 0.95  | 1.00  | 1.00 |      | 0.35  |      |      | 1.00 |      |
| Satd. Flow (perm)         |      |      |      | 1719  | 3438  | 1538 |      | 638   |      |      | 1639 |      |
| Peak-hour factor, PHF     | 0.88 | 0.88 | 0.88 | 0.88  | 0.88  | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88 | 0.88 |
| Growth Factor (vph)       | 100% | 100% | 100% | 131%  | 300%  | 131% | 131% | 131%  | 131% | 131% | 131% | 131% |
| Adj. Flow (vph)           | 0    | 0    | 0    | 12    | 2308  | 10   | 73   | 83    | 0    | 0    | 27   | 63   |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0     | 0     | 3    | 0    | 0     | 0    | 0    | 56   | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 12    | 2308  | 7    | 0    | 156   | 0    | 0    | 34   | 0    |
| Turn Type                 |      |      |      | pm+pt |       | Perm |      | Perm  |      |      |      |      |
| Protected Phases          |      |      |      | 5     | 6     |      |      | 1 8   |      |      | 4    |      |
| Permitted Phases          |      |      |      | 6     |       | 6    |      | 1 8   |      |      |      |      |
| Actuated Green, G (s)     |      |      |      | 82.0  | 78.8  | 78.8 |      | 40.0  |      |      | 16.0 |      |
| Effective Green, g (s)    |      |      |      | 82.0  | 78.8  | 78.8 |      | 40.0  |      |      | 16.0 |      |
| Actuated g/C Ratio        |      |      |      | 0.59  | 0.56  | 0.56 |      | 0.29  |      |      | 0.11 |      |
| Clearance Time (s)        |      |      |      | 6.0   | 6.0   | 6.0  |      |       |      |      | 6.0  |      |
| Vehicle Extension (s)     |      |      |      | 3.0   | 3.0   | 3.0  |      |       |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      |      |      | 1081  | 1935  | 866  |      | 182   |      |      | 187  |      |
| v/s Ratio Prot            |      |      |      | c0.00 | c0.67 |      |      |       |      |      | 0.02 |      |
| v/s Ratio Perm            |      |      |      | 0.01  |       | 0.00 |      | c0.24 |      |      |      |      |
| v/c Ratio                 |      |      |      | 0.01  | 1.19  | 0.01 |      | 0.86  |      |      | 0.18 |      |
| Uniform Delay, d1         |      |      |      | 12.1  | 30.6  | 13.4 |      | 47.3  |      |      | 56.1 |      |
| Progression Factor        |      |      |      | 1.13  | 1.04  | 1.20 |      | 1.14  |      |      | 1.00 |      |
| Incremental Delay, d2     |      |      |      | 0.0   | 91.9  | 0.0  |      | 28.9  |      |      | 0.5  |      |
| Delay (s)                 |      |      |      | 13.7  | 123.8 | 16.1 |      | 83.0  |      |      | 56.6 |      |
| Level of Service          |      |      |      | B     | F     | B    |      | F     |      |      | E    |      |
| Approach Delay (s)        |      | 0.0  |      |       | 122.8 |      |      | 83.0  |      |      | 56.6 |      |
| Approach LOS              |      | A    |      |       | F     |      |      | F     |      |      | E    |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 118.1 | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.00  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 80.2% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

24: US 50 EB #2 & 28 1/2 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|------|------|------|------|-------|------|------|-------|------|
| Lane Configurations    |       |       |      |      |      |      |      |       |      |      |       |      |
| Volume (vph)           | 36    | 275   | 1    | 0    | 0    | 0    | 0    | 69    | 14   | 8    | 18    | 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   |      |      | 6.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00 |      |      |      |      | 1.00  |      |      | 1.00  |      |
| Frt                    | 1.00  | 1.00  | 0.85 |      |      |      |      | 0.98  |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  | 1.00 |      |      |      |      | 1.00  |      |      | 0.98  |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538 |      |      |      |      | 1768  |      |      | 1782  |      |
| Flt Permitted          | 0.95  | 1.00  | 1.00 |      |      |      |      | 1.00  |      |      | 0.27  |      |
| Satd. Flow (perm)      | 1719  | 3438  | 1538 |      |      |      |      | 1768  |      |      | 497   |      |
| Peak-hour factor, PHF  | 0.88  | 0.88  | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88  | 0.88 |
| Growth Factor (vph)    | 131%  | 274%  | 131% | 100% | 100% | 100% | 131% | 131%  | 131% | 131% | 131%  | 131% |
| Adj. Flow (vph)        | 54    | 856   | 1    | 0    | 0    | 0    | 0    | 103   | 21   | 12   | 27    | 0    |
| RTOR Reduction (vph)   | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 5     | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 54    | 856   | 1    | 0    | 0    | 0    | 0    | 119   | 0    | 0    | 39    | 0    |
| Turn Type              | pm+pt |       | Perm |      |      |      |      |       |      | Perm |       |      |
| Protected Phases       | 1     | 2     |      |      |      |      |      | 8     |      |      | 4 5   |      |
| Permitted Phases       | 2     |       | 2    |      |      |      |      |       |      | 4 5  |       |      |
| Actuated Green, G (s)  | 96.8  | 78.8  | 78.8 |      |      |      |      | 16.0  |      |      | 19.2  |      |
| Effective Green, g (s) | 96.8  | 78.8  | 78.8 |      |      |      |      | 16.0  |      |      | 19.2  |      |
| Actuated g/C Ratio     | 0.69  | 0.56  | 0.56 |      |      |      |      | 0.11  |      |      | 0.14  |      |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0  |      |      |      |      | 6.0   |      |      | 6.0   |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0  |      |      |      |      | 3.0   |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 1189  | 1935  | 866  |      |      |      |      | 202   |      |      | 68    |      |
| v/s Ratio Prot         | c0.01 | c0.25 |      |      |      |      |      | c0.07 |      |      |       |      |
| v/s Ratio Perm         | 0.03  |       | 0.00 |      |      |      |      |       |      |      | c0.08 |      |
| v/c Ratio              | 0.05  | 0.44  | 0.00 |      |      |      |      | 0.59  |      |      | 0.57  |      |
| Uniform Delay, d1      | 6.9   | 17.8  | 13.4 |      |      |      |      | 58.9  |      |      | 56.6  |      |
| Progression Factor     | 1.70  | 1.00  | 0.72 |      |      |      |      | 1.00  |      |      | 0.83  |      |
| Incremental Delay, d2  | 0.0   | 0.7   | 0.0  |      |      |      |      | 4.3   |      |      | 10.9  |      |
| Delay (s)              | 11.7  | 18.4  | 9.6  |      |      |      |      | 63.2  |      |      | 58.1  |      |
| Level of Service       | B     | B     | A    |      |      |      |      | E     |      |      | E     |      |
| Approach Delay (s)     |       | 18.0  |      |      | 0.0  |      |      | 63.2  |      |      | 58.1  |      |
| Approach LOS           |       | B     |      |      | A    |      |      | E     |      |      | E     |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 24.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.40  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 39.3% | ICU Level of Service | A    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 33: US 50 WB #3 & 29 Rd

11/5/2008



| Movement               | WBT    | WBR   | SBT   | SBR2  | NEL   |
|------------------------|--------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑     | ↑     | ↑↑    | ↑     | ↑↑    |
| Volume (vph)           | 2270   | 348   | 261   | 466   | 374   |
| Ideal Flow (vphpl)     | 1900   | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 9.0    | 6.5   | 6.5   | 6.5   | 6.0   |
| Lane Util. Factor      | 0.95   | 1.00  | 0.95  | 1.00  | 0.97  |
| Frt                    | 1.00   | 0.85  | 1.00  | 0.85  | 1.00  |
| Flt Protected          | 1.00   | 1.00  | 1.00  | 1.00  | 0.95  |
| Satd. Flow (prot)      | 3438   | 1538  | 3438  | 1538  | 3335  |
| Flt Permitted          | 1.00   | 1.00  | 1.00  | 1.00  | 0.95  |
| Satd. Flow (perm)      | 3438   | 1538  | 3438  | 1538  | 3335  |
| Peak-hour factor, PHF  | 0.91   | 0.91  | 0.91  | 0.91  | 0.92  |
| Adj. Flow (vph)        | 2495   | 382   | 287   | 512   | 407   |
| RTOR Reduction (vph)   | 0      | 2     | 0     | 122   | 0     |
| Lane Group Flow (vph)  | 2495   | 380   | 287   | 390   | 407   |
| Turn Type              | custom |       | Perm  |       |       |
| Protected Phases       | 6      | 4 6   | 4     |       | 5     |
| Permitted Phases       |        | 6     |       | 4     |       |
| Actuated Green, G (s)  | 76.0   | 109.0 | 26.5  | 26.5  | 16.0  |
| Effective Green, g (s) | 76.0   | 109.0 | 26.5  | 26.5  | 16.0  |
| Actuated g/C Ratio     | 0.54   | 0.78  | 0.19  | 0.19  | 0.11  |
| Clearance Time (s)     | 9.0    |       | 6.5   | 6.5   | 6.0   |
| Vehicle Extension (s)  | 4.0    |       | 6.0   | 6.0   | 2.0   |
| Lane Grp Cap (vph)     | 1866   | 1197  | 651   | 291   | 381   |
| v/s Ratio Prot         | c0.73  | 0.25  | 0.08  |       | c0.12 |
| v/s Ratio Perm         |        |       |       | c0.25 |       |
| v/c Ratio              | 1.34   | 0.32  | 0.44  | 1.34  | 1.07  |
| Uniform Delay, d1      | 32.0   | 4.6   | 50.2  | 56.8  | 62.0  |
| Progression Factor     | 0.68   | 1.11  | 1.00  | 1.00  | 0.69  |
| Incremental Delay, d2  | 152.0  | 0.0   | 1.3   | 173.9 | 64.7  |
| Delay (s)              | 173.9  | 5.1   | 51.5  | 230.6 | 107.3 |
| Level of Service       | F      | A     | D     | F     | F     |
| Approach Delay (s)     | 151.5  |       | 166.3 |       | 107.3 |
| Approach LOS           | F      |       | F     |       | F     |

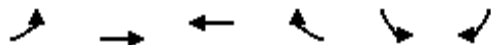
### Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 150.0  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.30   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 21.5 |
| Intersection Capacity Utilization | 104.5% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 34: US 50 EB #2 & 29 Rd

11/5/2008



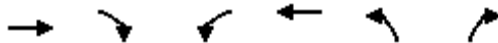
| Movement                          | EBL  | EBT   | WBT  | WBR  | SBL   | SBR  |
|-----------------------------------|------|-------|------|------|-------|------|
| Lane Configurations               |      | ↑↑    |      |      | ↑↑    |      |
| Volume (vph)                      | 0    | 755   | 0    | 0    | 261   | 0    |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      | 6.0   |      |      | 6.5   |      |
| Lane Util. Factor                 |      | 0.95  |      |      | 0.97  |      |
| Fr <sub>t</sub>                   |      | 1.00  |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      | 0.95  |      |
| Satd. Flow (prot)                 |      | 3438  |      |      | 3335  |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      | 0.95  |      |
| Satd. Flow (perm)                 |      | 3438  |      |      | 3335  |      |
| Peak-hour factor, PHF             | 0.91 | 0.91  | 0.91 | 0.91 | 0.91  | 0.91 |
| Adj. Flow (vph)                   | 0    | 830   | 0    | 0    | 287   | 0    |
| RTOR Reduction (vph)              | 0    | 0     | 0    | 0    | 233   | 0    |
| Lane Group Flow (vph)             | 0    | 830   | 0    | 0    | 54    | 0    |
| Turn Type                         |      |       |      |      |       |      |
| Protected Phases                  |      | 2     |      |      | 4     |      |
| Permitted Phases                  |      |       |      |      |       |      |
| Actuated Green, G (s)             |      | 101.0 |      |      | 26.5  |      |
| Effective Green, g (s)            |      | 101.0 |      |      | 26.5  |      |
| Actuated g/C Ratio                |      | 0.72  |      |      | 0.19  |      |
| Clearance Time (s)                |      | 6.0   |      |      | 6.5   |      |
| Vehicle Extension (s)             |      | 3.0   |      |      | 6.0   |      |
| Lane Grp Cap (vph)                |      | 2480  |      |      | 631   |      |
| v/s Ratio Prot                    |      | c0.24 |      |      | c0.02 |      |
| v/s Ratio Perm                    |      |       |      |      |       |      |
| v/c Ratio                         |      | 0.33  |      |      | 0.09  |      |
| Uniform Delay, d <sub>1</sub>     |      | 7.2   |      |      | 46.8  |      |
| Progression Factor                |      | 0.32  |      |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> |      | 0.4   |      |      | 0.2   |      |
| Delay (s)                         |      | 2.6   |      |      | 46.9  |      |
| Level of Service                  |      | A     |      |      | D     |      |
| Approach Delay (s)                |      | 2.6   | 0.0  |      | 46.9  |      |
| Approach LOS                      |      | A     | A    |      | D     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 14.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.28  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.5 |
| Intersection Capacity Utilization | 38.7% | ICU Level of Service | A    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 35: US 50 WB #3 & Sundance Dr

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT   | NBL   | NBR  |
|------------------------|------|------|------|-------|-------|------|
| Lane Configurations    |      |      |      | ↑↑    | ↑↑    |      |
| Volume (vph)           | 0    | 0    | 0    | 3018  | 159   | 0    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    |      |      |      | 6.0   | 7.0   |      |
| Lane Util. Factor      |      |      |      | 0.95  | 0.97  |      |
| Flt                    |      |      |      | 1.00  | 1.00  |      |
| Flt Protected          |      |      |      | 1.00  | 0.95  |      |
| Satd. Flow (prot)      |      |      |      | 3438  | 3335  |      |
| Flt Permitted          |      |      |      | 1.00  | 0.95  |      |
| Satd. Flow (perm)      |      |      |      | 3438  | 3335  |      |
| Peak-hour factor, PHF  | 0.90 | 0.90 | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 3353  | 177   | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0     | 1     | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 3353  | 176   | 0    |
| Turn Type              |      |      |      |       |       |      |
| Protected Phases       |      |      |      | 6     | 5 8   |      |
| Permitted Phases       |      |      |      |       |       |      |
| Actuated Green, G (s)  |      |      |      | 96.2  | 30.8  |      |
| Effective Green, g (s) |      |      |      | 96.2  | 24.8  |      |
| Actuated g/C Ratio     |      |      |      | 0.69  | 0.18  |      |
| Clearance Time (s)     |      |      |      | 6.0   |       |      |
| Vehicle Extension (s)  |      |      |      | 3.0   |       |      |
| Lane Grp Cap (vph)     |      |      |      | 2362  | 591   |      |
| v/s Ratio Prot         |      |      |      | c0.98 | c0.05 |      |
| v/s Ratio Perm         |      |      |      |       |       |      |
| v/c Ratio              |      |      |      | 1.42  | 0.30  |      |
| Uniform Delay, d1      |      |      |      | 21.9  | 50.0  |      |
| Progression Factor     |      |      |      | 1.07  | 0.08  |      |
| Incremental Delay, d2  |      |      |      | 189.0 | 0.3   |      |
| Delay (s)              |      |      |      | 212.6 | 4.1   |      |
| Level of Service       |      |      |      | F     | A     |      |
| Approach Delay (s)     | 0.0  |      |      | 212.6 | 4.1   |      |
| Approach LOS           | A    |      |      | F     | A     |      |

















### Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 202.1  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.20   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 104.3% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 36: Sundance Dr &

11/5/2008

|                                   |  |  |  |  |  |  |  |                                                                                         |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                        | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |                                                                                    | <br> |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume (vph)                      | 9                                                                                 | 0                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 150                                                                                                                                                                        | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                       | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 7.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   |                                                                                    | 6.0                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                    | 0.95                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Fr <sub>t</sub>                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                    | 1.00                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Fl <sub>t</sub> Protected         | 0.95                                                                              |                                                                                   |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                    | 1.00                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Satd. Flow (prot)                 | 1719                                                                              |                                                                                   |                                                                                   | 1719                                                                              |                                                                                   |                                                                                   |                                                                                    | 3438                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Fl <sub>t</sub> Permitted         | 0.95                                                                              |                                                                                   |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                    | 1.00                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Satd. Flow (perm)                 | 1719                                                                              |                                                                                   |                                                                                   | 1719                                                                              |                                                                                   |                                                                                   |                                                                                    | 3438                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                       | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 10                                                                                | 0                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 163                                                                                                                                                                        | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| RTOR Reduction (vph)              | 9                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 1                                                                                 | 0                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 163                                                                                                                                                                        | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Turn Type                         | Prot                                                                              |                                                                                   |                                                                                   | Prot                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Protected Phases                  | 5                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |                                                                                    | 8                                                                                                                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 12.0                                                                              |                                                                                   |                                                                                   | 1.7                                                                               |                                                                                   |                                                                                   |                                                                                    | 12.8                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Effective Green, g (s)            | 12.0                                                                              |                                                                                   |                                                                                   | 1.7                                                                               |                                                                                   |                                                                                   |                                                                                    | 12.8                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated g/C Ratio                | 0.09                                                                              |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   |                                                                                    | 0.09                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Clearance Time (s)                | 7.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   |                                                                                    | 6.0                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)             | 3.0                                                                               |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                    | 3.0                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap (vph)                | 147                                                                               |                                                                                   |                                                                                   | 21                                                                                |                                                                                   |                                                                                   |                                                                                    | 314                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Prot                    | c0.00                                                                             |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                   |                                                                                   |                                                                                    | c0.05                                                                                                                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.01                                                                              |                                                                                   |                                                                                   | 0.24                                                                              |                                                                                   |                                                                                   |                                                                                    | 0.52                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay, d <sub>1</sub>     | 58.5                                                                              |                                                                                   |                                                                                   | 68.5                                                                              |                                                                                   |                                                                                   |                                                                                    | 60.7                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Progression Factor                | 1.00                                                                              |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                   |                                                                                    | 0.02                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incremental Delay, d <sub>2</sub> | 0.0                                                                               |                                                                                   |                                                                                   | 0.5                                                                               |                                                                                   |                                                                                   |                                                                                    | 1.3                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Delay (s)                         | 58.6                                                                              |                                                                                   |                                                                                   | 60.9                                                                              |                                                                                   |                                                                                   |                                                                                    | 2.6                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Level of Service                  | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                    | A                                                                                                                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                |                                                                                   | 58.6                                                                              |                                                                                   |                                                                                   | 60.9                                                                              |                                                                                   |                                                                                    | 2.6                                                                                                                                                                        |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | A                                                                                                                                                                          |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Average Control Delay         |                                                                                   |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   |                                                                                   | HCM Level of Service                                                               |                                                                                                                                                                            | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM Volume to Capacity ratio      |                                                                                   |                                                                                   | 0.27                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                               |                                                                                                                                                                            | 114.2                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 17.5%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                               |                                                                                                                                                                            | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c                                 | Critical Lane Group                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Signalized Intersection Capacity Analysis

## 37: US 50 EB #2 & Sundance Dr

11/5/2008



| Movement               | EBL  | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT   | SBR  |
|------------------------|------|-------|-------|------|------|------|------|-------|------|-------|-------|------|
| Lane Configurations    |      | ↑↑    | ↗     |      |      |      |      | ↑↑    | ↗    |       | ↖     |      |
| Volume (vph)           | 0    | 1308  | 36    | 0    | 0    | 0    | 0    | 150   | 9    | 0     | 5     | 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  |       | 6.0   |      |
| Lane Util. Factor      |      | 0.95  | 1.00  |      |      |      |      | 0.95  | 1.00 |       | 1.00  |      |
| Frt                    |      | 1.00  | 0.85  |      |      |      |      | 1.00  | 0.85 |       | 1.00  |      |
| Flt Protected          |      | 1.00  | 1.00  |      |      |      |      | 1.00  | 1.00 |       | 1.00  |      |
| Satd. Flow (prot)      |      | 3438  | 1538  |      |      |      |      | 3438  | 1538 |       | 1810  |      |
| Flt Permitted          |      | 1.00  | 1.00  |      |      |      |      | 1.00  | 1.00 |       | 1.00  |      |
| Satd. Flow (perm)      |      | 3438  | 1538  |      |      |      |      | 3438  | 1538 |       | 1810  |      |
| Peak-hour factor, PHF  | 0.90 | 0.90  | 0.90  | 0.90 | 0.90 | 0.90 | 0.90 | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 0    | 1453  | 40    | 0    | 0    | 0    | 0    | 167   | 10   | 0     | 6     | 0    |
| RTOR Reduction (vph)   | 0    | 0     | 9     | 0    | 0    | 0    | 0    | 0     | 9    | 0     | 0     | 0    |
| Lane Group Flow (vph)  | 0    | 1453  | 31    | 0    | 0    | 0    | 0    | 167   | 1    | 0     | 6     | 0    |
| Turn Type              |      | Perm  |       |      |      |      |      | Perm  |      | Split |       |      |
| Protected Phases       |      | 2     |       |      |      |      |      | 8     |      | 1     | 1     |      |
| Permitted Phases       |      |       | 2     |      |      |      |      |       | 8    |       |       |      |
| Actuated Green, G (s)  |      | 107.5 | 107.5 |      |      |      |      | 12.8  | 12.8 |       | 1.7   |      |
| Effective Green, g (s) |      | 107.5 | 107.5 |      |      |      |      | 12.8  | 12.8 |       | 1.7   |      |
| Actuated g/C Ratio     |      | 0.77  | 0.77  |      |      |      |      | 0.09  | 0.09 |       | 0.01  |      |
| Clearance Time (s)     |      | 6.0   | 6.0   |      |      |      |      | 6.0   | 6.0  |       | 6.0   |      |
| Vehicle Extension (s)  |      | 3.0   | 3.0   |      |      |      |      | 3.0   | 3.0  |       | 3.0   |      |
| Lane Grp Cap (vph)     |      | 2640  | 1181  |      |      |      |      | 314   | 141  |       | 22    |      |
| v/s Ratio Prot         |      | c0.42 |       |      |      |      |      | c0.05 |      |       | c0.00 |      |
| v/s Ratio Perm         |      |       | 0.02  |      |      |      |      | 0.00  |      |       |       |      |
| v/c Ratio              |      | 0.55  | 0.03  |      |      |      |      | 0.53  | 0.01 |       | 0.27  |      |
| Uniform Delay, d1      |      | 6.5   | 3.8   |      |      |      |      | 60.7  | 57.8 |       | 68.5  |      |
| Progression Factor     |      | 0.74  | 0.38  |      |      |      |      | 1.00  | 1.00 |       | 0.19  |      |
| Incremental Delay, d2  |      | 0.8   | 0.0   |      |      |      |      | 1.7   | 0.0  |       | 6.6   |      |
| Delay (s)              |      | 5.7   | 1.5   |      |      |      |      | 62.5  | 57.8 |       | 19.9  |      |
| Level of Service       |      | A     | A     |      |      |      |      | E     | E    |       | B     |      |
| Approach Delay (s)     |      | 5.6   |       |      | 0.0  |      |      | 62.2  |      |       | 19.9  |      |
| Approach LOS           |      | A     |       |      | A    |      |      | E     |      |       | B     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 11.6  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.54  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 60.3% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



# HCM Signalized Intersection Capacity Analysis

41: US 50 #4 & 29 1/2 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations    | ↖     | ↗↗    | ↖    | ↖     | ↗↗    | ↖    | ↖     | ↗     |      | ↖     | ↗     |      |
| Volume (vph)           | 32    | 1318  | 9    | 0     | 2462  | 9    | 160   | 5     | 14   | 27    | 0     | 296  |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 6.0   | 6.0  |       | 6.0   | 6.0  | 4.0   | 6.0   |      | 4.0   | 6.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00 |       | 0.95  | 1.00 | 1.00  | 1.00  |      | 1.00  | 1.00  |      |
| Frt                    | 1.00  | 1.00  | 0.85 |       | 1.00  | 0.85 | 1.00  | 0.89  |      | 1.00  | 0.85  |      |
| Flt Protected          | 0.95  | 1.00  | 1.00 |       | 1.00  | 1.00 | 0.95  | 1.00  |      | 0.95  | 1.00  |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538 |       | 3438  | 1538 | 1719  | 1612  |      | 1719  | 1538  |      |
| Flt Permitted          | 0.04  | 1.00  | 1.00 |       | 1.00  | 1.00 | 0.14  | 1.00  |      | 0.74  | 1.00  |      |
| Satd. Flow (perm)      | 81    | 3438  | 1538 |       | 3438  | 1538 | 248   | 1612  |      | 1344  | 1538  |      |
| Peak-hour factor, PHF  | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 36    | 1464  | 10   | 0     | 2736  | 10   | 178   | 6     | 16   | 30    | 0     | 329  |
| RTOR Reduction (vph)   | 0     | 0     | 2    | 0     | 0     | 4    | 0     | 13    | 0    | 0     | 41    | 0    |
| Lane Group Flow (vph)  | 36    | 1464  | 8    | 0     | 2736  | 6    | 178   | 9     | 0    | 30    | 288   | 0    |
| Turn Type              | pm+pt |       | Perm | pm+pt |       | Perm | pm+pt |       |      | pm+pt |       |      |
| Protected Phases       | 5     | 2     |      | 1     | 6     |      | 3     | 8     |      | 7     | 4     |      |
| Permitted Phases       | 2     |       | 2    | 6     |       | 6    | 8     |       |      | 4     |       |      |
| Actuated Green, G (s)  | 92.4  | 92.4  | 92.4 |       | 85.2  | 85.2 | 35.2  | 29.2  |      | 28.0  | 25.6  |      |
| Effective Green, g (s) | 92.4  | 92.4  | 92.4 |       | 85.2  | 85.2 | 35.2  | 29.2  |      | 28.0  | 25.6  |      |
| Actuated g/C Ratio     | 0.66  | 0.66  | 0.66 |       | 0.61  | 0.61 | 0.25  | 0.21  |      | 0.20  | 0.18  |      |
| Clearance Time (s)     | 4.0   | 6.0   | 6.0  |       | 6.0   | 6.0  | 4.0   | 6.0   |      | 4.0   | 6.0   |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0  |       | 3.0   | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Lane Grp Cap (vph)     | 91    | 2269  | 1015 |       | 2092  | 936  | 125   | 336   |      | 275   | 281   |      |
| v/s Ratio Prot         | 0.01  | c0.43 |      |       | c0.80 |      | c0.06 | 0.01  |      | 0.00  | 0.19  |      |
| v/s Ratio Perm         | 0.25  |       | 0.00 |       |       | 0.00 | c0.30 |       |      | 0.02  |       |      |
| v/c Ratio              | 0.40  | 0.65  | 0.01 |       | 1.31  | 0.01 | 1.42  | 0.03  |      | 0.11  | 1.03  |      |
| Uniform Delay, d1      | 68.3  | 14.1  | 8.1  |       | 27.4  | 10.8 | 49.8  | 44.1  |      | 45.6  | 57.2  |      |
| Progression Factor     | 1.95  | 0.82  | 1.06 |       | 1.56  | 1.58 | 1.00  | 1.00  |      | 1.00  | 1.00  |      |
| Incremental Delay, d2  | 2.5   | 1.3   | 0.0  |       | 139.8 | 0.0  | 230.8 | 0.0   |      | 0.2   | 60.4  |      |
| Delay (s)              | 135.7 | 12.8  | 8.6  |       | 182.5 | 17.1 | 280.6 | 44.1  |      | 45.8  | 117.6 |      |
| Level of Service       | F     | B     | A    |       | F     | B    | F     | D     |      | D     | F     |      |
| Approach Delay (s)     |       | 15.7  |      |       | 181.9 |      |       | 254.6 |      |       | 111.6 |      |
| Approach LOS           |       | B     |      |       | F     |      |       | F     |      |       | F     |      |

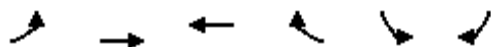
## Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 127.6  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.36   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 108.6% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

# HCM Signalized Intersection Capacity Analysis

43: US 50 #4 & 30 Rd

11/5/2008



| Movement               | EBL   | EBT   | WBT   | WBR   | SBL  | SBR   |
|------------------------|-------|-------|-------|-------|------|-------|
| Lane Configurations    |       |       |       |       |      |       |
| Volume (vph)           | 61    | 1254  | 2300  | 114   | 61   | 114   |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900  | 1900 | 1900  |
| Total Lost time (s)    | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0   |
| Lane Util. Factor      | 1.00  | 0.95  | 0.95  | 1.00  | 1.00 | 1.00  |
| Frt                    | 1.00  | 1.00  | 1.00  | 0.85  | 1.00 | 0.85  |
| Flt Protected          | 0.95  | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  |
| Satd. Flow (prot)      | 1719  | 3438  | 3438  | 1538  | 1719 | 1538  |
| Flt Permitted          | 0.04  | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  |
| Satd. Flow (perm)      | 66    | 3438  | 3438  | 1538  | 1719 | 1538  |
| Peak-hour factor, PHF  | 0.89  | 0.89  | 0.89  | 0.89  | 0.89 | 0.89  |
| Adj. Flow (vph)        | 69    | 1409  | 2584  | 128   | 69   | 128   |
| RTOR Reduction (vph)   | 0     | 0     | 0     | 33    | 0    | 45    |
| Lane Group Flow (vph)  | 69    | 1409  | 2584  | 95    | 69   | 83    |
| Turn Type              | pm+pt |       |       | Perm  |      | Perm  |
| Protected Phases       | 5     | 2     | 6     |       | 4    |       |
| Permitted Phases       | 2     |       |       | 6     |      | 4     |
| Actuated Green, G (s)  | 115.8 | 115.8 | 104.1 | 104.1 | 12.2 | 12.2  |
| Effective Green, g (s) | 115.8 | 115.8 | 104.1 | 104.1 | 12.2 | 12.2  |
| Actuated g/C Ratio     | 0.83  | 0.83  | 0.74  | 0.74  | 0.09 | 0.09  |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0   |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   |
| Lane Grp Cap (vph)     | 122   | 2844  | 2556  | 1144  | 150  | 134   |
| v/s Ratio Prot         | 0.02  | c0.41 | c0.75 |       | 0.04 |       |
| v/s Ratio Perm         | 0.45  |       |       | 0.06  |      | c0.05 |
| v/c Ratio              | 0.57  | 0.50  | 1.01  | 0.08  | 0.46 | 0.62  |
| Uniform Delay, d1      | 67.1  | 3.5   | 18.0  | 4.9   | 60.8 | 61.7  |
| Progression Factor     | 2.10  | 0.12  | 0.03  | 0.00  | 1.00 | 1.00  |
| Incremental Delay, d2  | 4.9   | 0.5   | 8.4   | 0.0   | 2.2  | 8.6   |
| Delay (s)              | 146.0 | 0.9   | 9.0   | 0.0   | 63.0 | 70.3  |
| Level of Service       | F     | A     | A     | A     | E    | E     |
| Approach Delay (s)     |       | 7.7   | 8.6   |       | 67.8 |       |
| Approach LOS           |       | A     | A     |       | E    |       |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 10.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.96  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 80.6% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

45: US 50 #4 & 31 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|-------|-------|-------|-------|-------|------|------|------|-------|------|------|
| Lane Configurations    | ↖     | ↗↗    | ↖     | ↖     | ↗↗    | ↖     |      | ↖    | ↖    | ↖     | ↗    | ↗    |
| Volume (vph)           | 33    | 1223  | 5     | 23    | 2408  | 112   | 9    | 0    | 65   | 93    | 0    | 14   |
| 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  | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |      | 1.00 | 1.00 | 1.00  | 1.00 |      |
| Frt                    | 1.00  | 1.00  | 0.85  | 1.00  | 1.00  | 0.85  |      | 1.00 | 0.85 | 1.00  | 0.85 |      |
| Flt Protected          | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  |      | 0.95 | 1.00 | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538  | 1719  | 3438  | 1538  |      | 1719 | 1538 | 1719  | 1538 |      |
| Flt Permitted          | 0.04  | 1.00  | 1.00  | 0.19  | 1.00  | 1.00  |      | 0.75 | 1.00 | 0.75  | 1.00 |      |
| Satd. Flow (perm)      | 71    | 3438  | 1538  | 336   | 3438  | 1538  |      | 1352 | 1538 | 1359  | 1538 |      |
| Peak-hour factor, PHF  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90 | 0.90 | 0.90 | 0.90  | 0.90 | 0.90 |
| Adj. Flow (vph)        | 37    | 1359  | 6     | 26    | 2676  | 124   | 10   | 0    | 72   | 103   | 0    | 16   |
| RTOR Reduction (vph)   | 0     | 0     | 1     | 0     | 0     | 24    | 0    | 0    | 65   | 0     | 14   | 0    |
| Lane Group Flow (vph)  | 37    | 1359  | 5     | 26    | 2676  | 100   | 0    | 10   | 7    | 103   | 2    | 0    |
| Turn Type              | pm+pt |       | Perm  | pm+pt |       | Perm  | Perm |      | Perm | Perm  |      |      |
| Protected Phases       | 5     | 2     |       | 1     | 6     |       |      | 8    |      |       | 4    |      |
| Permitted Phases       | 2     |       | 2     | 6     |       | 6     | 8    |      | 8    | 4     |      |      |
| Actuated Green, G (s)  | 105.4 | 105.4 | 105.4 | 104.2 | 104.2 | 104.2 |      | 14.2 | 14.2 | 14.2  | 14.2 |      |
| Effective Green, g (s) | 105.4 | 105.4 | 105.4 | 104.2 | 104.2 | 104.2 |      | 14.2 | 14.2 | 14.2  | 14.2 |      |
| Actuated g/C Ratio     | 0.75  | 0.75  | 0.75  | 0.74  | 0.74  | 0.74  |      | 0.10 | 0.10 | 0.10  | 0.10 |      |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |      | 6.0  | 6.0  | 6.0   | 6.0  |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |      | 3.0  | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 96    | 2588  | 1158  | 274   | 2559  | 1145  |      | 137  | 156  | 138   | 156  |      |
| v/s Ratio Prot         | 0.01  | c0.40 |       | 0.00  | c0.78 |       |      |      |      |       |      | 0.00 |
| v/s Ratio Perm         | 0.28  |       | 0.00  | 0.07  |       | 0.07  |      | 0.01 | 0.00 | c0.08 |      |      |
| v/c Ratio              | 0.39  | 0.53  | 0.00  | 0.09  | 1.05  | 0.09  |      | 0.07 | 0.05 | 0.75  | 0.01 |      |
| Uniform Delay, d1      | 41.4  | 7.1   | 4.3   | 7.1   | 17.9  | 4.9   |      | 56.9 | 56.8 | 61.1  | 56.6 |      |
| Progression Factor     | 1.61  | 2.41  | 2.29  | 0.29  | 0.32  | 0.00  |      | 1.00 | 1.00 | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 2.3   | 0.7   | 0.0   | 0.0   | 21.9  | 0.0   |      | 0.2  | 0.1  | 19.5  | 0.0  |      |
| Delay (s)              | 68.7  | 17.7  | 9.8   | 2.0   | 27.6  | 0.0   |      | 57.2 | 56.9 | 80.7  | 56.6 |      |
| Level of Service       | E     | B     | A     | A     | C     | A     |      | E    | E    | F     | E    |      |
| Approach Delay (s)     |       | 19.1  |       |       | 26.1  |       |      | 56.9 |      |       | 77.4 |      |
| Approach LOS           |       | B     |       |       | C     |       |      | E    |      |       | E    |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 1.01  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 88.4% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 46: US 50 WB #6 & 141B

11/5/2008



| Movement               | WBT   | WBR  | NBT   | SBL   | SBR    |
|------------------------|-------|------|-------|-------|--------|
| Lane Configurations    | ↑↑    | ↑    | ↑↑    | ↑     | ↑      |
| Volume (vph)           | 2280  | 150  | 73    | 157   | 82     |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900   |
| Total Lost time (s)    | 6.0   | 6.0  | 6.0   | 5.6   | 5.6    |
| Lane Util. Factor      | 0.95  | 1.00 | 0.95  | 1.00  | 1.00   |
| Frt                    | 1.00  | 0.85 | 1.00  | 1.00  | 0.85   |
| Flt Protected          | 1.00  | 1.00 | 1.00  | 0.95  | 1.00   |
| Satd. Flow (prot)      | 3438  | 1538 | 3438  | 1719  | 1538   |
| Flt Permitted          | 1.00  | 1.00 | 1.00  | 0.95  | 1.00   |
| Satd. Flow (perm)      | 3438  | 1538 | 3438  | 1719  | 1538   |
| Peak-hour factor, PHF  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90   |
| Growth Factor (vph)    | 100%  | 251% | 251%  | 251%  | 251%   |
| Adj. Flow (vph)        | 2533  | 418  | 204   | 438   | 229    |
| RTOR Reduction (vph)   | 0     | 89   | 0     | 0     | 67     |
| Lane Group Flow (vph)  | 2533  | 329  | 204   | 438   | 162    |
| Turn Type              |       | Perm |       | Prot  | custom |
| Protected Phases       | 6     |      | 5     | 4     |        |
| Permitted Phases       |       | 6    | 5     |       | 4      |
| Actuated Green, G (s)  | 86.0  | 86.0 | 7.0   | 29.4  | 29.4   |
| Effective Green, g (s) | 86.0  | 86.0 | 7.0   | 29.4  | 29.4   |
| Actuated g/C Ratio     | 0.61  | 0.61 | 0.05  | 0.21  | 0.21   |
| Clearance Time (s)     | 6.0   | 6.0  | 6.0   | 5.6   | 5.6    |
| Vehicle Extension (s)  | 5.0   | 5.0  | 4.0   | 4.0   | 4.0    |
| Lane Grp Cap (vph)     | 2112  | 945  | 172   | 361   | 323    |
| v/s Ratio Prot         | c0.74 |      | c0.06 | c0.25 |        |
| v/s Ratio Perm         |       | 0.21 |       |       | 0.11   |
| v/c Ratio              | 1.20  | 0.35 | 1.19  | 1.21  | 0.50   |
| Uniform Delay, d1      | 27.0  | 13.3 | 66.5  | 55.3  | 48.8   |
| Progression Factor     | 1.00  | 1.00 | 0.74  | 1.00  | 1.00   |
| Incremental Delay, d2  | 94.6  | 1.0  | 123.6 | 118.9 | 1.7    |
| Delay (s)              | 121.6 | 14.3 | 172.7 | 174.2 | 50.5   |
| Level of Service       | F     | B    | F     | F     | D      |
| Approach Delay (s)     | 106.4 |      | 172.7 |       |        |
| Approach LOS           | F     |      | F     |       |        |

### Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 114.3  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.20   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 17.6 |
| Intersection Capacity Utilization | 104.0% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 48: US 50 #7 & Willow Bend Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    | ↖     | ↗↗    | ↖    | ↖     | ↗↗    | ↖    |      | ↕     |      |      | ↕    |      |
| Volume (vph)           | 0     | 1563  | 0    | 5     | 2650  | 0    | 51   | 0     | 4    | 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      |       | 0.95  |      | 1.00  | 0.95  |      |      | 1.00  |      |      |      |      |
| Frt                    |       | 1.00  |      | 1.00  | 1.00  |      |      | 0.99  |      |      |      |      |
| Flt Protected          |       | 1.00  |      | 0.95  | 1.00  |      |      | 0.96  |      |      |      |      |
| Satd. Flow (prot)      |       | 3438  |      | 1719  | 3438  |      |      | 1712  |      |      |      |      |
| Flt Permitted          |       | 1.00  |      | 0.09  | 1.00  |      |      | 0.74  |      |      |      |      |
| Satd. Flow (perm)      |       | 3438  |      | 154   | 3438  |      |      | 1329  |      |      |      |      |
| Peak-hour factor, PHF  | 0.85  | 0.85  | 0.85 | 0.85  | 0.85  | 0.85 | 0.85 | 0.85  | 0.85 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph)        | 0     | 1839  | 0    | 6     | 3118  | 0    | 60   | 0     | 5    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 2     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0     | 1839  | 0    | 6     | 3118  | 0    | 0    | 63    | 0    | 0    | 0    | 0    |
| Turn Type              | pm+pt |       | Perm | pm+pt |       | Perm | Perm |       |      | Perm |      |      |
| Protected Phases       | 5     | 2     |      | 1     | 6     |      |      | 8     |      |      | 4    |      |
| Permitted Phases       | 2     |       | 2    | 6     |       | 6    | 8    |       |      | 4    |      |      |
| Actuated Green, G (s)  |       | 110.1 |      | 116.9 | 116.9 |      |      | 11.5  |      |      |      |      |
| Effective Green, g (s) |       | 110.1 |      | 116.9 | 116.9 |      |      | 11.5  |      |      |      |      |
| Actuated g/C Ratio     |       | 0.78  |      | 0.83  | 0.83  |      |      | 0.08  |      |      |      |      |
| Clearance Time (s)     |       | 6.0   |      | 6.0   | 6.0   |      |      | 6.0   |      |      |      |      |
| Vehicle Extension (s)  |       | 3.0   |      | 3.0   | 3.0   |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |       | 2696  |      | 137   | 2863  |      |      | 109   |      |      |      |      |
| v/s Ratio Prot         |       | 0.53  |      | 0.00  | c0.91 |      |      |       |      |      |      |      |
| v/s Ratio Perm         |       |       |      | 0.04  |       |      |      | c0.05 |      |      |      |      |
| v/c Ratio              |       | 0.68  |      | 0.04  | 1.09  |      |      | 0.58  |      |      |      |      |
| Uniform Delay, d1      |       | 7.0   |      | 6.5   | 11.8  |      |      | 62.1  |      |      |      |      |
| Progression Factor     |       | 1.00  |      | 1.00  | 1.00  |      |      | 1.00  |      |      |      |      |
| Incremental Delay, d2  |       | 0.7   |      | 0.1   | 46.7  |      |      | 7.3   |      |      |      |      |
| Delay (s)              |       | 7.8   |      | 6.7   | 58.4  |      |      | 69.4  |      |      |      |      |
| Level of Service       |       | A     |      | A     | E     |      |      | E     |      |      |      |      |
| Approach Delay (s)     |       | 7.8   |      |       | 58.3  |      |      | 69.4  |      |      | 0.0  |      |
| Approach LOS           |       | A     |      |       | E     |      |      | E     |      |      | A    |      |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 40.0  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 1.04  |                      |      |
| Actuated Cycle Length (s)         | 140.4 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 86.6% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

51: US 50 #7 & 3rd St

11/5/2008



| Movement                          | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR   |
|-----------------------------------|-------|-------|------|-------|-------|------|------|------|------|------|-------|-------|
| Lane Configurations               | ↖↗    | ↖↖    | ↖    | ↖     | ↖↖    | ↖    |      | ↕    |      |      | ↖     | ↖     |
| Volume (vph)                      | 128   | 1453  | 0    | 4     | 2245  | 0    | 0    | 0    | 0    | 21   | 0     | 354   |
| 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   |
| Lane Util. Factor                 | 0.97  | 0.95  |      | 1.00  | 0.95  |      |      |      |      |      | 1.00  | 1.00  |
| Fr <sub>t</sub>                   | 1.00  | 1.00  |      | 1.00  | 1.00  |      |      |      |      |      | 1.00  | 0.85  |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00  |      | 0.95  | 1.00  |      |      |      |      |      | 0.95  | 1.00  |
| Satd. Flow (prot)                 | 3335  | 3438  |      | 1719  | 3438  |      |      |      |      |      | 1719  | 1538  |
| Fl <sub>t</sub> Permitted         | 0.04  | 1.00  |      | 0.12  | 1.00  |      |      |      |      |      | 0.76  | 1.00  |
| Satd. Flow (perm)                 | 136   | 3438  |      | 210   | 3438  |      |      |      |      |      | 1370  | 1538  |
| Peak-hour factor, PHF             | 0.87  | 0.87  | 0.87 | 0.87  | 0.87  | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87  | 0.87  |
| Adj. Flow (vph)                   | 147   | 1670  | 0    | 5     | 2580  | 0    | 0    | 0    | 0    | 24   | 0     | 407   |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 4     |
| Lane Group Flow (vph)             | 147   | 1670  | 0    | 5     | 2580  | 0    | 0    | 0    | 0    | 0    | 24    | 403   |
| Turn Type                         | pm+pt |       | Perm | pm+pt |       | Perm | Perm |      |      | Perm |       | pm+ov |
| Protected Phases                  | 5     | 2     |      | 1     | 6     |      |      | 8    |      |      | 4     | 5     |
| Permitted Phases                  | 2     |       | 2    | 6     |       | 6    | 8    |      |      | 4    |       | 4     |
| Actuated Green, G (s)             | 119.9 | 113.1 |      | 97.9  | 97.1  |      |      |      |      |      | 8.1   | 24.9  |
| Effective Green, g (s)            | 119.9 | 113.1 |      | 97.9  | 97.1  |      |      |      |      |      | 8.1   | 24.9  |
| Actuated g/C Ratio                | 0.86  | 0.81  |      | 0.70  | 0.69  |      |      |      |      |      | 0.06  | 0.18  |
| Clearance Time (s)                | 6.0   | 6.0   |      | 6.0   | 6.0   |      |      |      |      |      | 6.0   | 6.0   |
| Vehicle Extension (s)             | 3.0   | 3.0   |      | 3.0   | 3.0   |      |      |      |      |      | 3.0   | 3.0   |
| Lane Grp Cap (vph)                | 500   | 2777  |      | 155   | 2384  |      |      |      |      |      | 79    | 339   |
| v/s Ratio Prot                    | 0.04  | 0.49  |      | 0.00  | c0.75 |      |      |      |      |      |       | c0.14 |
| v/s Ratio Perm                    | 0.22  |       |      | 0.02  |       |      |      |      |      |      | 0.02  | 0.12  |
| v/c Ratio                         | 0.29  | 0.60  |      | 0.03  | 1.08  |      |      |      |      |      | 0.30  | 1.19  |
| Uniform Delay, d <sub>1</sub>     | 51.7  | 5.0   |      | 7.8   | 21.5  |      |      |      |      |      | 63.2  | 57.6  |
| Progression Factor                | 1.00  | 1.00  |      | 0.55  | 0.57  |      |      |      |      |      | 1.00  | 1.00  |
| Incremental Delay, d <sub>2</sub> | 0.3   | 1.0   |      | 0.0   | 40.2  |      |      |      |      |      | 2.2   | 110.5 |
| Delay (s)                         | 52.0  | 6.0   |      | 4.3   | 52.4  |      |      |      |      |      | 65.4  | 168.1 |
| Level of Service                  | D     | A     |      | A     | D     |      |      |      |      |      | E     | F     |
| Approach Delay (s)                |       | 9.7   |      |       | 52.3  |      |      | 0.0  |      |      | 162.3 |       |
| Approach LOS                      |       | A     |      |       | D     |      |      | A    |      |      | F     |       |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 46.1  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 1.11  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 94.0% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 52: US 50 #7 & SH 141A

11/5/2008



| Movement               | EBT  | EBR  | WBL   | WBT   | NBL   | NBR  |
|------------------------|------|------|-------|-------|-------|------|
| Lane Configurations    | ↑↑   | ↑    | ↵     | ↑↑    | ↵     | ↑    |
| Volume (vph)           | 1218 | 63   | 5     | 2050  | 68    | 3    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 6.0  | 6.0  | 6.0   | 6.0   | 6.0   | 6.0  |
| Lane Util. Factor      | 0.95 | 1.00 | 1.00  | 0.95  | 1.00  | 1.00 |
| Frt                    | 1.00 | 0.85 | 1.00  | 1.00  | 1.00  | 0.85 |
| Flt Protected          | 1.00 | 1.00 | 0.95  | 1.00  | 0.95  | 1.00 |
| Satd. Flow (prot)      | 3438 | 1538 | 1719  | 3438  | 1719  | 1538 |
| Flt Permitted          | 1.00 | 1.00 | 0.13  | 1.00  | 0.95  | 1.00 |
| Satd. Flow (perm)      | 3438 | 1538 | 230   | 3438  | 1719  | 1538 |
| Peak-hour factor, PHF  | 0.83 | 0.83 | 0.83  | 0.83  | 0.83  | 0.83 |
| Growth Factor (vph)    | 100% | 279% | 279%  | 100%  | 279%  | 279% |
| Adj. Flow (vph)        | 1467 | 212  | 17    | 2470  | 229   | 10   |
| RTOR Reduction (vph)   | 0    | 62   | 0     | 0     | 0     | 8    |
| Lane Group Flow (vph)  | 1467 | 150  | 17    | 2470  | 229   | 2    |
| Turn Type              |      | Perm | pm+pt |       |       | Perm |
| Protected Phases       | 2    |      | 1     | 6     | 8     |      |
| Permitted Phases       |      | 2    | 6     |       |       | 8    |
| Actuated Green, G (s)  | 99.3 | 99.3 | 106.9 | 106.9 | 21.1  | 21.1 |
| Effective Green, g (s) | 99.3 | 99.3 | 106.9 | 106.9 | 21.1  | 21.1 |
| Actuated g/C Ratio     | 0.71 | 0.71 | 0.76  | 0.76  | 0.15  | 0.15 |
| Clearance Time (s)     | 6.0  | 6.0  | 6.0   | 6.0   | 6.0   | 6.0  |
| Vehicle Extension (s)  | 3.0  | 3.0  | 3.0   | 3.0   | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 2439 | 1091 | 193   | 2625  | 259   | 232  |
| v/s Ratio Prot         | 0.43 |      | 0.00  | c0.72 | c0.13 |      |
| v/s Ratio Perm         |      | 0.10 | 0.07  |       |       | 0.00 |
| v/c Ratio              | 0.60 | 0.14 | 0.09  | 0.94  | 0.88  | 0.01 |
| Uniform Delay, d1      | 10.3 | 6.6  | 7.5   | 13.9  | 58.3  | 50.6 |
| Progression Factor     | 0.62 | 0.16 | 1.00  | 1.00  | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.9  | 0.2  | 0.2   | 8.3   | 27.9  | 0.0  |
| Delay (s)              | 7.3  | 1.3  | 7.7   | 22.2  | 86.2  | 50.6 |
| Level of Service       | A    | A    | A     | C     | F     | D    |
| Approach Delay (s)     | 6.5  |      |       | 22.1  | 84.7  |      |
| Approach LOS           | A    |      |       | C     | F     |      |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.6  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.93  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 77.2% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group





# HCM Unsignalized Intersection Capacity Analysis

## 1: US 50 #1 & Grand Mesa Ave

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |      |      |      |      |      |      |
| Volume (veh/h)         | 3    | 1769 | 1    | 23   | 1035 | 0    | 2    | 0    | 0    | 1    | 0    | 41   |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 7    | 4057 | 2    | 53   | 2374 | 0    | 5    | 0    | 0    | 2    | 0    | 94   |
| Pedestrians            |      |      |      |      |      |      |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |      |      |      |      | 2    |
| Median type            |      | None |      |      | None |      |      |      |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      |      |      |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC, conflicting volume | 2374 |      |      | 4059 |      |      | 5411 | 6551 | 2030 | 4522 | 6552 | 1187 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 2374 |      |      | 4059 |      |      | 5411 | 6551 | 2030 | 4522 | 6552 | 1187 |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 96   |      |      | 0    |      |      | 0    | 0    | 100  | 0    | 0    | 47   |
| cM capacity (veh/h)    | 192  |      |      | 39   |      |      | 0    | 0    | 46   | 0    | 0    | 177  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1  | WB 2 | WB 3 | NB 1 | SB 1 |
|------------------------|------|------|------|-------|------|------|------|------|
| Volume Total           | 7    | 2705 | 1355 | 53    | 1582 | 791  | 5    | 96   |
| Volume Left            | 7    | 0    | 0    | 53    | 0    | 0    | 5    | 2    |
| Volume Right           | 0    | 0    | 2    | 0     | 0    | 0    | 0    | 94   |
| cSH                    | 192  | 1700 | 1700 | 39    | 1700 | 1700 | 0    | 0    |
| Volume to Capacity     | 0.04 | 1.59 | 0.80 | 1.36  | 0.93 | 0.47 | Err  | Err  |
| Queue Length 95th (ft) | 3    | 0    | 0    | 135   | 0    | 0    | Err  | Err  |
| Control Delay (s)      | 24.4 | 0.0  | 0.0  | 432.6 | 0.0  | 0.0  | Err  | Err  |
| Lane LOS               | C    |      |      | F     |      |      | F    | F    |
| Approach Delay (s)     | 0.0  |      |      | 9.4   |      |      | Err  | Err  |
| Approach LOS           |      |      |      |       |      |      | F    | F    |

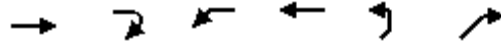
### Intersection Summary

|                                   |  |  |        |  |                      |  |  |   |
|-----------------------------------|--|--|--------|--|----------------------|--|--|---|
| Average Delay                     |  |  | Err    |  |                      |  |  |   |
| Intersection Capacity Utilization |  |  | 113.4% |  | ICU Level of Service |  |  | H |
| Analysis Period (min)             |  |  | 15     |  |                      |  |  |   |

# HCM Unsignalized Intersection Capacity Analysis

## 2: US 50 #1 & Gunnison Blvd

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NEL  | NER  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      | ↑↑   | ↘    |      |
| Volume (veh/h)         | 1771 | 7    | 0    | 1029 | 0    | 2    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 3975 | 16   | 0    | 2310 | 0    | 4    |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      | None |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      | 1069 |      |      |
| pX, platoon unblocked  |      |      |      |      | 0.48 |      |
| vC, conflicting volume |      |      | 3991 |      | 5138 | 1996 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 3991 |      | 7426 | 1996 |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 91   |
| cM capacity (veh/h)    |      |      | 41   |      | 0    | 49   |

| Direction, Lane #      | EB 1 | EB 2 | WB 1 | WB 2 | NE 1 |
|------------------------|------|------|------|------|------|
| Volume Total           | 2650 | 1341 | 1155 | 1155 | 4    |
| Volume Left            | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 16   | 0    | 0    | 4    |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 49   |
| Volume to Capacity     | 1.56 | 0.79 | 0.68 | 0.68 | 0.09 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 7    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 86.1 |
| Lane LOS               |      |      |      |      | F    |
| Approach Delay (s)     | 0.0  |      | 0.0  |      | 86.1 |
| Approach LOS           |      |      |      |      | F    |

| Intersection Summary              |  |  |        |                      |   |
|-----------------------------------|--|--|--------|----------------------|---|
| Average Delay                     |  |  | 0.1    |                      |   |
| Intersection Capacity Utilization |  |  | 113.8% | ICU Level of Service | H |
| Analysis Period (min)             |  |  | 15     |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

## 3: US 50 #1 & Santa Clara Ave

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|-------|------|
| Lane Configurations    |      |      |      |      |      |      |      |       |      |      |       |      |
| Volume (veh/h)         | 41   | 1733 | 0    | 1    | 1001 | 8    | 0    | 0     | 0    | 1    | 0     | 24   |
| Sign Control           |      | Free |      |      | Free |      |      | Stop  |      |      | Stop  |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%    |      |      | 0%    |      |
| Peak Hour Factor       | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94  | 0.94 | 0.94 | 0.94  | 0.94 |
| Hourly flow rate (vph) | 92   | 3890 | 0    | 2    | 2247 | 18   | 0    | 0     | 0    | 2    | 0     | 54   |
| Pedestrians            |      |      |      |      |      |      |      |       |      |      |       |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |       |      |      |       |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |       |      |      |       |      |
| Percent Blockage       |      |      |      |      |      |      |      |       |      |      |       |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |       |      |      |       |      |
| Median type            |      | None |      |      | None |      |      |       |      |      |       |      |
| Median storage (veh)   |      |      |      |      |      |      |      |       |      |      |       |      |
| Upstream signal (ft)   |      |      |      |      | 634  |      |      |       |      |      |       |      |
| pX, platoon unblocked  | 0.48 |      |      |      |      |      | 0.48 | 0.48  |      | 0.48 | 0.48  | 0.48 |
| vC, conflicting volume | 2265 |      |      | 3890 |      |      | 5256 | 6343  | 1945 | 4389 | 6334  | 1132 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |       |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |       |      |      |       |      |
| vCu, unblocked vol     | 1455 |      |      | 3890 |      |      | 7742 | 10028 | 1945 | 5921 | 10010 | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6   | 7.0  | 7.6  | 6.6   | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |       |      |      |       |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0   | 3.4  | 3.6  | 4.0   | 3.4  |
| p0 queue free %        | 57   |      |      | 95   |      |      | 100  | 100   | 100  | 0    | 100   | 89   |
| cM capacity (veh/h)    | 212  |      |      | 46   |      |      | 0    | 0     | 53   | 0    | 0     | 511  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1   |
|------------------------|------|------|------|------|------|------|------|--------|
| Volume Total           | 92   | 2593 | 1297 | 2    | 1498 | 767  | 0    | 56     |
| Volume Left            | 92   | 0    | 0    | 2    | 0    | 0    | 0    | 2      |
| Volume Right           | 0    | 0    | 0    | 0    | 0    | 18   | 0    | 54     |
| cSH                    | 212  | 1700 | 1700 | 46   | 1700 | 1700 | 1700 | 0      |
| Volume to Capacity     | 0.43 | 1.53 | 0.76 | 0.05 | 0.88 | 0.45 | 0.00 | 334.06 |
| Queue Length 95th (ft) | 51   | 0    | 0    | 4    | 0    | 0    | 0    | Err    |
| Control Delay (s)      | 34.3 | 0.0  | 0.0  | 88.0 | 0.0  | 0.0  | 0.0  | Err    |
| Lane LOS               | D    |      |      | F    |      |      | A    | F      |
| Approach Delay (s)     | 0.8  |      |      | 0.1  |      |      | 0.0  | 9999.0 |
| Approach LOS           |      |      |      |      |      |      | A    | F      |

### Intersection Summary

|                                   |        |
|-----------------------------------|--------|
| Average Delay                     | 89.5   |
| Intersection Capacity Utilization | 111.1% |
| ICU Level of Service              | H      |
| Analysis Period (min)             | 15     |

# HCM Unsignalized Intersection Capacity Analysis

## 5: US 50 #1 & James St

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|-------|------|
| Lane Configurations    |      |      |      |      |      |      |      |       |      |      |       |      |
| Volume (veh/h)         | 0    | 1502 | 0    | 0    | 794  | 1    | 0    | 0     | 0    | 1    | 0     | 4    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop  |      |      | Stop  |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%    |      |      | 0%    |      |
| Peak Hour Factor       | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97  | 0.97 | 0.97 | 0.97  | 0.97 |
| Hourly flow rate (vph) | 0    | 3298 | 0    | 0    | 1744 | 2    | 0    | 0     | 0    | 2    | 0     | 9    |
| Pedestrians            |      |      |      |      |      |      |      |       |      |      |       |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |       |      |      |       |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |       |      |      |       |      |
| Percent Blockage       |      |      |      |      |      |      |      |       |      |      |       |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |       |      |      |       |      |
| Median type            |      | None |      |      | None |      |      |       |      |      |       |      |
| Median storage (veh)   |      |      |      |      |      |      |      |       |      |      |       |      |
| Upstream signal (ft)   |      | 513  |      |      |      |      |      |       |      |      |       |      |
| pX, platoon unblocked  |      |      |      | 0.22 |      |      | 0.22 | 0.22  | 0.22 | 0.22 | 0.22  | 0.22 |
| vC, conflicting volume | 1746 |      |      | 3298 |      |      | 4179 | 5044  | 1649 | 3394 | 5043  | 873  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |       |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |       |      |      |       |      |
| vCu, unblocked vol     | 1746 |      |      | 4368 |      |      | 8408 | 12378 | 0    | 4806 | 12373 | 873  |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6   | 7.0  | 7.6  | 6.6   | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |       |      |      |       |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0   | 3.4  | 3.6  | 4.0   | 3.4  |
| p0 queue free %        | 100  |      |      | 100  |      |      | 100  | 100   | 100  | 0    | 100   | 97   |
| cM capacity (veh/h)    | 343  |      |      | 6    |      |      | 0    | 0     | 234  | 0    | 0     | 288  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1  |
|------------------------|------|------|------|------|------|------|------|-------|
| Volume Total           | 0    | 2199 | 1099 | 0    | 1162 | 583  | 0    | 11    |
| Volume Left            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 2     |
| Volume Right           | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 9     |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 0     |
| Volume to Capacity     | 0.00 | 1.29 | 0.65 | 0.00 | 0.68 | 0.34 | 0.00 | 53.04 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 0    | 0    | 0    | Err   |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | Err   |
| Lane LOS               |      |      |      |      |      |      | A    | F     |
| Approach Delay (s)     | 0.0  |      |      | 0.0  |      |      | 0.0  | Err   |
| Approach LOS           |      |      |      |      |      |      | A    | F     |

### Intersection Summary

|                                   |  |       |  |                      |  |  |   |  |
|-----------------------------------|--|-------|--|----------------------|--|--|---|--|
| Average Delay                     |  | 21.7  |  |                      |  |  |   |  |
| Intersection Capacity Utilization |  | 98.4% |  | ICU Level of Service |  |  | F |  |
| Analysis Period (min)             |  | 15    |  |                      |  |  |   |  |

# HCM Unsignalized Intersection Capacity Analysis

## 6: US 50 #1 & Green Acre 1

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      | ↑↑   |      | ↗    |
| Volume (veh/h)         | 1507 | 10   | 0    | 793  | 0    | 1    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 3344 | 22   | 0    | 1759 | 0    | 2    |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      |      | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   | 1023 |      |      | 1090 |      |      |
| pX, platoon unblocked  |      |      |      | 0.22 | 0.37 | 0.22 |
| vC, conflicting volume |      |      |      | 3366 | 4234 | 1683 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      |      | 4633 | 2827 | 0    |
| tC, single (s)         |      |      |      | 4.2  | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      |      | 2.2  | 3.6  | 3.4  |
| p0 queue free %        |      |      |      | 100  | 100  | 99   |
| cM capacity (veh/h)    |      |      |      | 5    | 5    | 241  |

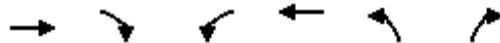
| Direction, Lane #      | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 |
|------------------------|------|------|------|------|------|
| Volume Total           | 2229 | 1137 | 880  | 880  | 2    |
| Volume Left            | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 22   | 0    | 0    | 2    |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 241  |
| Volume to Capacity     | 1.31 | 0.67 | 0.52 | 0.52 | 0.01 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 1    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 20.1 |
| Lane LOS               |      |      |      |      | C    |
| Approach Delay (s)     | 0.0  |      | 0.0  |      | 20.1 |
| Approach LOS           |      |      |      |      | C    |

| Intersection Summary              |  |  |       |                      |   |
|-----------------------------------|--|--|-------|----------------------|---|
| Average Delay                     |  |  | 0.0   |                      |   |
| Intersection Capacity Utilization |  |  | 99.4% | ICU Level of Service | F |
| Analysis Period (min)             |  |  | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

## 7: US 50 #1 & Elm Park

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      | ↙    | ↑↑   | ↘    |      |
| Volume (veh/h)         | 1508 | 10   | 13   | 794  | 5    | 16   |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 3381 | 22   | 29   | 1780 | 11   | 36   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      |      | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   | 1190 |      |      | 923  |      |      |
| pX, platoon unblocked  |      |      |      | 0.23 | 0.37 | 0.23 |
| vC, conflicting volume |      |      |      | 3404 | 4341 | 1702 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      |      | 4785 | 3036 | 0    |
| tC, single (s)         |      |      |      | 4.2  | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      |      | 2.2  | 3.6  | 3.4  |
| p0 queue free %        |      |      |      | 0    | 0    | 85   |
| cM capacity (veh/h)    |      |      |      | 4    | 0    | 243  |

| Direction, Lane #      | EB 1 | EB 2 | WB 1   | WB 2 | WB 3 | NB 1 |
|------------------------|------|------|--------|------|------|------|
| Volume Total           | 2254 | 1149 | 29     | 890  | 890  | 47   |
| Volume Left            | 0    | 0    | 29     | 0    | 0    | 11   |
| Volume Right           | 0    | 22   | 0      | 0    | 0    | 36   |
| cSH                    | 1700 | 1700 | 4      | 1700 | 1700 | 0    |
| Volume to Capacity     | 1.33 | 0.68 | 6.81   | 0.52 | 0.52 | Err  |
| Queue Length 95th (ft) | 0    | 0    | Err    | 0    | 0    | Err  |
| Control Delay (s)      | 0.0  | 0.0  | 4220.7 | 0.0  | 0.0  | Err  |
| Lane LOS               | F    |      |        | F    |      |      |
| Approach Delay (s)     | 0.0  |      | 68.0   |      |      | Err  |
| Approach LOS           |      |      |        | F    |      |      |

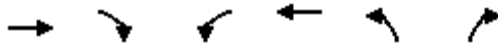
### Intersection Summary

|                                   |  |  |       |                      |  |   |
|-----------------------------------|--|--|-------|----------------------|--|---|
| Average Delay                     |  |  | Err   |                      |  |   |
| Intersection Capacity Utilization |  |  | 99.5% | ICU Level of Service |  | F |
| Analysis Period (min)             |  |  | 15    |                      |  |   |

# HCM Unsignalized Intersection Capacity Analysis

## 8: US 50 #1 & Green Acre 2

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT       | NBL  | NBR  |
|------------------------|------|------|------|-----------|------|------|
| Lane Configurations    | ↑↑   |      |      | ↑↑        |      | ↗    |
| Volume (veh/h)         | 1501 | 15   | 0    | 794       | 0    | 7    |
| Sign Control           | Free |      |      | Free      | Stop |      |
| Grade                  | 0%   |      |      | 0%        | 0%   |      |
| Peak Hour Factor       | 0.97 | 0.97 | 0.97 | 0.97      | 0.97 | 0.97 |
| Hourly flow rate (vph) | 3296 | 33   | 0    | 1744      | 0    | 15   |
| Pedestrians            |      |      |      |           |      |      |
| Lane Width (ft)        |      |      |      |           |      |      |
| Walking Speed (ft/s)   |      |      |      |           |      |      |
| Percent Blockage       |      |      |      |           |      |      |
| Right turn flare (veh) |      |      |      |           |      |      |
| Median type            | None |      |      | None      |      |      |
| Median storage (veh)   |      |      |      |           |      |      |
| Upstream signal (ft)   |      |      |      | 596       |      |      |
| pX, platoon unblocked  |      |      |      | 0.70      |      |      |
| vC, conflicting volume | 3329 |      |      | 4184 1664 |      |      |
| vC1, stage 1 conf vol  |      |      |      |           |      |      |
| vC2, stage 2 conf vol  |      |      |      |           |      |      |
| vCu, unblocked vol     | 3329 |      |      | 4693 1664 |      |      |
| tC, single (s)         | 4.2  |      |      | 6.9 7.0   |      |      |
| tC, 2 stage (s)        |      |      |      |           |      |      |
| tF (s)                 | 2.2  |      |      | 3.6 3.4   |      |      |
| p0 queue free %        | 100  |      |      | 100 81    |      |      |
| cM capacity (veh/h)    | 78   |      |      | 0 83      |      |      |

| Direction, Lane #      | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 |
|------------------------|------|------|------|------|------|
| Volume Total           | 2197 | 1132 | 872  | 872  | 15   |
| Volume Left            | 0    | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 33   | 0    | 0    | 15   |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 83   |
| Volume to Capacity     | 1.29 | 0.67 | 0.51 | 0.51 | 0.19 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 16   |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 57.9 |
| Lane LOS               |      |      |      |      | F    |
| Approach Delay (s)     | 0.0  |      |      | 57.9 |      |
| Approach LOS           |      |      |      |      | F    |

| Intersection Summary              |       |  |                      |   |  |
|-----------------------------------|-------|--|----------------------|---|--|
| Average Delay                     | 0.2   |  |                      |   |  |
| Intersection Capacity Utilization | 99.4% |  | ICU Level of Service | F |  |
| Analysis Period (min)             | 15    |  |                      |   |  |

# HCM Unsignalized Intersection Capacity Analysis

## 9: US 50 #1 & Aspen St

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |      |      |      |      |      |      |
| Volume (veh/h)         | 9    | 1498 | 16   | 13   | 805  | 0    | 6    | 2    | 3    | 3    | 0    | 2    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 20   | 3289 | 21   | 17   | 1768 | 0    | 13   | 4    | 7    | 7    | 0    | 4    |
| Pedestrians            |      |      |      |      |      |      |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |      |      |      |      |      |
| Median type            |      | None |      |      | None |      |      |      |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      | 381  |      |      |      |      |      |      |      |
| pX, platoon unblocked  | 0.70 |      |      |      |      |      | 0.70 | 0.70 |      | 0.70 | 0.70 | 0.70 |
| vC, conflicting volume | 1768 |      |      | 3310 |      |      | 4261 | 5140 | 1655 | 3494 | 5151 | 884  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 1229 |      |      | 3310 |      |      | 4813 | 6077 | 1655 | 3710 | 6092 | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 95   |      |      | 79   |      |      | 0    | 0    | 92   | 0    | 100  | 99   |
| cM capacity (veh/h)    | 380  |      |      | 80   |      |      | 0    | 0    | 84   | 0    | 0    | 748  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1   | SB 1 |
|------------------------|------|------|------|------|------|------|--------|------|
| Volume Total           | 20   | 2193 | 1117 | 17   | 1178 | 589  | 24     | 11   |
| Volume Left            | 20   | 0    | 0    | 17   | 0    | 0    | 13     | 7    |
| Volume Right           | 0    | 0    | 21   | 0    | 0    | 0    | 7      | 4    |
| cSH                    | 380  | 1700 | 1700 | 80   | 1700 | 1700 | 0      | 0    |
| Volume to Capacity     | 0.05 | 1.29 | 0.66 | 0.21 | 0.69 | 0.35 | 221.47 | Err  |
| Queue Length 95th (ft) | 4    | 0    | 0    | 18   | 0    | 0    | Err    | Err  |
| Control Delay (s)      | 15.0 | 0.0  | 0.0  | 61.8 | 0.0  | 0.0  | Err    | Err  |
| Lane LOS               | B    |      |      | F    |      |      | F      | F    |
| Approach Delay (s)     | 0.1  |      |      | 0.6  |      |      | Err    | Err  |
| Approach LOS           |      |      |      |      |      |      | F      | F    |

### Intersection Summary

|                                   |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | Err   |                      |
| Intersection Capacity Utilization |  | 98.8% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | F                    |



HCM Unsignalized Intersection Capacity Analysis  
 11: US 50 #1 & Palisade St

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↖    | ↑↑   | ↑↑↗  |      | ↘↙   |      |
| Volume (veh/h)         | 15   | 1475 | 770  | 7    | 2    | 3    |
| Sign Control           |      | Free | Free |      | Stop |      |
| Grade                  |      | 0%   | 0%   |      | 0%   |      |
| Peak Hour Factor       | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 34   | 3342 | 1745 | 16   | 5    | 7    |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            |      | None | None |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      | 420  |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      | 0.30 |      |
| vC, conflicting volume | 1761 |      |      |      | 3492 | 880  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 1761 |      |      |      | 4641 | 880  |
| tC, single (s)         | 4.2  |      |      |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.6  | 3.4  |
| p0 queue free %        | 90   |      |      |      | 0    | 98   |
| cM capacity (veh/h)    | 338  |      |      |      | 0    | 284  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | SB 1  |
|------------------------|------|------|------|------|------|-------|
| Volume Total           | 34   | 1671 | 1671 | 1163 | 597  | 11    |
| Volume Left            | 34   | 0    | 0    | 0    | 0    | 5     |
| Volume Right           | 0    | 0    | 0    | 0    | 16   | 7     |
| cSH                    | 338  | 1700 | 1700 | 1700 | 1700 | 0     |
| Volume to Capacity     | 0.10 | 0.98 | 0.98 | 0.68 | 0.35 | 26.19 |
| Queue Length 95th (ft) | 8    | 0    | 0    | 0    | 0    | Err   |
| Control Delay (s)      | 16.8 | 0.0  | 0.0  | 0.0  | 0.0  | Err   |
| Lane LOS               | C    |      |      |      |      | F     |
| Approach Delay (s)     | 0.2  |      |      | 0.0  |      | Err   |
| Approach LOS           |      |      |      |      |      | F     |

| Intersection Summary              |  |  |       |                      |  |   |
|-----------------------------------|--|--|-------|----------------------|--|---|
| Average Delay                     |  |  | 22.1  |                      |  |   |
| Intersection Capacity Utilization |  |  | 96.8% | ICU Level of Service |  | F |
| Analysis Period (min)             |  |  | 15    |                      |  |   |

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Intersection has too many legs for HCM analysis.

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HCM Unsignalized Intersection Capacity Analysis  
 14: US 50 #1 & Dorothy Ave

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |      |      |      |      |      |      |
| Volume (veh/h)         | 18   | 1138 | 265  | 29   | 700  | 3    | 30   | 1    | 6    | 9    | 1    | 18   |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 44   | 2760 | 643  | 70   | 1698 | 7    | 73   | 2    | 15   | 22   | 2    | 44   |
| Pedestrians            |      |      |      |      |      |      |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |      |      |      |      |      |      |
| Median type            |      | None |      |      | None |      |      |      |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |      |      |      |      |      |      |
| Upstream signal (ft)   |      | 807  |      |      |      |      |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      | 0.33 |      |      | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |      |
| vC, conflicting volume | 1705 |      |      | 2760 |      |      | 3882 | 4693 | 1380 | 3325 | 4690 | 853  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 1705 |      |      | 2262 |      |      | 5714 | 8210 | 0    | 4001 | 8199 | 853  |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 88   |      |      | 0    |      |      | 0    | 0    | 96   | 0    | 0    | 85   |
| cM capacity (veh/h)    | 356  |      |      | 69   |      |      | 0    | 0    | 349  | 0    | 0    | 297  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | EB 4 | WB 1  | WB 2 | WB 3 | NB 1 | SB 1 |
|------------------------|------|------|------|------|-------|------|------|------|------|
| Volume Total           | 44   | 1380 | 1380 | 643  | 70    | 1132 | 573  | 90   | 68   |
| Volume Left            | 44   | 0    | 0    | 0    | 70    | 0    | 0    | 73   | 22   |
| Volume Right           | 0    | 0    | 0    | 643  | 0     | 0    | 7    | 15   | 44   |
| cSH                    | 356  | 1700 | 1700 | 1700 | 69    | 1700 | 1700 | 0    | 0    |
| Volume to Capacity     | 0.12 | 0.81 | 0.81 | 0.38 | 1.01  | 0.67 | 0.34 | Err  | Err  |
| Queue Length 95th (ft) | 10   | 0    | 0    | 0    | 130   | 0    | 0    | Err  | Err  |
| Control Delay (s)      | 16.5 | 0.0  | 0.0  | 0.0  | 213.9 | 0.0  | 0.0  | Err  | Err  |
| Lane LOS               | C    |      |      |      | F     |      |      | F    | F    |
| Approach Delay (s)     | 0.2  |      |      |      | 8.5   |      |      | Err  | Err  |
| Approach LOS           |      |      |      |      |       |      |      | F    | F    |

Intersection Summary

|                                   |  |  |       |  |                      |  |  |  |   |
|-----------------------------------|--|--|-------|--|----------------------|--|--|--|---|
| Average Delay                     |  |  | Err   |  |                      |  |  |  |   |
| Intersection Capacity Utilization |  |  | 88.9% |  | ICU Level of Service |  |  |  | E |
| Analysis Period (min)             |  |  | 15    |  |                      |  |  |  |   |













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Intersection Sign configuration not allowed in HCM analysis.

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HCM Unsignalized Intersection Capacity Analysis  
 16: US 50 #1 & WB On-Ramp

11/5/2008

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                   | ↑↑                                                                                |                                                                                   |                                                                                    |                                                                                     | ↑                                                                                   |                                                                                     |                                                                                     | ↑                                                                                   |
| Volume (veh/h)                    | 0                                                                                 | 807                                                                               | 0                                                                                 | 0                                                                                 | 538                                                                               | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 180                                                                                 |
| Sign Control                      |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                    | Yield                                                                               |                                                                                     |                                                                                     | Yield                                                                               |                                                                                     |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 2000                                                                              | 0                                                                                 | 0                                                                                 | 1602                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 10                                                                                  | 0                                                                                   | 0                                                                                   | 286                                                                                 |
| 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            | 1602                                                                              |                                                                                   |                                                                                   | 2000                                                                              |                                                                                   |                                                                                   | 3087                                                                               | 3602                                                                                | 1000                                                                                | 2612                                                                                | 3602                                                                                | 801                                                                                 |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1602                                                                              |                                                                                   |                                                                                   | 2000                                                                              |                                                                                   |                                                                                   | 3087                                                                               | 3602                                                                                | 1000                                                                                | 2612                                                                                | 3602                                                                                | 801                                                                                 |
| tC, single (s)                    | 4.2                                                                               |                                                                                   |                                                                                   | 4.2                                                                               |                                                                                   |                                                                                   | 7.6                                                                                | 6.6                                                                                 | 7.0                                                                                 | 7.6                                                                                 | 6.6                                                                                 | 7.0                                                                                 |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 3.6                                                                                | 4.0                                                                                 | 3.4                                                                                 | 3.6                                                                                 | 4.0                                                                                 | 3.4                                                                                 |
| p0 queue free %                   | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |                                                                                   | 100                                                                                | 100                                                                                 | 96                                                                                  | 100                                                                                 | 100                                                                                 | 11                                                                                  |
| cM capacity (veh/h)               | 391                                                                               |                                                                                   |                                                                                   | 272                                                                               |                                                                                   |                                                                                   | 1                                                                                  | 5                                                                                   | 236                                                                                 | 11                                                                                  | 5                                                                                   | 321                                                                                 |
| Direction, Lane #                 | EB 1                                                                              | EB 2                                                                              | WB 1                                                                              | WB 2                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 1000                                                                              | 1000                                                                              | 801                                                                               | 801                                                                               | 10                                                                                | 286                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 10                                                                                | 286                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 236                                                                               | 321                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.59                                                                              | 0.59                                                                              | 0.47                                                                              | 0.47                                                                              | 0.04                                                                              | 0.89                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 209                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 20.9                                                                              | 62.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   | C                                                                                 | F                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 20.9                                                                              | 62.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   | C                                                                                 | F                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 4.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 63.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | B                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM Unsignalized Intersection Capacity Analysis  
 17: US 50 #1 & Frontage Rd

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |      |      |      |      |      |      |
| Volume (veh/h)         | 124  | 726  | 1    | 10   | 475  | 4    | 6    | 4    | 9    | 1    | 5    | 57   |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 354  | 2072 | 3    | 29   | 1356 | 11   | 17   | 11   | 26   | 3    | 14   | 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 | 1367 |      |      | 2075 |      |      | 3685 | 4204 | 1036 | 3188 | 4196 | 678  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 1367 |      |      | 2075 |      |      | 3685 | 4204 | 1036 | 3188 | 4196 | 678  |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 27   |      |      | 89   |      |      | 0    | 0    | 88   | 0    | 0    | 58   |
| cM capacity (veh/h)    | 483  |      |      | 254  |      |      | 0    | 0    | 223  | 0    | 0    | 388  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | EB 4 | WB 1 | WB 2 | WB 3 | WB 4 | NB 1 | SB 1 |
|------------------------|------|------|------|------|------|------|------|------|------|------|
| Volume Total           | 354  | 1036 | 1036 | 3    | 29   | 678  | 678  | 11   | 54   | 180  |
| Volume Left            | 354  | 0    | 0    | 0    | 29   | 0    | 0    | 0    | 17   | 3    |
| Volume Right           | 0    | 0    | 0    | 3    | 0    | 0    | 0    | 11   | 26   | 163  |
| cSH                    | 483  | 1700 | 1700 | 1700 | 254  | 1700 | 1700 | 1700 | 0    | 0    |
| Volume to Capacity     | 0.73 | 0.61 | 0.61 | 0.00 | 0.11 | 0.40 | 0.40 | 0.01 | Err  | Err  |
| Queue Length 95th (ft) | 150  | 0    | 0    | 0    | 9    | 0    | 0    | 0    | Err  | Err  |
| Control Delay (s)      | 30.3 | 0.0  | 0.0  | 0.0  | 21.0 | 0.0  | 0.0  | 0.0  | Err  | Err  |
| Lane LOS               | D    |      |      |      | C    |      |      |      | F    | F    |
| Approach Delay (s)     | 4.4  |      |      |      | 0.4  |      |      |      | Err  | Err  |
| Approach LOS           |      |      |      |      |      |      |      |      | F    | F    |

Intersection Summary

|                                   |  |  |       |     |                      |  |  |  |   |  |
|-----------------------------------|--|--|-------|-----|----------------------|--|--|--|---|--|
| Average Delay                     |  |  |       | Err |                      |  |  |  |   |  |
| Intersection Capacity Utilization |  |  | 81.8% |     | ICU Level of Service |  |  |  | D |  |
| Analysis Period (min)             |  |  | 15    |     |                      |  |  |  |   |  |

# HCM Unsignalized Intersection Capacity Analysis

## 20: US 50 WB #3 & Fairgrounds

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |      |      |
| Volume (veh/h)         | 0    | 0    | 18   | 479  | 6    | 0    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 0    | 0    | 53   | 1411 | 18   | 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)   | 1235 |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |
| vC, conflicting volume |      |      | 0    |      | 812  | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 0    |      | 812  | 0    |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 97   |      | 94   | 100  |
| cM capacity (veh/h)    |      |      | 1600 |      | 301  | 1075 |

| Direction, Lane #      | WB 1 | WB 2 | WB 3 | NB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 53   | 706  | 706  | 18   |
| Volume Left            | 53   | 0    | 0    | 18   |
| Volume Right           | 0    | 0    | 0    | 0    |
| cSH                    | 1600 | 1700 | 1700 | 301  |
| Volume to Capacity     | 0.03 | 0.42 | 0.42 | 0.06 |
| Queue Length 95th (ft) | 3    | 0    | 0    | 5    |
| Control Delay (s)      | 7.3  | 0.0  | 0.0  | 17.7 |
| Lane LOS               | A    |      |      | C    |
| Approach Delay (s)     | 0.3  |      |      | 17.7 |
| Approach LOS           |      |      |      | C    |

| Intersection Summary              |  |        |                        |
|-----------------------------------|--|--------|------------------------|
| Average Delay                     |  | 0.5    |                        |
| Intersection Capacity Utilization |  | 107.1% | ICU Level of Service G |
| Analysis Period (min)             |  | 15     |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 21: US 50 EB #2 & Fairgrounds

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   | ↗    |      |      |      |      | ↑    |      |      | ↖    |      |
| Volume (veh/h)         | 0    | 759  | 10   | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 18   | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 0    | 2236 | 29   | 0    | 0    | 0    | 0    | 18   | 0    | 0    | 53   | 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)   |      | 1250 |      |      |      |      |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      | 0.50 |      |      | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| vC, conflicting volume | 0    |      |      | 2266 |      |      | 2263 | 2236 | 1118 | 1127 | 2266 | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 0    |      |      | 1536 |      |      | 1530 | 1478 | 0    | 0    | 1536 | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 100  |      |      | 100  |      |      | 100  | 71   | 100  | 100  | 5    | 100  |
| cM capacity (veh/h)    | 1600 |      |      | 208  |      |      | 6    | 61   | 539  | 395  | 56   | 1075 |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | NB 1 | SB 1  |
|------------------------|------|------|------|------|-------|
| Volume Total           | 1118 | 1118 | 29   | 18   | 53    |
| Volume Left            | 0    | 0    | 0    | 0    | 0     |
| Volume Right           | 0    | 0    | 29   | 0    | 0     |
| cSH                    | 1700 | 1700 | 1700 | 61   | 56    |
| Volume to Capacity     | 0.66 | 0.66 | 0.02 | 0.29 | 0.95  |
| Queue Length 95th (ft) | 0    | 0    | 0    | 26   | 107   |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 86.6 | 222.9 |
| Lane LOS               |      |      |      | F    | F     |
| Approach Delay (s)     | 0.0  |      |      | 86.6 | 222.9 |
| Approach LOS           |      |      |      | F    | F     |

### Intersection Summary

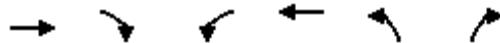
|                                   |        |
|-----------------------------------|--------|
| Average Delay                     | 5.7    |
| Intersection Capacity Utilization | 102.4% |
| ICU Level of Service              | G      |
| Analysis Period (min)             | 15     |



# HCM Unsignalized Intersection Capacity Analysis

## 22: US 50 EB #2 & KOA

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      |      |      | ↗    |
| Volume (veh/h)         | 754  | 15   | 0    | 0    | 0    | 13   |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2246 | 45   | 0    | 0    | 0    | 39   |
| 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 |      |      | 2290 |      | 2268 | 1145 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 2290 |      | 2268 | 1145 |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 79   |
| cM capacity (veh/h)    |      |      | 208  |      | 33   | 188  |

| Direction, Lane #      | EB 1 | EB 2 | NB 1 |
|------------------------|------|------|------|
| Volume Total           | 1497 | 793  | 39   |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 45   | 39   |
| cSH                    | 1700 | 1700 | 188  |
| Volume to Capacity     | 0.88 | 0.47 | 0.21 |
| Queue Length 95th (ft) | 0    | 0    | 19   |
| Control Delay (s)      | 0.0  | 0.0  | 29.0 |
| Lane LOS               |      |      | D    |
| Approach Delay (s)     | 0.0  |      | 29.0 |
| Approach LOS           |      |      | D    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 0.5                  |   |
| Intersection Capacity Utilization | 68.4% | ICU Level of Service | C |
| Analysis Period (min)             | 15    |                      |   |

HCM Unsignalized Intersection Capacity Analysis  
 25: US 50 EB #2 & Rainbow Dr

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   | ↑    |      |      |      | ↑    |
| Volume (veh/h)         | 2108 | 60   | 0    | 0    | 0    | 9    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 2316 | 66   | 0    | 0    | 0    | 10   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      |      | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   | 831  |      |      |      |      |      |
| pX, platoon unblocked  |      |      | 0.60 |      | 0.60 | 0.60 |
| vC, conflicting volume |      |      | 2382 |      | 2316 | 1158 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 1964 |      | 1854 | 0    |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 98   |
| cM capacity (veh/h)    |      |      | 167  |      | 38   | 641  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | NB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 1158 | 1158 | 66   | 10   |
| Volume Left            | 0    | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 66   | 10   |
| cSH                    | 1700 | 1700 | 1700 | 641  |
| Volume to Capacity     | 0.68 | 0.68 | 0.04 | 0.02 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 1    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 10.7 |
| Lane LOS               |      |      |      | B    |
| Approach Delay (s)     | 0.0  |      |      | 10.7 |
| Approach LOS           |      |      |      | B    |

| Intersection Summary              |       |  |                      |   |
|-----------------------------------|-------|--|----------------------|---|
| Average Delay                     |       |  | 0.0                  |   |
| Intersection Capacity Utilization | 68.3% |  | ICU Level of Service | C |
| Analysis Period (min)             | 15    |  |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

## 26: US 50 WB #3 & Tennessee St

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↗    |
| Volume (veh/h)         | 0    | 0    | 1558 | 0    | 0    | 4    |
| Sign Control           |      | Free | Free |      | Stop |      |
| 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    | 1693 | 0    | 0    | 4    |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            |      | None | None |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      | 1096 |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |
| vC, conflicting volume | 1693 |      |      | 1693 | 847  |      |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 1693 |      |      | 1693 | 847  |      |
| tC, single (s)         | 4.2  |      |      | 6.9  | 7.0  |      |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 3.6  | 3.4  |      |
| p0 queue free %        | 100  |      |      | 100  | 99   |      |
| cM capacity (veh/h)    | 360  |      |      | 81   | 299  |      |

| Direction, Lane #      | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 1129 | 564  | 4    |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 4    |
| cSH                    | 1700 | 1700 | 299  |
| Volume to Capacity     | 0.66 | 0.33 | 0.01 |
| Queue Length 95th (ft) | 0    | 0    | 1    |
| Control Delay (s)      | 0.0  | 0.0  | 17.2 |
| Lane LOS               |      |      | C    |
| Approach Delay (s)     | 0.0  |      | 17.2 |
| Approach LOS           |      |      | C    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.0   |                        |
| Intersection Capacity Utilization |  | 53.1% | ICU Level of Service A |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 27: US 50 WB #3 & Indiana St

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↗    |
| Volume (veh/h)         | 0    | 0    | 1643 | 9    | 0    | 3    |
| Sign Control           |      | Free | Free |      | Stop |      |
| Grade                  |      | 0%   | 0%   |      | 0%   |      |
| Peak Hour Factor       | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 0    | 0    | 1711 | 9    | 0    | 3    |
| 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 | 1721 |      |      |      | 1716 | 860  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 1721 |      |      |      | 1716 | 860  |
| tC, single (s)         | 4.2  |      |      |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.6  | 3.4  |
| p0 queue free %        | 100  |      |      |      | 100  | 99   |
| cM capacity (veh/h)    | 351  |      |      |      | 78   | 293  |

| Direction, Lane #      | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 1141 | 580  | 3    |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 9    | 3    |
| cSH                    | 1700 | 1700 | 293  |
| Volume to Capacity     | 0.67 | 0.34 | 0.01 |
| Queue Length 95th (ft) | 0    | 0    | 1    |
| Control Delay (s)      | 0.0  | 0.0  | 17.4 |
| Lane LOS               |      |      | C    |
| Approach Delay (s)     | 0.0  |      | 17.4 |
| Approach LOS           |      |      | C    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.0   |                        |
| Intersection Capacity Utilization |  | 55.7% | ICU Level of Service B |
| Analysis Period (min)             |  | 15    |                        |

HCM Unsignalized Intersection Capacity Analysis  
 28: US 50 WB #3 & Dee Vee Dr

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL   | NBR  |
|------------------------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↕↕   | ↕     |      |
| Volume (veh/h)         | 0    | 0    | 0    | 1681 | 9     | 0    |
| Sign Control           | Free |      |      | Free | Yield |      |
| Grade                  | 0%   |      |      | 0%   | 0%    |      |
| Peak Hour Factor       | 0.93 | 0.93 | 0.93 | 0.93 | 0.93  | 0.93 |
| Hourly flow rate (vph) | 0    | 0    | 0    | 1808 | 10    | 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 |      |      | 0    | 904  | 0     |      |
| vC1, stage 1 conf vol  |      |      |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |       |      |
| vCu, unblocked vol     |      |      | 0    | 904  | 0     |      |
| tC, single (s)         |      |      | 4.2  | 6.9  | 7.0   |      |
| tC, 2 stage (s)        |      |      |      |      |       |      |
| tF (s)                 |      |      | 2.2  | 3.6  | 3.4   |      |
| p0 queue free %        |      |      | 100  | 96   | 100   |      |
| cM capacity (veh/h)    |      |      | 1600 | 271  | 1075  |      |

| Direction, Lane #      | WB 1 | WB 2 | NB 1 |
|------------------------|------|------|------|
| Volume Total           | 603  | 1205 | 10   |
| Volume Left            | 0    | 0    | 10   |
| Volume Right           | 0    | 0    | 0    |
| cSH                    | 1600 | 1700 | 271  |
| Volume to Capacity     | 0.00 | 0.71 | 0.04 |
| Queue Length 95th (ft) | 0    | 0    | 3    |
| Control Delay (s)      | 0.0  | 0.0  | 18.8 |
| Lane LOS               | C    |      |      |
| Approach Delay (s)     | 0.0  |      | 18.8 |
| Approach LOS           | C    |      |      |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 0.1                  |   |
| Intersection Capacity Utilization | 56.5% | ICU Level of Service | B |
| Analysis Period (min)             | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

## 29: US 50 EB #2 & Dee Vee Dr

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↔↔   |      |      |      |      |      | ↔    |      |      | ↔     |      |
| Volume (veh/h)         | 9    | 2171 | 0    | 0    | 0    | 0    | 0    | 0    | 3    | 9    | 6     | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Yield |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%    |      |
| Peak Hour Factor       | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93  | 0.93 |
| Hourly flow rate (vph) | 10   | 2334 | 0    | 0    | 0    | 0    | 0    | 0    | 3    | 10   | 6     | 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 | 0    |      |      | 2334 |      |      | 2357 | 2354 | 1167 | 1190 | 2354  | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |       |      |
| vCu, unblocked vol     | 0    |      |      | 2334 |      |      | 2357 | 2354 | 1167 | 1190 | 2354  | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6   | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |       |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0   | 3.4  |
| p0 queue free %        | 99   |      |      | 100  |      |      | 100  | 100  | 98   | 93   | 81    | 100  |
| cM capacity (veh/h)    | 1600 |      |      | 200  |      |      | 15   | 34   | 182  | 137  | 34    | 1075 |

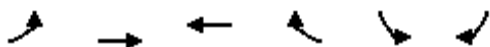
| Direction, Lane #      | EB 1 | EB 2 | NB 1 | SB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 1177 | 1167 | 3    | 16   |
| Volume Left            | 10   | 0    | 0    | 10   |
| Volume Right           | 0    | 0    | 3    | 0    |
| cSH                    | 1600 | 1700 | 182  | 61   |
| Volume to Capacity     | 0.01 | 0.69 | 0.02 | 0.26 |
| Queue Length 95th (ft) | 0    | 0    | 1    | 23   |
| Control Delay (s)      | 0.2  | 0.0  | 25.1 | 83.3 |
| Lane LOS               | A    |      | D    | F    |
| Approach Delay (s)     | 0.1  |      | 25.1 | 83.3 |
| Approach LOS           |      |      | D    | F    |

| Intersection Summary              |  |       |                      |
|-----------------------------------|--|-------|----------------------|
| Average Delay                     |  | 0.7   |                      |
| Intersection Capacity Utilization |  | 74.4% | ICU Level of Service |
| Analysis Period (min)             |  | 15    | D                    |

# HCM Unsignalized Intersection Capacity Analysis

## 30: US 50 WB #3 & Elm Dr

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↗    |
| Volume (veh/h)         | 0    | 0    | 1678 | 3    | 0    | 3    |
| Sign Control           |      | Free | Free |      | Stop |      |
| Grade                  |      | 0%   | 0%   |      | 0%   |      |
| Peak Hour Factor       | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 0    | 0    | 1785 | 3    | 0    | 3    |
| 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 | 1788 |      |      |      | 1787 | 894  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 1788 |      |      |      | 1787 | 894  |
| tC, single (s)         | 4.2  |      |      |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.6  | 3.4  |
| p0 queue free %        | 100  |      |      |      | 100  | 99   |
| cM capacity (veh/h)    | 330  |      |      |      | 70   | 278  |

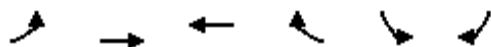
| Direction, Lane #      | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 1190 | 598  | 3    |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 3    | 3    |
| cSH                    | 1700 | 1700 | 278  |
| Volume to Capacity     | 0.70 | 0.35 | 0.01 |
| Queue Length 95th (ft) | 0    | 0    | 1    |
| Control Delay (s)      | 0.0  | 0.0  | 18.1 |
| Lane LOS               |      |      | C    |
| Approach Delay (s)     | 0.0  |      | 18.1 |
| Approach LOS           |      |      | C    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.0   |                        |
| Intersection Capacity Utilization |  | 56.5% | ICU Level of Service B |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis

## 31: US 50 WB #3 & Reta Dr

11/5/2008



| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↗    |
| Volume (veh/h)         | 0    | 0    | 1675 | 0    | 0    | 0    |
| Sign Control           |      | Free | Free |      | Stop |      |
| Grade                  |      | 0%   | 0%   |      | 0%   |      |
| Peak Hour Factor       | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 0    | 0    | 1763 | 0    | 0    | 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)   |      |      | 389  |      |      |      |
| pX, platoon unblocked  | 0.62 |      |      |      | 0.62 | 0.62 |
| vC, conflicting volume | 1763 |      |      |      | 1763 | 882  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 994  |      |      |      | 994  | 0    |
| tC, single (s)         | 4.2  |      |      |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.6  | 3.4  |
| p0 queue free %        | 100  |      |      |      | 100  | 100  |
| cM capacity (veh/h)    | 415  |      |      |      | 146  | 663  |

| Direction, Lane #      | WB 1 | WB 2 | SB 1 |
|------------------------|------|------|------|
| Volume Total           | 1175 | 588  | 0    |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 0    | 0    |
| cSH                    | 1700 | 1700 | 1700 |
| Volume to Capacity     | 0.69 | 0.35 | 0.00 |
| Queue Length 95th (ft) | 0    | 0    | 0    |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  |
| Lane LOS               |      |      | A    |
| Approach Delay (s)     | 0.0  |      | 0.0  |
| Approach LOS           |      |      | A    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.0   |                        |
| Intersection Capacity Utilization |  | 49.6% | ICU Level of Service A |
| Analysis Period (min)             |  | 15    |                        |



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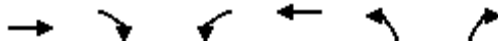
Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

HCM Unsignalized Intersection Capacity Analysis  
 38: US 50 EB #2 & Redrock Rd

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   |      |      |      |      | ↗    |
| Volume (veh/h)         | 2969 | 18   | 0    | 0    | 0    | 18   |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 3452 | 21   | 0    | 0    | 0    | 21   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None |      |      | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   | 595  |      |      |      |      |      |
| pX, platoon unblocked  |      |      | 0.19 |      | 0.19 | 0.19 |
| vC, conflicting volume |      |      | 3473 |      | 3463 | 1737 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 5486 |      | 5431 | 0    |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 100  |      | 100  | 90   |
| cM capacity (veh/h)    |      |      | 2    |      | 0    | 205  |

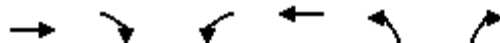
| Direction, Lane #      | EB 1 | EB 2 | NB 1 |
|------------------------|------|------|------|
| Volume Total           | 2302 | 1172 | 21   |
| Volume Left            | 0    | 0    | 0    |
| Volume Right           | 0    | 21   | 21   |
| cSH                    | 1700 | 1700 | 205  |
| Volume to Capacity     | 1.35 | 0.69 | 0.10 |
| Queue Length 95th (ft) | 0    | 0    | 8    |
| Control Delay (s)      | 0.0  | 0.0  | 24.6 |
| Lane LOS               |      |      | C    |
| Approach Delay (s)     | 0.0  |      | 24.6 |
| Approach LOS           |      |      | C    |

| Intersection Summary              |  |       |                        |
|-----------------------------------|--|-------|------------------------|
| Average Delay                     |  | 0.1   |                        |
| Intersection Capacity Utilization |  | 92.6% | ICU Level of Service F |
| Analysis Period (min)             |  | 15    |                        |

# HCM Unsignalized Intersection Capacity Analysis

39: US 50 WB #3 & 29 1/4 Rd

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL   | NBR  |
|------------------------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↕↕   | ↕     |      |
| Volume (veh/h)         | 0    | 0    | 0    | 1900 | 123   | 0    |
| Sign Control           | Free |      |      | Free | Yield |      |
| Grade                  | 0%   |      |      | 0%   | 0%    |      |
| Peak Hour Factor       | 0.86 | 0.86 | 0.86 | 0.86 | 0.86  | 0.86 |
| Hourly flow rate (vph) | 0    | 0    | 0    | 2209 | 143   | 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)   | 1002 |      |      |      |       |      |
| pX, platoon unblocked  |      |      |      |      |       |      |
| vC, conflicting volume |      |      |      | 0    | 1105  | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |       |      |
| vCu, unblocked vol     |      |      |      | 0    | 1105  | 0    |
| tC, single (s)         |      |      |      | 4.2  | 6.9   | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |       |      |
| tF (s)                 |      |      |      | 2.2  | 3.6   | 3.4  |
| p0 queue free %        |      |      |      | 100  | 29    | 100  |
| cM capacity (veh/h)    |      |      |      | 1600 | 200   | 1075 |

| Direction, Lane #      | WB 1 | WB 2 | NB 1 |
|------------------------|------|------|------|
| Volume Total           | 736  | 1473 | 143  |
| Volume Left            | 0    | 0    | 143  |
| Volume Right           | 0    | 0    | 0    |
| cSH                    | 1600 | 1700 | 200  |
| Volume to Capacity     | 0.00 | 0.87 | 0.71 |
| Queue Length 95th (ft) | 0    | 0    | 114  |
| Control Delay (s)      | 0.0  | 0.0  | 58.2 |
| Lane LOS               | F    |      |      |
| Approach Delay (s)     | 0.0  | 58.2 |      |
| Approach LOS           | F    |      |      |

| Intersection Summary              |        |                      |   |
|-----------------------------------|--------|----------------------|---|
| Average Delay                     | 3.5    |                      |   |
| Intersection Capacity Utilization | 150.0% | ICU Level of Service | H |
| Analysis Period (min)             | 15     |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

40: US 50 EB #2 & 29 1/4 Rd

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕↕   |      |      |      |      |      | ↕    |      |      | ↕     |      |
| Volume (veh/h)         | 0    | 2827 | 91   | 0    | 0    | 0    | 0    | 123  | 0    | 0    | 0     | 0    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Yield |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 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) | 0    | 3287 | 106  | 0    | 0    | 0    | 0    | 143  | 0    | 0    | 0     | 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)   |      | 969  |      |      |      |      |      |      |      |      |       |      |
| pX, platoon unblocked  |      |      |      | 0.19 |      |      | 0.19 | 0.19 | 0.19 | 0.19 | 0.19  | 0.19 |
| vC, conflicting volume | 0    |      |      | 3393 |      |      | 3340 | 3340 | 1697 | 1715 | 3393  | 0    |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |       |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |       |      |
| vCu, unblocked vol     | 0    |      |      | 5026 |      |      | 4754 | 4754 | 0    | 0    | 5026  | 0    |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6   | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |       |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0   | 3.4  |
| p0 queue free %        | 100  |      |      | 100  |      |      | 100  | 0    | 100  | 0    | 100   | 100  |
| cM capacity (veh/h)    | 1600 |      |      | 3    |      |      | 0    | 0    | 208  | 0    | 0     | 1075 |

| Direction, Lane #      | EB 1 | EB 2 | NB 1   | SB 1 |
|------------------------|------|------|--------|------|
| Volume Total           | 1644 | 1749 | 143    | 0    |
| Volume Left            | 0    | 0    | 0      | 0    |
| Volume Right           | 0    | 106  | 0      | 0    |
| cSH                    | 1600 | 1700 | 0      | 1700 |
| Volume to Capacity     | 0.00 | 1.03 | 940.52 | 0.00 |
| Queue Length 95th (ft) | 0    | 0    | Err    | 0    |
| Control Delay (s)      | 0.0  | 0.0  | Err    | 0.0  |
| Lane LOS               |      |      | F      | A    |
| Approach Delay (s)     | 0.0  |      | Err    | 0.0  |
| Approach LOS           |      |      | F      | A    |

## Intersection Summary

|                                   |  |       |                      |   |
|-----------------------------------|--|-------|----------------------|---|
| Average Delay                     |  | 404.4 |                      |   |
| Intersection Capacity Utilization |  | 94.2% | ICU Level of Service | F |
| Analysis Period (min)             |  | 15    |                      |   |

# HCM Unsignalized Intersection Capacity Analysis

42: US 50 #4 & 29 3/4 Rd

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    | ↙    | ↑↑   | ↗    | ↙    | ↑↑   | ↗    |      | ↕    |      |      | ↕    |      |
| Volume (veh/h)         | 14   | 2200 | 100  | 100  | 1650 | 19   | 100  | 0    | 100  | 14   | 5    | 46   |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.92 | 0.89 | 0.89 | 0.89 | 0.89 | 0.92 | 0.89 | 0.92 | 0.89 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 15   | 2472 | 112  | 112  | 1854 | 21   | 112  | 0    | 112  | 15   | 5    | 50   |
| 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 | 1875 |      |      | 2584 |      |      | 3707 | 4602 | 1236 | 3457 | 4693 | 927  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 1875 |      |      | 2584 |      |      | 3707 | 4602 | 1236 | 3457 | 4693 | 927  |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 95   |      |      | 29   |      |      | 0    | 100  | 31   | 0    | 0    | 81   |
| cM capacity (veh/h)    | 305  |      |      | 158  |      |      | 0    | 0    | 164  | 0    | 0    | 264  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | EB 4 | WB 1 | WB 2 | WB 3 | WB 4 | NB 1 | SB 1  |
|------------------------|------|------|------|------|------|------|------|------|------|-------|
| Volume Total           | 15   | 1236 | 1236 | 112  | 112  | 927  | 927  | 21   | 225  | 71    |
| Volume Left            | 15   | 0    | 0    | 0    | 112  | 0    | 0    | 0    | 112  | 15    |
| Volume Right           | 0    | 0    | 0    | 112  | 0    | 0    | 0    | 21   | 112  | 50    |
| cSH                    | 305  | 1700 | 1700 | 1700 | 158  | 1700 | 1700 | 1700 | 0    | 1     |
| Volume to Capacity     | 0.05 | 0.73 | 0.73 | 0.07 | 0.71 | 0.55 | 0.55 | 0.01 | Err  | 72.10 |
| Queue Length 95th (ft) | 4    | 0    | 0    | 0    | 106  | 0    | 0    | 0    | Err  | Err   |
| Control Delay (s)      | 17.4 | 0.0  | 0.0  | 0.0  | 69.9 | 0.0  | 0.0  | 0.0  | Err  | Err   |
| Lane LOS               | C    |      |      |      | F    |      |      |      | F    | F     |
| Approach Delay (s)     | 0.1  |      |      |      | 4.0  |      |      |      | Err  | Err   |
| Approach LOS           |      |      |      |      |      |      |      |      | F    | F     |

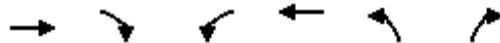
## Intersection Summary

|                                   |  |       |  |                      |  |  |  |  |   |  |
|-----------------------------------|--|-------|--|----------------------|--|--|--|--|---|--|
| Average Delay                     |  | Err   |  |                      |  |  |  |  |   |  |
| Intersection Capacity Utilization |  | 94.7% |  | ICU Level of Service |  |  |  |  | F |  |
| Analysis Period (min)             |  | 15    |  |                      |  |  |  |  |   |  |

# HCM Unsignalized Intersection Capacity Analysis

## 44: US 50 #4 & S Frontage Rd

11/5/2008

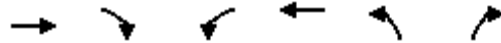


| Movement                          | EBT  | EBR  | WBL   | WBT                  | NBL  | NBR  |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations               | ↑↑   |      | ↙     | ↑↑                   | ↘    |      |
| Volume (veh/h)                    | 2500 | 10   | 15    | 1702                 | 0    | 5    |
| Sign Control                      | Free |      |       | Free                 | Stop |      |
| Grade                             | 0%   |      |       | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.98 | 0.98 | 0.98  | 0.98                 | 0.98 | 0.98 |
| Hourly flow rate (vph)            | 2551 | 10   | 15    | 1737                 | 0    | 5    |
| 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            |      |      | 2561  |                      | 3455 | 1281 |
| vC1, stage 1 conf vol             |      |      |       |                      |      |      |
| vC2, stage 2 conf vol             |      |      |       |                      |      |      |
| vCu, unblocked vol                |      |      | 2561  |                      | 3455 | 1281 |
| tC, single (s)                    |      |      | 4.2   |                      | 6.9  | 7.0  |
| tC, 2 stage (s)                   |      |      |       |                      |      |      |
| tF (s)                            |      |      | 2.2   |                      | 3.6  | 3.4  |
| p0 queue free %                   |      |      | 91    |                      | 100  | 97   |
| cM capacity (veh/h)               |      |      | 162   |                      | 4    | 152  |
| Direction, Lane #                 | EB 1 | EB 2 | WB 1  | WB 2                 | WB 3 | NB 1 |
| Volume Total                      | 1701 | 861  | 15    | 868                  | 868  | 5    |
| Volume Left                       | 0    | 0    | 15    | 0                    | 0    | 0    |
| Volume Right                      | 0    | 10   | 0     | 0                    | 0    | 5    |
| cSH                               | 1700 | 1700 | 162   | 1700                 | 1700 | 152  |
| Volume to Capacity                | 1.00 | 0.51 | 0.09  | 0.51                 | 0.51 | 0.03 |
| Queue Length 95th (ft)            | 0    | 0    | 8     | 0                    | 0    | 3    |
| Control Delay (s)                 | 0.0  | 0.0  | 29.6  | 0.0                  | 0.0  | 29.4 |
| Lane LOS                          | D    |      |       | D                    |      |      |
| Approach Delay (s)                | 0.0  |      | 0.3   |                      |      | 29.4 |
| Approach LOS                      |      |      |       | D                    |      |      |
| Intersection Summary              |      |      |       |                      |      |      |
| Average Delay                     |      |      | 0.1   |                      |      |      |
| Intersection Capacity Utilization |      |      | 79.4% | ICU Level of Service |      | D    |
| Analysis Period (min)             |      |      | 15    |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

## 47: US 50 #7 & CDOT

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   | ↑    | ↵    | ↑↑↑  | ↵    |      |
| Volume (veh/h)         | 2867 | 13   | 13   | 1768 | 72   | 9    |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 3186 | 14   | 14   | 1964 | 80   | 10   |
| 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 |      |      | 3200 |      | 3869 | 1593 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 3200 |      | 3869 | 1593 |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 84   |      | 0    | 89   |
| cM capacity (veh/h)    |      |      | 88   |      | 2    | 93   |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | WB 4 | NB 1  |
|------------------------|------|------|------|------|------|------|------|-------|
| Volume Total           | 1593 | 1593 | 14   | 14   | 655  | 655  | 655  | 90    |
| Volume Left            | 0    | 0    | 0    | 14   | 0    | 0    | 0    | 80    |
| Volume Right           | 0    | 0    | 14   | 0    | 0    | 0    | 0    | 10    |
| cSH                    | 1700 | 1700 | 1700 | 88   | 1700 | 1700 | 1700 | 2     |
| Volume to Capacity     | 0.94 | 0.94 | 0.01 | 0.16 | 0.39 | 0.39 | 0.39 | 40.28 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 14   | 0    | 0    | 0    | Err   |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 53.5 | 0.0  | 0.0  | 0.0  | Err   |
| Lane LOS               |      |      |      | F    |      |      |      | F     |
| Approach Delay (s)     | 0.0  |      |      | 0.4  |      |      |      | Err   |
| Approach LOS           |      |      |      |      |      |      |      | F     |

| Intersection Summary              |       |  |                      |
|-----------------------------------|-------|--|----------------------|
| Average Delay                     |       |  | 170.9                |
| Intersection Capacity Utilization | 90.5% |  | ICU Level of Service |
| Analysis Period (min)             | 15    |  | E                    |

# HCM Unsignalized Intersection Capacity Analysis

49: US 50 #7 & 3247

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    | ↗    | ↕    |      | ↖    | ↕    |      |      | ↕    |      |      | ↕    |      |
| Volume (veh/h)         | 0    | 2854 | 9    | 0    | 1964 | 9    | 4    | 0    | 9    | 9    | 0    | 9    |
| Sign Control           |      | Free |      |      | Free |      |      | Stop |      |      | Stop |      |
| Grade                  |      | 0%   |      |      | 0%   |      |      | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 0    | 3136 | 10   | 0    | 2158 | 10   | 4    | 0    | 10   | 10   | 0    | 10   |
| 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 | 2168 |      |      | 3146 |      |      | 4230 | 5309 | 1573 | 3741 | 5309 | 1084 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |      |      |      |      |      |      |
| vCu, unblocked vol     | 2168 |      |      | 3146 |      |      | 4230 | 5309 | 1573 | 3741 | 5309 | 1084 |
| tC, single (s)         | 4.2  |      |      | 4.2  |      |      | 7.6  | 6.6  | 7.0  | 7.6  | 6.6  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      | 2.2  |      |      | 3.6  | 4.0  | 3.4  | 3.6  | 4.0  | 3.4  |
| p0 queue free %        | 100  |      |      | 100  |      |      | 0    | 100  | 90   | 0    | 100  | 95   |
| cM capacity (veh/h)    | 233  |      |      | 93   |      |      | 1    | 0    | 96   | 1    | 0    | 207  |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 |
|------------------------|------|------|------|------|------|------|------|------|
| Volume Total           | 0    | 2091 | 1055 | 0    | 1439 | 729  | 14   | 20   |
| Volume Left            | 0    | 0    | 0    | 0    | 0    | 0    | 4    | 10   |
| Volume Right           | 0    | 0    | 10   | 0    | 0    | 10   | 10   | 10   |
| cSH                    | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 2    | 3    |
| Volume to Capacity     | 0.00 | 1.23 | 0.62 | 0.00 | 0.85 | 0.43 | 8.22 | 7.78 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 0    | 0    | 0    | Err  | Err  |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | Err  | Err  |
| Lane LOS               |      |      |      |      |      |      | F    | F    |
| Approach Delay (s)     | 0.0  |      |      | 0.0  |      |      | Err  | Err  |
| Approach LOS           |      |      |      |      |      |      | F    | F    |

## Intersection Summary

|                                   |       |
|-----------------------------------|-------|
| Average Delay                     | 63.7  |
| Intersection Capacity Utilization | 89.2% |
| ICU Level of Service              | E     |
| Analysis Period (min)             | 15    |



# HCM Unsignalized Intersection Capacity Analysis

50: US 50 #7 & 1st St

11/5/2008



| Movement               | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↑↑   | ↑    | ↓    | ↑↑   | ↓    |      |
| Volume (veh/h)         | 2918 | 38   | 4    | 2002 | 51   | 30   |
| Sign Control           | Free |      |      | Free | Stop |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 3138 | 41   | 4    | 2153 | 55   | 32   |
| 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 |      |      | 3178 |      | 4223 | 1569 |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     |      |      | 3178 |      | 4223 | 1569 |
| tC, single (s)         |      |      | 4.2  |      | 6.9  | 7.0  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 |      |      | 2.2  |      | 3.6  | 3.4  |
| p0 queue free %        |      |      | 95   |      | 0    | 67   |
| cM capacity (veh/h)    |      |      | 90   |      | 1    | 97   |

| Direction, Lane #      | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1  |
|------------------------|------|------|------|------|------|------|-------|
| Volume Total           | 1569 | 1569 | 41   | 4    | 1076 | 1076 | 87    |
| Volume Left            | 0    | 0    | 0    | 4    | 0    | 0    | 55    |
| Volume Right           | 0    | 0    | 41   | 0    | 0    | 0    | 32    |
| cSH                    | 1700 | 1700 | 1700 | 90   | 1700 | 1700 | 2     |
| Volume to Capacity     | 0.92 | 0.92 | 0.02 | 0.05 | 0.63 | 0.63 | 44.26 |
| Queue Length 95th (ft) | 0    | 0    | 0    | 4    | 0    | 0    | Err   |
| Control Delay (s)      | 0.0  | 0.0  | 0.0  | 46.8 | 0.0  | 0.0  | Err   |
| Lane LOS               |      |      |      | E    |      |      | F     |
| Approach Delay (s)     | 0.0  |      |      | 0.1  |      | Err  |       |
| Approach LOS           |      |      |      |      |      | F    |       |

| Intersection Summary              |       |  |                        |
|-----------------------------------|-------|--|------------------------|
| Average Delay                     |       |  | 160.6                  |
| Intersection Capacity Utilization | 92.0% |  | ICU Level of Service F |
| Analysis Period (min)             |       |  | 15                     |

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Intersection Sign configuration not allowed in HCM analysis.

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Intersection Sign configuration not allowed in HCM analysis.

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Intersection Sign configuration not allowed in HCM analysis.

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# HCM Signalized Intersection Capacity Analysis

## 4: US 50 #1 & Unawweep Ave

11/5/2008



| Movement               | EBL  | EBT   | EBR   | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|-------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    | ↖↗   | ↑↑    | ↖     | ↗    | ↑↑    | ↖    |      | ↖     | ↗    |      | ↖    | ↗    |
| Volume (vph)           | 251  | 1496  | 5     | 1    | 803   | 0    | 39   | 11    | 8    | 8    | 0    | 192  |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 6.0   | 6.0   | 4.0  | 6.0   |      |      | 5.0   | 5.0  |      | 5.0  | 4.0  |
| Lane Util. Factor      | 0.97 | 0.95  | 1.00  | 1.00 | 0.95  |      |      | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Frt                    | 1.00 | 1.00  | 0.85  | 1.00 | 1.00  |      |      | 1.00  | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |      |      | 0.96  | 1.00 |      | 0.95 | 1.00 |
| Satd. Flow (prot)      | 3335 | 3438  | 1538  | 1719 | 3438  |      |      | 1741  | 1538 |      | 1719 | 1538 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |      |      | 0.77  | 1.00 |      | 0.72 | 1.00 |
| Satd. Flow (perm)      | 3335 | 3438  | 1538  | 1719 | 3438  |      |      | 1387  | 1538 |      | 1294 | 1538 |
| Peak-hour factor, PHF  | 0.94 | 0.94  | 0.94  | 0.94 | 0.94  | 0.94 | 0.94 | 0.94  | 0.94 | 0.94 | 0.94 | 0.94 |
| Growth Factor (vph)    | 121% | 211%  | 121%  | 121% | 213%  | 121% | 121% | 121%  | 121% | 121% | 121% | 121% |
| Adj. Flow (vph)        | 323  | 3358  | 6     | 1    | 1820  | 0    | 50   | 14    | 10   | 10   | 0    | 247  |
| RTOR Reduction (vph)   | 0    | 0     | 0     | 0    | 0     | 0    | 0    | 0     | 9    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 323  | 3358  | 6     | 1    | 1820  | 0    | 0    | 64    | 1    | 0    | 10   | 247  |
| Turn Type              | Prot |       | Perm  | Prot |       | Perm | Perm |       | Perm | Perm |      | Over |
| Protected Phases       | 1    | 6     |       | 5    | 2     |      |      | 4     |      |      | 4    | 1    |
| Permitted Phases       |      |       | 6     |      |       | 2    | 4    |       | 4    | 4    |      |      |
| Actuated Green, G (s)  | 38.5 | 110.5 | 110.5 | 4.0  | 76.0  |      |      | 10.5  | 10.5 |      | 10.5 | 38.5 |
| Effective Green, g (s) | 38.5 | 110.5 | 110.5 | 4.0  | 76.0  |      |      | 10.5  | 10.5 |      | 10.5 | 38.5 |
| Actuated g/C Ratio     | 0.28 | 0.79  | 0.79  | 0.03 | 0.54  |      |      | 0.08  | 0.08 |      | 0.08 | 0.28 |
| Clearance Time (s)     | 4.0  | 6.0   | 6.0   | 4.0  | 6.0   |      |      | 5.0   | 5.0  |      | 5.0  | 4.0  |
| Vehicle Extension (s)  | 3.0  | 5.0   | 5.0   | 2.5  | 3.5   |      |      | 3.0   | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     | 917  | 2714  | 1214  | 49   | 1866  |      |      | 104   | 115  |      | 97   | 423  |
| v/s Ratio Prot         | 0.10 | c0.98 |       | 0.00 | c0.53 |      |      |       |      |      |      | 0.16 |
| v/s Ratio Perm         |      |       | 0.00  |      |       |      |      | c0.05 | 0.00 |      | 0.01 |      |
| v/c Ratio              | 0.35 | 1.24  | 0.00  | 0.02 | 0.98  |      |      | 0.62  | 0.01 |      | 0.10 | 0.58 |
| Uniform Delay, d1      | 40.7 | 14.8  | 3.1   | 66.1 | 31.1  |      |      | 62.8  | 59.9 |      | 60.4 | 43.8 |
| Progression Factor     | 1.00 | 1.00  | 1.00  | 0.79 | 0.52  |      |      | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Incremental Delay, d2  | 1.1  | 110.1 | 0.0   | 0.5  | 12.5  |      |      | 10.3  | 0.0  |      | 0.5  | 5.8  |
| Delay (s)              | 41.8 | 124.9 | 3.1   | 53.0 | 28.7  |      |      | 73.1  | 59.9 |      | 60.8 | 49.6 |
| Level of Service       | D    | F     | A     | D    | C     |      |      | E     | E    |      | E    | D    |
| Approach Delay (s)     |      | 117.4 |       |      | 28.7  |      |      | 71.4  |      |      | 50.1 |      |
| Approach LOS           |      | F     |       |      | C     |      |      | E     |      |      | D    |      |

### Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 86.2   | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.14   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 11.0 |
| Intersection Capacity Utilization | 113.1% | ICU Level of Service | H    |
| Analysis Period (min)             | 15     |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 10: US 50 #1 & Palmer St

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|-------|-------|------|------|------|------|
| Lane Configurations    |       |       |      |       |       |      |       |       |      |      |      |      |
| Volume (vph)           | 6     | 1475  | 95   | 30    | 787   | 4    | 157   | 10    | 38   | 3    | 10   | 9    |
| 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  |      |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00 | 1.00  | 0.95  |      | 1.00  | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00  | 1.00  | 0.85 | 1.00  | 1.00  |      | 1.00  | 0.88  |      |      | 0.93 |      |
| Flt Protected          | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |      | 0.95  | 1.00  |      |      | 0.99 |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538 | 1719  | 3436  |      | 1719  | 1596  |      |      | 1673 |      |
| Flt Permitted          | 0.09  | 1.00  | 1.00 | 0.04  | 1.00  |      | 0.55  | 1.00  |      |      | 0.93 |      |
| Satd. Flow (perm)      | 165   | 3438  | 1538 | 74    | 3436  |      | 992   | 1596  |      |      | 1563 |      |
| Peak-hour factor, PHF  | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 |
| Growth Factor (vph)    | 213%  | 213%  | 125% | 125%  | 213%  | 213% | 125%  | 125%  | 125% | 213% | 125% | 213% |
| Adj. Flow (vph)        | 14    | 3415  | 129  | 41    | 1822  | 9    | 213   | 14    | 52   | 7    | 14   | 21   |
| RTOR Reduction (vph)   | 0     | 0     | 17   | 0     | 0     | 0    | 0     | 43    | 0    | 0    | 20   | 0    |
| Lane Group Flow (vph)  | 14    | 3415  | 112  | 41    | 1831  | 0    | 213   | 23    | 0    | 0    | 22   | 0    |
| Turn Type              | pm+pt |       | Perm | pm+pt |       |      | pm+pt |       |      |      | Perm |      |
| Protected Phases       | 5     | 2     |      | 1     | 6     |      | 3     | 8     |      |      |      | 4    |
| Permitted Phases       | 2     |       | 2    | 6     |       |      | 8     |       |      | 4    |      |      |
| Actuated Green, G (s)  | 98.9  | 98.9  | 98.9 | 102.7 | 102.7 |      | 17.7  | 17.7  |      |      | 7.7  |      |
| Effective Green, g (s) | 98.9  | 98.9  | 98.9 | 102.7 | 102.7 |      | 17.7  | 17.7  |      |      | 7.7  |      |
| Actuated g/C Ratio     | 0.71  | 0.71  | 0.71 | 0.73  | 0.73  |      | 0.13  | 0.13  |      |      | 0.06 |      |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0  | 6.0   | 6.0   |      | 6.0   | 6.0   |      |      | 6.0  |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 134   | 2429  | 1086 | 118   | 2521  |      | 146   | 202   |      |      | 86   |      |
| v/s Ratio Prot         | 0.00  | c0.99 |      | 0.01  | c0.53 |      | c0.04 | 0.01  |      |      |      |      |
| v/s Ratio Perm         | 0.07  |       | 0.07 | 0.24  |       |      | c0.14 |       |      |      | 0.01 |      |
| v/c Ratio              | 0.10  | 1.41  | 0.10 | 0.35  | 0.73  |      | 1.46  | 0.11  |      |      | 0.26 |      |
| Uniform Delay, d1      | 16.9  | 20.5  | 6.5  | 66.3  | 10.6  |      | 62.4  | 54.2  |      |      | 63.4 |      |
| Progression Factor     | 0.39  | 0.44  | 0.15 | 1.30  | 1.48  |      | 1.00  | 1.00  |      |      | 1.00 |      |
| Incremental Delay, d2  | 0.0   | 182.9 | 0.0  | 1.0   | 1.1   |      | 240.2 | 0.3   |      |      | 1.6  |      |
| Delay (s)              | 6.7   | 192.0 | 1.0  | 86.9  | 16.9  |      | 302.6 | 54.5  |      |      | 65.0 |      |
| Level of Service       | A     | F     | A    | F     | B     |      | F     | D     |      |      | E    |      |
| Approach Delay (s)     |       | 184.3 |      |       | 18.4  |      |       | 243.9 |      |      | 65.0 |      |
| Approach LOS           |       | F     |      |       | B     |      |       | F     |      |      | E    |      |

### Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 132.3  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.39   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 114.4% | ICU Level of Service | H    |
| Analysis Period (min)             | 15     |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 13: US 50 #1 & 27 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations    | ↘     | ↑↑    | ↗    | ↘     | ↑↑    | ↗    | ↘     | ↗     |      | ↘     | ↗     |      |
| Volume (vph)           | 66    | 1323  | 75   | 27    | 675   | 50   | 87    | 36    | 20   | 85    | 41    | 8    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 7.0   | 7.0  | 4.0   | 7.0   | 7.0  | 5.0   | 5.5   |      | 5.0   | 5.5   |      |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00 | 1.00  | 0.95  | 1.00 | 1.00  | 1.00  |      | 1.00  | 1.00  |      |
| Frt                    | 1.00  | 1.00  | 0.85 | 1.00  | 1.00  | 0.85 | 1.00  | 0.95  |      | 1.00  | 0.98  |      |
| Flt Protected          | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  | 1.00 | 0.95  | 1.00  |      | 0.95  | 1.00  |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538 | 1719  | 3438  | 1538 | 1719  | 1713  |      | 1719  | 1765  |      |
| Flt Permitted          | 0.06  | 1.00  | 1.00 | 0.05  | 1.00  | 1.00 | 1.00  | 1.00  |      | 1.00  | 1.00  |      |
| Satd. Flow (perm)      | 107   | 3438  | 1538 | 89    | 3438  | 1538 | 1810  | 1713  |      | 1810  | 1765  |      |
| Peak-hour factor, PHF  | 0.94  | 0.94  | 0.94 | 0.94  | 0.94  | 0.94 | 0.94  | 0.94  | 0.94 | 0.94  | 0.94  | 0.94 |
| Growth Factor (vph)    | 236%  | 213%  | 236% | 236%  | 228%  | 236% | 236%  | 236%  | 236% | 236%  | 236%  | 236% |
| Adj. Flow (vph)        | 166   | 2998  | 188  | 68    | 1637  | 126  | 218   | 90    | 50   | 213   | 103   | 20   |
| RTOR Reduction (vph)   | 0     | 0     | 23   | 0     | 0     | 19   | 0     | 14    | 0    | 0     | 5     | 0    |
| Lane Group Flow (vph)  | 166   | 2998  | 165  | 68    | 1637  | 107  | 218   | 126   | 0    | 213   | 118   | 0    |
| Turn Type              | pm+pt |       | Perm | pm+pt |       | Perm | pm+pt |       |      | pm+pt |       |      |
| Protected Phases       | 1     | 6     |      | 5     | 2     |      | 7     | 4     |      | 3     | 8     |      |
| Permitted Phases       | 6     |       | 6    | 2     |       | 2    | 4     |       |      | 8     |       |      |
| Actuated Green, G (s)  | 96.0  | 96.0  | 96.0 | 88.0  | 85.0  | 85.0 | 9.0   | 8.5   |      | 7.5   | 7.5   |      |
| Effective Green, g (s) | 96.0  | 96.0  | 96.0 | 88.0  | 85.0  | 85.0 | 9.0   | 8.5   |      | 7.5   | 7.5   |      |
| Actuated g/C Ratio     | 0.69  | 0.69  | 0.69 | 0.63  | 0.61  | 0.61 | 0.06  | 0.06  |      | 0.05  | 0.05  |      |
| Clearance Time (s)     | 4.0   | 7.0   | 7.0  | 4.0   | 7.0   | 7.0  | 5.0   | 5.5   |      | 5.0   | 5.5   |      |
| Vehicle Extension (s)  | 2.2   | 2.2   | 2.2  | 2.2   | 2.2   | 2.2  | 3.0   | 3.0   |      | 3.0   | 3.0   |      |
| Lane Grp Cap (vph)     | 281   | 2357  | 1055 | 137   | 2087  | 934  | 116   | 104   |      | 97    | 95    |      |
| v/s Ratio Prot         | 0.08  | c0.87 |      | 0.02  | c0.48 |      | 0.11  | 0.07  |      | 0.11  | 0.07  |      |
| v/s Ratio Perm         | 0.33  |       | 0.11 | 0.29  |       | 0.07 | c0.02 |       |      | c0.01 |       |      |
| v/c Ratio              | 0.59  | 1.27  | 0.16 | 0.50  | 0.78  | 0.11 | 1.88  | 1.21  |      | 2.20  | 1.24  |      |
| Uniform Delay, d1      | 33.9  | 22.0  | 7.7  | 60.0  | 20.6  | 11.6 | 65.3  | 65.8  |      | 67.0  | 66.2  |      |
| Progression Factor     | 1.38  | 0.23  | 0.02 | 0.50  | 0.28  | 0.14 | 1.00  | 1.00  |      | 1.00  | 1.00  |      |
| Incremental Delay, d2  | 0.8   | 122.7 | 0.0  | 11.2  | 2.8   | 0.2  | 426.5 | 155.5 |      | 570.3 | 171.9 |      |
| Delay (s)              | 47.7  | 127.8 | 0.2  | 41.5  | 8.6   | 1.9  | 491.7 | 221.2 |      | 637.3 | 238.2 |      |
| Level of Service       | D     | F     | A    | D     | A     | A    | F     | F     |      | F     | F     |      |
| Approach Delay (s)     |       | 116.6 |      |       | 9.3   |      |       | 385.9 |      |       | 491.2 |      |
| Approach LOS           |       | F     |      |       | A     |      |       | F     |      |       | F     |      |

### Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 121.0  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.25   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 117.8% | ICU Level of Service | H    |
| Analysis Period (min)             | 15     |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 18: US 50 WB #3 & 27 3/4 Rd

11/5/2008



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|-------|-------|------|------|-------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↙     | ↕     | ↗    |      | ↖     |      |      | ↕     | ↘    |
| Volume (vph)           | 0    | 0    | 0    | 0     | 434   | 49   | 1    | 84    | 0    | 0    | 119   | 32   |
| 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      |      |      |      |       | 0.95  | 1.00 |      | 1.00  |      |      | 1.00  |      |
| Frt                    |      |      |      |       | 1.00  | 0.85 |      | 1.00  |      |      | 0.97  |      |
| Flt Protected          |      |      |      |       | 1.00  | 1.00 |      | 1.00  |      |      | 1.00  |      |
| Satd. Flow (prot)      |      |      |      |       | 3438  | 1538 |      | 1808  |      |      | 1758  |      |
| Flt Permitted          |      |      |      |       | 1.00  | 1.00 |      | 0.65  |      |      | 1.00  |      |
| Satd. Flow (perm)      |      |      |      |       | 3438  | 1538 |      | 1177  |      |      | 1758  |      |
| Peak-hour factor, PHF  | 0.95 | 0.95 | 0.95 | 0.95  | 0.95  | 0.95 | 0.95 | 0.95  | 0.95 | 0.95 | 0.95  | 0.95 |
| Growth Factor (vph)    | 100% | 100% | 100% | 274%  | 274%  | 274% | 274% | 274%  | 274% | 274% | 274%  | 274% |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0     | 1252  | 141  | 3    | 242   | 0    | 0    | 343   | 92   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0     | 0     | 68   | 0    | 0     | 0    | 0    | 7     | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0     | 1252  | 73   | 0    | 245   | 0    | 0    | 428   | 0    |
| Turn Type              |      |      |      | pm+pt |       | Perm |      | Perm  |      |      |       |      |
| Protected Phases       |      |      |      | 5     | 6     |      |      | 1 8   |      |      | 4     |      |
| Permitted Phases       |      |      |      | 6     |       | 6    |      | 1 8   |      |      |       |      |
| Actuated Green, G (s)  |      |      |      |       | 72.0  | 72.0 |      | 40.0  |      |      | 32.0  |      |
| Effective Green, g (s) |      |      |      |       | 72.0  | 72.0 |      | 40.0  |      |      | 32.0  |      |
| Actuated g/C Ratio     |      |      |      |       | 0.51  | 0.51 |      | 0.29  |      |      | 0.23  |      |
| Clearance Time (s)     |      |      |      |       | 6.0   | 6.0  |      |       |      |      | 6.0   |      |
| Vehicle Extension (s)  |      |      |      |       | 3.0   | 3.0  |      |       |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      |      |      |       | 1768  | 791  |      | 336   |      |      | 402   |      |
| v/s Ratio Prot         |      |      |      |       | c0.36 |      |      |       |      |      | c0.24 |      |
| v/s Ratio Perm         |      |      |      |       |       | 0.05 |      | c0.21 |      |      |       |      |
| v/c Ratio              |      |      |      |       | 0.71  | 0.09 |      | 0.73  |      |      | 1.06  |      |
| Uniform Delay, d1      |      |      |      |       | 26.0  | 17.3 |      | 45.1  |      |      | 54.0  |      |
| Progression Factor     |      |      |      |       | 0.09  | 0.00 |      | 1.91  |      |      | 1.00  |      |
| Incremental Delay, d2  |      |      |      |       | 0.2   | 0.0  |      | 7.6   |      |      | 63.1  |      |
| Delay (s)              |      |      |      |       | 2.7   | 0.1  |      | 94.0  |      |      | 117.1 |      |
| Level of Service       |      |      |      |       | A     | A    |      | F     |      |      | F     |      |
| Approach Delay (s)     |      | 0.0  |      |       | 2.4   |      |      | 94.0  |      |      | 117.1 |      |
| Approach LOS           |      | A    |      |       | A     |      |      | F     |      |      | F     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 37.3  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.81  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 28.0 |
| Intersection Capacity Utilization | 65.4% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 19: US 50 EB #2 & 27 3/4 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |       |       |      |      |      |      |      |      |      |      |       |      |
| Volume (vph)           | 83    | 678   | 2    | 0    | 0    | 0    | 0    | 2    | 10   | 113  | 6     | 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  |      |      | 6.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00 |      |      |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    | 1.00  | 1.00  | 0.85 |      |      |      |      | 0.89 |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  | 1.00 |      |      |      |      | 1.00 |      |      | 0.95  |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538 |      |      |      |      | 1607 |      |      | 1727  |      |
| Flt Permitted          | 0.95  | 1.00  | 1.00 |      |      |      |      | 1.00 |      |      | 0.54  |      |
| Satd. Flow (perm)      | 1719  | 3438  | 1538 |      |      |      |      | 1607 |      |      | 980   |      |
| Peak-hour factor, PHF  | 0.95  | 0.95  | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95  | 0.95 |
| Growth Factor (vph)    | 274%  | 274%  | 274% | 100% | 100% | 100% | 274% | 274% | 274% | 274% | 274%  | 274% |
| Adj. Flow (vph)        | 239   | 1955  | 6    | 0    | 0    | 0    | 0    | 6    | 29   | 326  | 17    | 0    |
| RTOR Reduction (vph)   | 0     | 0     | 2    | 0    | 0    | 0    | 0    | 22   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 239   | 1955  | 4    | 0    | 0    | 0    | 0    | 13   | 0    | 0    | 343   | 0    |
| Turn Type              | pm+pt |       | Perm |      |      |      |      |      |      | Perm |       |      |
| Protected Phases       | 1     | 2     |      |      |      |      |      | 8    |      |      | 4 5   |      |
| Permitted Phases       | 2     |       | 2    |      |      |      |      |      |      | 4 5  |       |      |
| Actuated Green, G (s)  | 80.0  | 72.0  | 72.0 |      |      |      |      | 32.0 |      |      | 42.0  |      |
| Effective Green, g (s) | 80.0  | 72.0  | 72.0 |      |      |      |      | 32.0 |      |      | 42.0  |      |
| Actuated g/C Ratio     | 0.57  | 0.51  | 0.51 |      |      |      |      | 0.23 |      |      | 0.30  |      |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0  |      |      |      |      | 6.0  |      |      |       |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0  |      |      |      |      | 3.0  |      |      |       |      |
| Lane Grp Cap (vph)     | 1056  | 1768  | 791  |      |      |      |      | 367  |      |      | 294   |      |
| v/s Ratio Prot         | c0.01 | c0.57 |      |      |      |      |      | 0.01 |      |      |       |      |
| v/s Ratio Perm         | 0.13  |       | 0.00 |      |      |      |      |      |      |      | c0.35 |      |
| v/c Ratio              | 0.23  | 1.11  | 0.00 |      |      |      |      | 0.03 |      |      | 1.17  |      |
| Uniform Delay, d1      | 14.9  | 34.0  | 16.6 |      |      |      |      | 42.0 |      |      | 49.0  |      |
| Progression Factor     | 1.19  | 1.02  | 0.83 |      |      |      |      | 1.00 |      |      | 0.62  |      |
| Incremental Delay, d2  | 0.0   | 50.7  | 0.0  |      |      |      |      | 0.0  |      |      | 78.7  |      |
| Delay (s)              | 17.7  | 85.4  | 13.7 |      |      |      |      | 42.0 |      |      | 109.3 |      |
| Level of Service       | B     | F     | B    |      |      |      |      | D    |      |      | F     |      |
| Approach Delay (s)     |       | 77.8  |      |      | 0.0  |      |      | 42.0 |      |      | 109.3 |      |
| Approach LOS           |       | E     |      |      | A    |      |      | D    |      |      | F     |      |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 81.5  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.02  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 86.0% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

23: US 50 WB #3 & 28 1/2 Rd

11/5/2008



| Movement                          | EBL  | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations               |      |      |      | ↙     | ↕     | ↗    |      | ↖     |      |      | ↘    | ↗    |
| Volume (vph)                      | 0    | 0    | 0    | 34    | 1457  | 4    | 32   | 116   | 0    | 0    | 14   | 13   |
| 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  |      |
| Lane Util. Factor                 |      |      |      | 1.00  | 0.95  | 1.00 |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |      |      |      | 1.00  | 1.00  | 0.85 |      | 1.00  |      |      | 0.94 |      |
| Fl <sub>t</sub> Protected         |      |      |      | 0.95  | 1.00  | 1.00 |      | 0.99  |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |      | 1719  | 3438  | 1538 |      | 1790  |      |      | 1694 |      |
| Fl <sub>t</sub> Permitted         |      |      |      | 0.95  | 1.00  | 1.00 |      | 0.23  |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |      | 1719  | 3438  | 1538 |      | 420   |      |      | 1694 |      |
| Peak-hour factor, PHF             | 0.94 | 0.94 | 0.94 | 0.94  | 0.94  | 0.94 | 0.94 | 0.94  | 0.94 | 0.94 | 0.94 | 0.94 |
| Growth Factor (vph)               | 100% | 100% | 100% | 131%  | 100%  | 131% | 131% | 131%  | 131% | 131% | 131% | 131% |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 47    | 1550  | 6    | 45   | 162   | 0    | 0    | 20   | 18   |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0     | 0     | 2    | 0    | 0     | 0    | 0    | 16   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 47    | 1550  | 4    | 0    | 207   | 0    | 0    | 22   | 0    |
| Turn Type                         |      |      |      | pm+pt |       | Perm |      | Perm  |      |      |      |      |
| Protected Phases                  |      |      |      | 5     | 6     |      |      | 1 8   |      |      | 4    |      |
| Permitted Phases                  |      |      |      | 6     |       | 6    |      | 1 8   |      |      |      |      |
| Actuated Green, G (s)             |      |      |      | 61.0  | 57.8  | 57.8 |      | 55.0  |      |      | 18.0 |      |
| Effective Green, g (s)            |      |      |      | 61.0  | 57.8  | 57.8 |      | 55.0  |      |      | 18.0 |      |
| Actuated g/C Ratio                |      |      |      | 0.44  | 0.41  | 0.41 |      | 0.39  |      |      | 0.13 |      |
| Clearance Time (s)                |      |      |      | 6.0   | 6.0   | 6.0  |      |       |      |      | 6.0  |      |
| Vehicle Extension (s)             |      |      |      | 3.0   | 3.0   | 3.0  |      |       |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |      | 749   | 1419  | 635  |      | 165   |      |      | 218  |      |
| v/s Ratio Prot                    |      |      |      | c0.00 | c0.45 |      |      |       |      |      | 0.01 |      |
| v/s Ratio Perm                    |      |      |      | 0.03  |       | 0.00 |      | c0.49 |      |      |      |      |
| v/c Ratio                         |      |      |      | 0.06  | 1.09  | 0.01 |      | 1.25  |      |      | 0.10 |      |
| Uniform Delay, d <sub>1</sub>     |      |      |      | 22.9  | 41.1  | 24.2 |      | 42.5  |      |      | 53.9 |      |
| Progression Factor                |      |      |      | 0.84  | 0.78  | 0.47 |      | 1.46  |      |      | 1.00 |      |
| Incremental Delay, d <sub>2</sub> |      |      |      | 0.0   | 42.9  | 0.0  |      | 154.2 |      |      | 0.2  |      |
| Delay (s)                         |      |      |      | 19.2  | 74.7  | 11.4 |      | 216.3 |      |      | 54.1 |      |
| Level of Service                  |      |      |      | B     | E     | B    |      | F     |      |      | D    |      |
| Approach Delay (s)                |      | 0.0  |      |       | 72.8  |      |      | 216.3 |      |      | 54.1 |      |
| Approach LOS                      |      | A    |      |       | E     |      |      | F     |      |      | D    |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 88.5  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.14  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 67.3% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

24: US 50 EB #2 & 28 1/2 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|------|------|------|------|-------|------|------|-------|------|
| Lane Configurations    |       |       |      |      |      |      |      |       |      |      |       |      |
| Volume (vph)           | 96    | 2050  | 18   | 0    | 0    | 0    | 0    | 52    | 4    | 5    | 43    | 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   |      |      | 6.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00 |      |      |      |      | 1.00  |      |      | 1.00  |      |
| Frt                    | 1.00  | 1.00  | 0.85 |      |      |      |      | 0.99  |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  | 1.00 |      |      |      |      | 1.00  |      |      | 0.99  |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538 |      |      |      |      | 1791  |      |      | 1800  |      |
| Flt Permitted          | 0.95  | 1.00  | 1.00 |      |      |      |      | 1.00  |      |      | 0.97  |      |
| Satd. Flow (perm)      | 1719  | 3438  | 1538 |      |      |      |      | 1791  |      |      | 1762  |      |
| Peak-hour factor, PHF  | 0.94  | 0.94  | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94  | 0.94 | 0.94 | 0.94  | 0.94 |
| Growth Factor (vph)    | 131%  | 100%  | 131% | 100% | 100% | 100% | 131% | 131%  | 131% | 131% | 131%  | 131% |
| Adj. Flow (vph)        | 134   | 2181  | 25   | 0    | 0    | 0    | 0    | 72    | 6    | 7    | 60    | 0    |
| RTOR Reduction (vph)   | 0     | 0     | 8    | 0    | 0    | 0    | 0    | 2     | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 134   | 2181  | 17   | 0    | 0    | 0    | 0    | 76    | 0    | 0    | 67    | 0    |
| Turn Type              | pm+pt |       | Perm |      |      |      |      |       |      | Perm |       |      |
| Protected Phases       | 1     | 2     |      |      |      |      |      | 8     |      |      | 4 5   |      |
| Permitted Phases       | 2     |       | 2    |      |      |      |      |       |      | 4 5  |       |      |
| Actuated Green, G (s)  | 94.8  | 57.8  | 57.8 |      |      |      |      | 18.0  |      |      | 27.2  |      |
| Effective Green, g (s) | 94.8  | 57.8  | 57.8 |      |      |      |      | 18.0  |      |      | 27.2  |      |
| Actuated g/C Ratio     | 0.68  | 0.41  | 0.41 |      |      |      |      | 0.13  |      |      | 0.19  |      |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0  |      |      |      |      | 6.0   |      |      |       |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0  |      |      |      |      | 3.0   |      |      |       |      |
| Lane Grp Cap (vph)     | 1238  | 1419  | 635  |      |      |      |      | 230   |      |      | 342   |      |
| v/s Ratio Prot         | c0.03 | c0.63 |      |      |      |      |      | c0.04 |      |      |       |      |
| v/s Ratio Perm         | 0.05  |       | 0.01 |      |      |      |      |       |      |      | c0.04 |      |
| v/c Ratio              | 0.11  | 1.54  | 0.03 |      |      |      |      | 0.33  |      |      | 0.20  |      |
| Uniform Delay, d1      | 7.9   | 41.1  | 24.4 |      |      |      |      | 55.5  |      |      | 47.2  |      |
| Progression Factor     | 0.82  | 0.63  | 0.32 |      |      |      |      | 1.00  |      |      | 1.29  |      |
| Incremental Delay, d2  | 0.0   | 242.0 | 0.0  |      |      |      |      | 0.9   |      |      | 0.3   |      |
| Delay (s)              | 6.5   | 267.8 | 7.9  |      |      |      |      | 56.4  |      |      | 61.5  |      |
| Level of Service       | A     | F     | A    |      |      |      |      | E     |      |      | E     |      |
| Approach Delay (s)     |       | 250.1 |      |      | 0.0  |      |      | 56.4  |      |      | 61.5  |      |
| Approach LOS           |       | F     |      |      | A    |      |      | E     |      |      | E     |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 238.9 | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 0.82  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 75.1% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group



# HCM Signalized Intersection Capacity Analysis

## 33: US 50 WB #3 & 29 Rd

11/5/2008



| Movement               | WBT    | WBR   | SBT  | SBR2  | NEL   |
|------------------------|--------|-------|------|-------|-------|
| Lane Configurations    | ↑↑     | ↑     | ↑↑   | ↑     | ↑↑    |
| Volume (vph)           | 1330   | 374   | 486  | 558   | 609   |
| Ideal Flow (vphpl)     | 1900   | 1900  | 1900 | 1900  | 1900  |
| Total Lost time (s)    | 9.0    | 6.5   | 6.5  | 6.5   | 6.0   |
| Lane Util. Factor      | 0.95   | 1.00  | 0.95 | 1.00  | 0.97  |
| Frt                    | 1.00   | 0.85  | 1.00 | 0.85  | 1.00  |
| Flt Protected          | 1.00   | 1.00  | 1.00 | 1.00  | 0.95  |
| Satd. Flow (prot)      | 3438   | 1538  | 3438 | 1538  | 3335  |
| Flt Permitted          | 1.00   | 1.00  | 1.00 | 1.00  | 0.95  |
| Satd. Flow (perm)      | 3438   | 1538  | 3438 | 1538  | 3335  |
| Peak-hour factor, PHF  | 0.93   | 0.93  | 0.93 | 0.93  | 0.93  |
| Adj. Flow (vph)        | 1430   | 402   | 523  | 600   | 655   |
| RTOR Reduction (vph)   | 0      | 1     | 0    | 79    | 0     |
| Lane Group Flow (vph)  | 1430   | 401   | 523  | 521   | 655   |
| Turn Type              | custom |       | Perm |       |       |
| Protected Phases       | 6      |       | 4    |       | 5     |
| Permitted Phases       |        | 4 6   |      | 4     |       |
| Actuated Green, G (s)  | 55.0   | 104.5 | 40.5 | 40.5  | 23.0  |
| Effective Green, g (s) | 55.0   | 95.5  | 40.5 | 40.5  | 23.0  |
| Actuated g/C Ratio     | 0.39   | 0.68  | 0.29 | 0.29  | 0.16  |
| Clearance Time (s)     | 9.0    |       | 6.5  | 6.5   | 6.0   |
| Vehicle Extension (s)  | 4.0    |       | 6.0  | 6.0   | 2.0   |
| Lane Grp Cap (vph)     | 1351   | 1049  | 995  | 445   | 548   |
| v/s Ratio Prot         | c0.42  |       | 0.15 |       | c0.20 |
| v/s Ratio Perm         |        | 0.26  |      | c0.34 |       |
| v/c Ratio              | 1.06   | 0.38  | 0.53 | 1.17  | 1.20  |
| Uniform Delay, d1      | 42.5   | 9.6   | 41.7 | 49.7  | 58.5  |
| Progression Factor     | 0.65   | 0.55  | 1.00 | 1.00  | 1.26  |
| Incremental Delay, d2  | 36.1   | 0.4   | 1.3  | 98.6  | 89.6  |
| Delay (s)              | 63.7   | 5.6   | 43.0 | 148.3 | 163.5 |
| Level of Service       | E      | A     | D    | F     | F     |
| Approach Delay (s)     | 50.9   |       | 99.3 |       | 163.5 |
| Approach LOS           | D      |       | F    |       | F     |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 86.4  | HCM Level of Service | F    |
| HCM Volume to Capacity ratio      | 1.12  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 21.5 |
| Intersection Capacity Utilization | 85.5% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 34: US 50 EB #2 & 29 Rd

11/5/2008



| Movement                          | EBL  | EBT   | WBT   | WBR  | SBL                  | SBR  |
|-----------------------------------|------|-------|-------|------|----------------------|------|
| Lane Configurations               |      | ↑↑    |       |      | ↑↑                   |      |
| Volume (vph)                      | 0    | 1838  | 0     | 0    | 486                  | 0    |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 |
| Total Lost time (s)               |      | 6.0   |       |      | 6.5                  |      |
| Lane Util. Factor                 |      | 0.95  |       |      | 0.97                 |      |
| Fr <sub>t</sub>                   |      | 1.00  |       |      | 1.00                 |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |       |      | 0.95                 |      |
| Satd. Flow (prot)                 |      | 3438  |       |      | 3335                 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |       |      | 0.95                 |      |
| Satd. Flow (perm)                 |      | 3438  |       |      | 3335                 |      |
| Peak-hour factor, PHF             | 0.93 | 0.93  | 0.93  | 0.93 | 0.93                 | 0.93 |
| Adj. Flow (vph)                   | 0    | 1976  | 0     | 0    | 523                  | 0    |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 0    | 19                   | 0    |
| Lane Group Flow (vph)             | 0    | 1976  | 0     | 0    | 504                  | 0    |
| Turn Type                         |      |       |       |      |                      |      |
| Protected Phases                  |      | 2     |       |      | 4                    |      |
| Permitted Phases                  |      |       |       |      |                      |      |
| Actuated Green, G (s)             |      | 87.0  |       |      | 40.5                 |      |
| Effective Green, g (s)            |      | 87.0  |       |      | 40.5                 |      |
| Actuated g/C Ratio                |      | 0.62  |       |      | 0.29                 |      |
| Clearance Time (s)                |      | 6.0   |       |      | 6.5                  |      |
| Vehicle Extension (s)             |      | 3.0   |       |      | 6.0                  |      |
| Lane Grp Cap (vph)                |      | 2136  |       |      | 965                  |      |
| v/s Ratio Prot                    |      | c0.57 |       |      | c0.15                |      |
| v/s Ratio Perm                    |      |       |       |      |                      |      |
| v/c Ratio                         |      | 0.93  |       |      | 0.52                 |      |
| Uniform Delay, d <sub>1</sub>     |      | 23.6  |       |      | 41.6                 |      |
| Progression Factor                |      | 0.35  |       |      | 0.02                 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.9   |       |      | 1.1                  |      |
| Delay (s)                         |      | 9.2   |       |      | 1.8                  |      |
| Level of Service                  |      | A     |       |      | A                    |      |
| Approach Delay (s)                |      | 9.2   | 0.0   |      | 1.8                  |      |
| Approach LOS                      |      | A     | A     |      | A                    |      |
| <b>Intersection Summary</b>       |      |       |       |      |                      |      |
| HCM Average Control Delay         |      |       | 7.6   |      | HCM Level of Service | A    |
| HCM Volume to Capacity ratio      |      |       | 0.80  |      |                      |      |
| Actuated Cycle Length (s)         |      |       | 140.0 |      | Sum of lost time (s) | 12.5 |
| Intersection Capacity Utilization |      |       | 75.1% |      | ICU Level of Service | D    |
| Analysis Period (min)             |      |       | 15    |      |                      |      |
| c Critical Lane Group             |      |       |       |      |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 35: US 50 WB #3 & Sundance Dr

11/5/2008



| Movement                          | EBT  | EBR  | WBL  | WBT   | NBL   | NBR  |
|-----------------------------------|------|------|------|-------|-------|------|
| Lane Configurations               |      |      |      | ↑↑    | ↑↑    |      |
| Volume (vph)                      | 0    | 0    | 0    | 1900  | 55    | 0    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)               |      |      |      | 6.0   | 6.0   |      |
| Lane Util. Factor                 |      |      |      | 0.95  | 0.97  |      |
| Fr <sub>t</sub>                   |      |      |      | 1.00  | 1.00  |      |
| Fl <sub>t</sub> Protected         |      |      |      | 1.00  | 0.95  |      |
| Satd. Flow (prot)                 |      |      |      | 3438  | 3335  |      |
| Fl <sub>t</sub> Permitted         |      |      |      | 1.00  | 0.95  |      |
| Satd. Flow (perm)                 |      |      |      | 3438  | 3335  |      |
| Peak-hour factor, PHF             | 0.89 | 0.89 | 0.89 | 0.89  | 0.89  | 0.89 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 2135  | 62    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0     | 21    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 2135  | 41    | 0    |
| Turn Type                         |      |      |      |       |       |      |
| Protected Phases                  |      |      |      | 6     | 5 8   |      |
| Permitted Phases                  |      |      |      |       |       |      |
| Actuated Green, G (s)             |      |      |      | 103.3 | 24.7  |      |
| Effective Green, g (s)            |      |      |      | 103.3 | 24.7  |      |
| Actuated g/C Ratio                |      |      |      | 0.74  | 0.18  |      |
| Clearance Time (s)                |      |      |      | 6.0   |       |      |
| Vehicle Extension (s)             |      |      |      | 3.0   |       |      |
| Lane Grp Cap (vph)                |      |      |      | 2537  | 588   |      |
| v/s Ratio Prot                    |      |      |      | c0.62 | c0.01 |      |
| v/s Ratio Perm                    |      |      |      |       |       |      |
| v/c Ratio                         |      |      |      | 0.84  | 0.07  |      |
| Uniform Delay, d <sub>1</sub>     |      |      |      | 12.7  | 48.1  |      |
| Progression Factor                |      |      |      | 2.17  | 0.21  |      |
| Incremental Delay, d <sub>2</sub> |      |      |      | 2.1   | 0.1   |      |
| Delay (s)                         |      |      |      | 29.7  | 10.2  |      |
| Level of Service                  |      |      |      | C     | B     |      |
| Approach Delay (s)                | 0.0  |      |      | 29.7  | 10.2  |      |
| Approach LOS                      | A    |      |      | C     | B     |      |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 29.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.69  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.5% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 36: Sundance Dr &

11/5/2008



| Movement               | EBL   | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|-------|------|------|------|-------|------|------|------|------|
| Lane Configurations    | ↖     |      |      | ↖     |      |      |      | ↑↑    |      |      |      |      |
| Volume (vph)           | 23    | 0    | 0    | 14    | 0    | 0    | 0    | 32    | 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   |      |      | 3.5   |      |      |      | 6.0   |      |      |      |      |
| Lane Util. Factor      | 1.00  |      |      | 1.00  |      |      |      | 0.95  |      |      |      |      |
| Frt                    | 1.00  |      |      | 1.00  |      |      |      | 1.00  |      |      |      |      |
| Flt Protected          | 0.95  |      |      | 0.95  |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)      | 1719  |      |      | 1719  |      |      |      | 3438  |      |      |      |      |
| Flt Permitted          | 0.95  |      |      | 0.95  |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)      | 1719  |      |      | 1719  |      |      |      | 3438  |      |      |      |      |
| Peak-hour factor, PHF  | 0.89  | 0.89 | 0.89 | 0.89  | 0.89 | 0.89 | 0.89 | 0.89  | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph)        | 26    | 0    | 0    | 16    | 0    | 0    | 0    | 36    | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 24    | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 2     | 0    | 0    | 16    | 0    | 0    | 0    | 36    | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      | Prot  |      |      |      |       |      |      |      |      |
| Protected Phases       | 5     |      |      | 1     |      |      |      | 8     |      |      |      |      |
| Permitted Phases       |       |      |      |       |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)  | 12.0  |      |      | 3.3   |      |      |      | 6.7   |      |      |      |      |
| Effective Green, g (s) | 12.0  |      |      | 3.3   |      |      |      | 6.7   |      |      |      |      |
| Actuated g/C Ratio     | 0.09  |      |      | 0.02  |      |      |      | 0.05  |      |      |      |      |
| Clearance Time (s)     | 6.0   |      |      | 3.5   |      |      |      | 6.0   |      |      |      |      |
| Vehicle Extension (s)  | 3.0   |      |      | 3.0   |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     | 147   |      |      | 41    |      |      |      | 165   |      |      |      |      |
| v/s Ratio Prot         | c0.00 |      |      | c0.01 |      |      |      | c0.01 |      |      |      |      |
| v/s Ratio Perm         |       |      |      |       |      |      |      |       |      |      |      |      |
| v/c Ratio              | 0.02  |      |      | 0.39  |      |      |      | 0.22  |      |      |      |      |
| Uniform Delay, d1      | 58.6  |      |      | 67.4  |      |      |      | 64.1  |      |      |      |      |
| Progression Factor     | 1.00  |      |      | 1.24  |      |      |      | 0.02  |      |      |      |      |
| Incremental Delay, d2  | 0.0   |      |      | 3.7   |      |      |      | 0.7   |      |      |      |      |
| Delay (s)              | 58.6  |      |      | 87.3  |      |      |      | 2.1   |      |      |      |      |
| Level of Service       | E     |      |      | F     |      |      |      | A     |      |      |      |      |
| Approach Delay (s)     |       | 58.6 |      |       | 87.3 |      |      | 2.1   |      |      | 0.0  |      |
| Approach LOS           |       | E    |      |       | F    |      |      | A     |      |      | A    |      |

### Intersection Summary

|                                   |       |                      |       |
|-----------------------------------|-------|----------------------|-------|
| HCM Average Control Delay         | 38.4  | HCM Level of Service | D     |
| HCM Volume to Capacity ratio      | 0.13  |                      |       |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 118.0 |
| Intersection Capacity Utilization | 17.5% | ICU Level of Service | A     |
| Analysis Period (min)             | 15    |                      |       |
| c Critical Lane Group             |       |                      |       |

# HCM Signalized Intersection Capacity Analysis

## 37: US 50 EB #2 & Sundance Dr

11/5/2008



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL   | SBT   | SBR  |
|-----------------------------------|------|-------|-------|------|------|------|------|------|-------|-------|-------|------|
| Lane Configurations               |      | ↑↑    | ↑     |      |      |      |      | ↑↑   | ↑     |       | ↑     |      |
| Volume (vph)                      | 0    | 2845  | 105   | 0    | 0    | 0    | 0    | 32   | 45    | 0     | 14    | 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   |       | 3.5   |      |
| Lane Util. Factor                 |      | 0.95  | 1.00  |      |      |      |      | 0.95 | 1.00  |       | 1.00  |      |
| Fr <sub>t</sub>                   |      | 1.00  | 0.85  |      |      |      |      | 1.00 | 0.85  |       | 1.00  |      |
| Fl <sub>t</sub> Protected         |      | 1.00  | 1.00  |      |      |      |      | 1.00 | 1.00  |       | 1.00  |      |
| Satd. Flow (prot)                 |      | 3438  | 1538  |      |      |      |      | 3438 | 1538  |       | 1810  |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  | 1.00  |      |      |      |      | 1.00 | 1.00  |       | 1.00  |      |
| Satd. Flow (perm)                 |      | 3438  | 1538  |      |      |      |      | 3438 | 1538  |       | 1810  |      |
| Peak-hour factor, PHF             | 0.89 | 0.89  | 0.89  | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89  | 0.89  | 0.89  | 0.89 |
| Adj. Flow (vph)                   | 0    | 3197  | 118   | 0    | 0    | 0    | 0    | 36   | 51    | 0     | 16    | 0    |
| RTOR Reduction (vph)              | 0    | 0     | 14    | 0    | 0    | 0    | 0    | 0    | 33    | 0     | 0     | 0    |
| Lane Group Flow (vph)             | 0    | 3197  | 104   | 0    | 0    | 0    | 0    | 36   | 18    | 0     | 16    | 0    |
| Turn Type                         |      | Perm  |       |      |      |      |      | Perm |       | Split |       |      |
| Protected Phases                  |      | 2     |       |      |      |      |      | 8    |       | 1     | 1     |      |
| Permitted Phases                  |      |       | 2     |      |      |      |      |      | 8     |       |       |      |
| Actuated Green, G (s)             |      | 114.5 | 114.5 |      |      |      |      | 6.7  | 6.7   |       | 3.3   |      |
| Effective Green, g (s)            |      | 114.5 | 114.5 |      |      |      |      | 6.7  | 6.7   |       | 3.3   |      |
| Actuated g/C Ratio                |      | 0.82  | 0.82  |      |      |      |      | 0.05 | 0.05  |       | 0.02  |      |
| Clearance Time (s)                |      | 6.0   | 6.0   |      |      |      |      | 6.0  | 6.0   |       | 3.5   |      |
| Vehicle Extension (s)             |      | 3.0   | 3.0   |      |      |      |      | 3.0  | 3.0   |       | 3.0   |      |
| Lane Grp Cap (vph)                |      | 2812  | 1258  |      |      |      |      | 165  | 74    |       | 43    |      |
| v/s Ratio Prot                    |      | c0.93 |       |      |      |      |      | 0.01 |       |       | c0.01 |      |
| v/s Ratio Perm                    |      |       | 0.07  |      |      |      |      |      | c0.01 |       |       |      |
| v/c Ratio                         |      | 1.14  | 0.08  |      |      |      |      | 0.22 | 0.24  |       | 0.37  |      |
| Uniform Delay, d <sub>1</sub>     |      | 12.8  | 2.5   |      |      |      |      | 64.1 | 64.2  |       | 67.3  |      |
| Progression Factor                |      | 0.73  | 0.70  |      |      |      |      | 1.00 | 1.00  |       | 0.00  |      |
| Incremental Delay, d <sub>2</sub> |      | 65.5  | 0.1   |      |      |      |      | 0.7  | 1.7   |       | 5.3   |      |
| Delay (s)                         |      | 74.8  | 1.9   |      |      |      |      | 64.8 | 65.9  |       | 5.6   |      |
| Level of Service                  |      | E     | A     |      |      |      |      | E    | E     |       | A     |      |
| Approach Delay (s)                |      | 72.2  |       |      | 0.0  |      |      | 65.4 |       |       | 5.6   |      |
| Approach LOS                      |      | E     |       |      | A    |      |      | E    |       |       | A     |      |

### Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 71.7   | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 1.07   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 15.5 |
| Intersection Capacity Utilization | 101.1% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

# HCM Signalized Intersection Capacity Analysis

41: US 50 #4 & 29 1/2 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL   | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|-------|------|-------|------|------|-------|------|------|-------|------|------|
| Lane Configurations    |       |       |      |       |      |      |       |      |      |       |      |      |
| Volume (vph)           | 264   | 2302  | 219  | 14    | 1728 | 14   | 64    | 0    | 14   | 18    | 5    | 214  |
| 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  | 4.0   | 6.0  |      | 4.0   | 6.0  |      |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00 | 1.00  | 0.95 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00 |      |
| Frt                    | 1.00  | 1.00  | 0.85 | 1.00  | 1.00 | 0.85 | 1.00  | 0.85 |      | 1.00  | 0.85 |      |
| Flt Protected          | 0.95  | 1.00  | 1.00 | 0.95  | 1.00 | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538 | 1719  | 3438 | 1538 | 1719  | 1538 |      | 1719  | 1544 |      |
| Flt Permitted          | 0.05  | 1.00  | 1.00 | 0.05  | 1.00 | 1.00 | 0.26  | 1.00 |      | 0.75  | 1.00 |      |
| Satd. Flow (perm)      | 86    | 3438  | 1538 | 93    | 3438 | 1538 | 476   | 1538 |      | 1353  | 1544 |      |
| Peak-hour factor, PHF  | 0.91  | 0.91  | 0.91 | 0.91  | 0.91 | 0.91 | 0.91  | 0.91 | 0.91 | 0.91  | 0.91 | 0.91 |
| Adj. Flow (vph)        | 290   | 2530  | 241  | 15    | 1899 | 15   | 70    | 0    | 15   | 20    | 5    | 235  |
| RTOR Reduction (vph)   | 0     | 0     | 34   | 0     | 0    | 7    | 0     | 13   | 0    | 0     | 151  | 0    |
| Lane Group Flow (vph)  | 290   | 2530  | 207  | 15    | 1899 | 8    | 70    | 2    | 0    | 20    | 89   | 0    |
| Turn Type              | pm+pt |       | Perm | pm+pt |      | Perm | pm+pt |      |      | pm+pt |      |      |
| Protected Phases       | 5     | 2     |      | 1     | 6    |      | 3     | 8    |      | 7     | 4    |      |
| Permitted Phases       | 2     |       | 2    | 6     |      | 6    | 8     |      |      | 4     |      |      |
| Actuated Green, G (s)  | 106.4 | 98.8  | 98.8 | 79.8  | 78.2 | 78.2 | 19.2  | 15.2 |      | 16.0  | 13.6 |      |
| Effective Green, g (s) | 106.4 | 98.8  | 98.8 | 79.8  | 78.2 | 78.2 | 19.2  | 15.2 |      | 16.0  | 13.6 |      |
| Actuated g/C Ratio     | 0.76  | 0.71  | 0.71 | 0.57  | 0.56 | 0.56 | 0.14  | 0.11 |      | 0.11  | 0.10 |      |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0  | 6.0   | 6.0  | 6.0  | 4.0   | 6.0  |      | 4.0   | 6.0  |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0  | 3.0   | 3.0  | 3.0  | 3.0   | 3.0  |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 324   | 2426  | 1085 | 72    | 1920 | 859  | 101   | 167  |      | 161   | 150  |      |
| v/s Ratio Prot         | c0.14 | c0.74 |      | 0.00  | 0.55 |      | c0.02 | 0.00 |      | 0.00  | 0.06 |      |
| v/s Ratio Perm         | 0.54  |       | 0.13 | 0.12  |      | 0.01 | c0.08 |      |      | 0.01  |      |      |
| v/c Ratio              | 0.90  | 1.04  | 0.19 | 0.21  | 0.99 | 0.01 | 0.69  | 0.01 |      | 0.12  | 0.59 |      |
| Uniform Delay, d1      | 49.2  | 20.6  | 7.0  | 69.0  | 30.5 | 13.7 | 57.9  | 55.7 |      | 55.6  | 60.6 |      |
| Progression Factor     | 1.06  | 1.22  | 0.97 | 1.08  | 0.75 | 1.52 | 1.00  | 1.00 |      | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 3.3   | 20.8  | 0.0  | 1.1   | 15.9 | 0.0  | 18.6  | 0.0  |      | 0.3   | 6.2  |      |
| Delay (s)              | 55.3  | 45.9  | 6.8  | 76.0  | 38.7 | 20.9 | 76.5  | 55.7 |      | 55.9  | 66.8 |      |
| Level of Service       | E     | D     | A    | E     | D    | C    | E     | E    |      | E     | E    |      |
| Approach Delay (s)     |       | 43.7  |      |       | 38.8 |      |       | 72.8 |      |       | 65.9 |      |
| Approach LOS           |       | D     |      |       | D    |      |       | E    |      |       | E    |      |

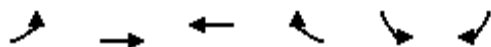
## Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 43.5   | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 1.01   |                      |      |
| Actuated Cycle Length (s)         | 140.0  | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 102.4% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

# HCM Signalized Intersection Capacity Analysis

43: US 50 #4 & 30 Rd

11/5/2008



| Movement               | EBL   | EBT   | WBT  | WBR  | SBL   | SBR  |
|------------------------|-------|-------|------|------|-------|------|
| Lane Configurations    | ↖     | ↑↑    | ↑↑   | ↘    | ↙     | ↘    |
| Volume (vph)           | 137   | 2371  | 1655 | 113  | 137   | 113  |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 6.0   | 6.0   | 6.0  | 6.0  | 6.0   | 6.0  |
| Lane Util. Factor      | 1.00  | 0.95  | 0.95 | 1.00 | 1.00  | 1.00 |
| Frt                    | 1.00  | 1.00  | 1.00 | 0.85 | 1.00  | 0.85 |
| Flt Protected          | 0.95  | 1.00  | 1.00 | 1.00 | 0.95  | 1.00 |
| Satd. Flow (prot)      | 1719  | 3438  | 3438 | 1538 | 1719  | 1538 |
| Flt Permitted          | 0.08  | 1.00  | 1.00 | 1.00 | 0.95  | 1.00 |
| Satd. Flow (perm)      | 152   | 3438  | 3438 | 1538 | 1719  | 1538 |
| Peak-hour factor, PHF  | 0.96  | 0.96  | 0.96 | 0.96 | 0.96  | 0.96 |
| Adj. Flow (vph)        | 143   | 2470  | 1724 | 118  | 143   | 118  |
| RTOR Reduction (vph)   | 0     | 0     | 0    | 38   | 0     | 106  |
| Lane Group Flow (vph)  | 143   | 2470  | 1724 | 80   | 143   | 12   |
| Turn Type              | pm+pt |       |      | Perm |       | Perm |
| Protected Phases       | 5     | 2     | 6    |      | 4     |      |
| Permitted Phases       | 2     |       |      | 6    |       | 4    |
| Actuated Green, G (s)  | 113.2 | 113.2 | 95.2 | 95.2 | 14.8  | 14.8 |
| Effective Green, g (s) | 113.2 | 113.2 | 95.2 | 95.2 | 14.8  | 14.8 |
| Actuated g/C Ratio     | 0.81  | 0.81  | 0.68 | 0.68 | 0.11  | 0.11 |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0  | 6.0  | 6.0   | 6.0  |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0  | 3.0  | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 257   | 2780  | 2338 | 1046 | 182   | 163  |
| v/s Ratio Prot         | 0.05  | c0.72 | 0.50 |      | c0.08 |      |
| v/s Ratio Perm         | 0.40  |       |      | 0.05 |       | 0.01 |
| v/c Ratio              | 0.56  | 0.89  | 0.74 | 0.08 | 0.79  | 0.08 |
| Uniform Delay, d1      | 30.7  | 9.1   | 14.4 | 7.6  | 61.1  | 56.4 |
| Progression Factor     | 0.51  | 0.66  | 0.33 | 0.57 | 1.00  | 1.00 |
| Incremental Delay, d2  | 1.0   | 1.9   | 1.8  | 0.1  | 19.6  | 0.2  |
| Delay (s)              | 16.8  | 7.9   | 6.5  | 4.4  | 80.7  | 56.6 |
| Level of Service       | B     | A     | A    | A    | F     | E    |
| Approach Delay (s)     |       | 8.4   | 6.4  |      | 69.8  |      |
| Approach LOS           |       | A     | A    |      | E     |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.88  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 83.1% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

45: US 50 #4 & 31 Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR   | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|-------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |       |       |       |       |       |      |      |       |      |      |      |      |
| Volume (vph)           | 102   | 2274  | 126   | 46    | 1400  | 18   | 126  | 5     | 46   | 42   | 5    | 37   |
| 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  | 0.95  | 1.00  | 1.00  | 0.95  | 1.00 |      | 1.00  | 1.00 | 1.00 | 1.00 |      |
| Frt                    | 1.00  | 1.00  | 0.85  | 1.00  | 1.00  | 0.85 |      | 1.00  | 0.85 | 1.00 | 0.87 |      |
| Flt Protected          | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  | 1.00 |      | 0.95  | 1.00 | 0.95 | 1.00 |      |
| Satd. Flow (prot)      | 1719  | 3438  | 1538  | 1719  | 3438  | 1538 |      | 1726  | 1538 | 1719 | 1569 |      |
| Flt Permitted          | 0.12  | 1.00  | 1.00  | 0.04  | 1.00  | 1.00 |      | 0.70  | 1.00 | 0.49 | 1.00 |      |
| Satd. Flow (perm)      | 209   | 3438  | 1538  | 76    | 3438  | 1538 |      | 1269  | 1538 | 878  | 1569 |      |
| Peak-hour factor, PHF  | 0.94  | 0.94  | 0.94  | 0.94  | 0.94  | 0.94 | 0.94 | 0.94  | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph)        | 109   | 2419  | 134   | 49    | 1489  | 19   | 134  | 5     | 49   | 45   | 5    | 39   |
| RTOR Reduction (vph)   | 0     | 0     | 36    | 0     | 0     | 6    | 0    | 0     | 27   | 0    | 35   | 0    |
| Lane Group Flow (vph)  | 109   | 2419  | 98    | 49    | 1489  | 13   | 0    | 139   | 22   | 45   | 9    | 0    |
| Turn Type              | pm+pt |       | Perm  | pm+pt |       | Perm | Perm |       | Perm | Perm |      |      |
| Protected Phases       | 5     | 2     |       | 1     | 6     |      |      | 8     |      |      | 4    |      |
| Permitted Phases       | 2     |       | 2     | 6     |       | 6    | 8    |       | 8    | 4    |      |      |
| Actuated Green, G (s)  | 102.8 | 102.8 | 102.8 | 98.0  | 98.0  | 98.0 |      | 16.0  | 16.0 | 16.0 | 16.0 |      |
| Effective Green, g (s) | 102.8 | 102.8 | 102.8 | 98.0  | 98.0  | 98.0 |      | 16.0  | 16.0 | 16.0 | 16.0 |      |
| Actuated g/C Ratio     | 0.73  | 0.73  | 0.73  | 0.70  | 0.70  | 0.70 |      | 0.11  | 0.11 | 0.11 | 0.11 |      |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  |      | 6.0   | 6.0  | 6.0  | 6.0  |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  |      | 3.0   | 3.0  | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     | 240   | 2524  | 1129  | 91    | 2407  | 1077 |      | 145   | 176  | 100  | 179  |      |
| v/s Ratio Prot         | 0.03  | c0.70 |       | 0.01  | c0.43 |      |      |       |      |      | 0.01 |      |
| v/s Ratio Perm         | 0.31  |       | 0.06  | 0.36  |       | 0.01 |      | c0.11 | 0.01 | 0.05 |      |      |
| v/c Ratio              | 0.45  | 0.96  | 0.09  | 0.54  | 0.62  | 0.01 |      | 0.96  | 0.12 | 0.45 | 0.05 |      |
| Uniform Delay, d1      | 11.0  | 16.7  | 5.3   | 53.8  | 11.1  | 6.4  |      | 61.7  | 55.7 | 57.9 | 55.2 |      |
| Progression Factor     | 0.67  | 0.48  | 0.23  | 0.43  | 0.23  | 0.17 |      | 1.00  | 1.00 | 1.00 | 1.00 |      |
| Incremental Delay, d2  | 0.7   | 6.3   | 0.1   | 4.3   | 0.9   | 0.0  |      | 61.5  | 0.3  | 3.2  | 0.1  |      |
| Delay (s)              | 8.1   | 14.3  | 1.3   | 27.4  | 3.5   | 1.1  |      | 123.2 | 56.0 | 61.1 | 55.4 |      |
| Level of Service       | A     | B     | A     | C     | A     | A    |      | F     | E    | E    | E    |      |
| Approach Delay (s)     |       | 13.4  |       |       | 4.2   |      |      | 105.7 |      |      | 58.3 |      |
| Approach LOS           |       | B     |       |       | A     |      |      | F     |      |      | E    |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 14.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.92  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 95.1% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



# HCM Signalized Intersection Capacity Analysis

46: US 50 #6 & 141B

11/5/2008



| Movement               | WBT   | WBR  | NBT   | SBL   | SBR    |
|------------------------|-------|------|-------|-------|--------|
| Lane Configurations    | ↑↑    | ↑    | ↑↑    | ↑     | ↑      |
| Volume (vph)           | 1180  | 231  | 59    | 233   | 130    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900   |
| Total Lost time (s)    | 6.0   | 6.0  | 6.0   | 5.6   | 5.6    |
| Lane Util. Factor      | 0.95  | 1.00 | 0.95  | 1.00  | 1.00   |
| Frt                    | 1.00  | 0.85 | 1.00  | 1.00  | 0.85   |
| Flt Protected          | 1.00  | 1.00 | 1.00  | 0.95  | 1.00   |
| Satd. Flow (prot)      | 3438  | 1538 | 3438  | 1719  | 1538   |
| Flt Permitted          | 1.00  | 1.00 | 1.00  | 0.95  | 1.00   |
| Satd. Flow (perm)      | 3438  | 1538 | 3438  | 1719  | 1538   |
| Peak-hour factor, PHF  | 0.97  | 0.97 | 0.97  | 0.97  | 0.97   |
| Growth Factor (vph)    | 100%  | 242% | 242%  | 242%  | 242%   |
| Adj. Flow (vph)        | 1216  | 576  | 147   | 581   | 324    |
| RTOR Reduction (vph)   | 0     | 242  | 0     | 0     | 94     |
| Lane Group Flow (vph)  | 1216  | 334  | 147   | 581   | 230    |
| Turn Type              |       | Perm |       | Prot  | custom |
| Protected Phases       | 6     |      | 5     | 4     |        |
| Permitted Phases       |       | 6    | 5     |       | 4      |
| Actuated Green, G (s)  | 62.0  | 62.0 | 8.0   | 52.4  | 52.4   |
| Effective Green, g (s) | 62.0  | 62.0 | 8.0   | 52.4  | 52.4   |
| Actuated g/C Ratio     | 0.44  | 0.44 | 0.06  | 0.37  | 0.37   |
| Clearance Time (s)     | 6.0   | 6.0  | 6.0   | 5.6   | 5.6    |
| Vehicle Extension (s)  | 5.0   | 5.0  | 4.0   | 4.0   | 4.0    |
| Lane Grp Cap (vph)     | 1523  | 681  | 196   | 643   | 576    |
| v/s Ratio Prot         | c0.35 |      | c0.04 | c0.34 |        |
| v/s Ratio Perm         |       | 0.22 |       |       | 0.15   |
| v/c Ratio              | 0.80  | 0.49 | 0.75  | 0.90  | 0.40   |
| Uniform Delay, d1      | 33.6  | 27.7 | 65.0  | 41.4  | 32.2   |
| Progression Factor     | 1.00  | 1.00 | 1.03  | 1.00  | 1.00   |
| Incremental Delay, d2  | 4.5   | 2.5  | 7.0   | 16.4  | 0.6    |
| Delay (s)              | 38.1  | 30.3 | 74.1  | 57.8  | 32.8   |
| Level of Service       | D     | C    | E     | E     | C      |
| Approach Delay (s)     | 35.6  |      | 74.1  |       |        |
| Approach LOS           | D     |      | E     |       |        |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 41.8  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.84  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 17.6 |
| Intersection Capacity Utilization | 83.0% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 48: US 50 #7 & Willow Bend Rd

11/5/2008



| Movement               | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|-------|-------|-------|-------|------|-------|------|------|------|------|
| Lane Configurations    | ↖     | ↗     | ↘     | ↖     | ↗     | ↘     |      | ↕     |      |      | ↕    |      |
| Volume (vph)           | 0     | 2863  | 34    | 0     | 1977  | 9     | 13   | 0     | 4    | 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   |      | 6.0   |      |      |      |      |
| Lane Util. Factor      |       | 0.95  | 1.00  |       | 0.95  | 1.00  |      | 1.00  |      |      |      |      |
| Frt                    |       | 1.00  | 0.85  |       | 1.00  | 0.85  |      | 0.97  |      |      |      |      |
| Flt Protected          |       | 1.00  | 1.00  |       | 1.00  | 1.00  |      | 0.96  |      |      |      |      |
| Satd. Flow (prot)      |       | 3438  | 1538  |       | 3438  | 1538  |      | 1690  |      |      |      |      |
| Flt Permitted          |       | 1.00  | 1.00  |       | 1.00  | 1.00  |      | 0.77  |      |      |      |      |
| Satd. Flow (perm)      |       | 3438  | 1538  |       | 3438  | 1538  |      | 1358  |      |      |      |      |
| Peak-hour factor, PHF  | 0.91  | 0.91  | 0.91  | 0.91  | 0.91  | 0.91  | 0.91 | 0.91  | 0.91 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph)        | 0     | 3146  | 37    | 0     | 2173  | 10    | 14   | 0     | 4    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0     | 5     | 0     | 0     | 1     | 0    | 4     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0     | 3146  | 32    | 0     | 2173  | 9     | 0    | 14    | 0    | 0    | 0    | 0    |
| Turn Type              | pm+pt |       | Perm  | pm+pt |       | Perm  | Perm |       |      | Perm |      |      |
| Protected Phases       | 5     | 2     |       | 1     | 6     |       |      | 8     |      |      |      | 4    |
| Permitted Phases       | 2     |       | 2     | 6     |       | 6     | 8    |       |      | 4    |      |      |
| Actuated Green, G (s)  |       | 112.0 | 112.0 |       | 112.0 | 112.0 |      | 7.0   |      |      |      |      |
| Effective Green, g (s) |       | 112.0 | 112.0 |       | 112.0 | 112.0 |      | 7.0   |      |      |      |      |
| Actuated g/C Ratio     |       | 0.85  | 0.85  |       | 0.85  | 0.85  |      | 0.05  |      |      |      |      |
| Clearance Time (s)     |       | 6.0   | 6.0   |       | 6.0   | 6.0   |      | 6.0   |      |      |      |      |
| Vehicle Extension (s)  |       | 3.0   | 3.0   |       | 3.0   | 3.0   |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |       | 2939  | 1315  |       | 2939  | 1315  |      | 73    |      |      |      |      |
| v/s Ratio Prot         |       | c0.92 |       |       | 0.63  |       |      |       |      |      |      |      |
| v/s Ratio Perm         |       |       | 0.02  |       |       | 0.01  |      | c0.01 |      |      |      |      |
| v/c Ratio              |       | 1.07  | 0.02  |       | 0.74  | 0.01  |      | 0.19  |      |      |      |      |
| Uniform Delay, d1      |       | 9.5   | 1.4   |       | 3.7   | 1.4   |      | 59.3  |      |      |      |      |
| Progression Factor     |       | 1.00  | 1.00  |       | 1.00  | 1.00  |      | 1.00  |      |      |      |      |
| Incremental Delay, d2  |       | 39.2  | 0.0   |       | 1.0   | 0.0   |      | 1.3   |      |      |      |      |
| Delay (s)              |       | 48.7  | 1.4   |       | 4.7   | 1.4   |      | 60.6  |      |      |      |      |
| Level of Service       |       | D     | A     |       | A     | A     |      | E     |      |      |      |      |
| Approach Delay (s)     |       | 48.2  |       |       | 4.7   |       |      | 60.6  |      |      | 0.0  |      |
| Approach LOS           |       | D     |       |       | A     |       |      | E     |      |      | A    |      |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 30.6  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 1.02  |                      |      |
| Actuated Cycle Length (s)         | 131.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 92.5% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

51: US 50 #7 & 3rd St

11/5/2008



| Movement               | EBL   | EBT   | EBR   | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR   |
|------------------------|-------|-------|-------|-------|------|------|------|------|------|------|------|-------|
| Lane Configurations    |       |       |       |       |      |      |      |      |      |      |      |       |
| Volume (vph)           | 341   | 2616  | 4     | 9     | 1934 | 30   | 13   | 9    | 13   | 21   | 4    | 128   |
| 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   |
| Lane Util. Factor      | 0.97  | 0.95  | 1.00  | 1.00  | 0.95 | 1.00 |      | 1.00 |      |      | 1.00 | 1.00  |
| Frt                    | 1.00  | 1.00  | 0.85  | 1.00  | 1.00 | 0.85 |      | 0.95 |      |      | 1.00 | 0.85  |
| Flt Protected          | 0.95  | 1.00  | 1.00  | 0.95  | 1.00 | 1.00 |      | 0.98 |      |      | 0.96 | 1.00  |
| Satd. Flow (prot)      | 3335  | 3438  | 1538  | 1719  | 3438 | 1538 |      | 1687 |      |      | 1736 | 1538  |
| Flt Permitted          | 0.05  | 1.00  | 1.00  | 0.04  | 1.00 | 1.00 |      | 0.87 |      |      | 0.73 | 1.00  |
| Satd. Flow (perm)      | 160   | 3438  | 1538  | 76    | 3438 | 1538 |      | 1490 |      |      | 1329 | 1538  |
| Peak-hour factor, PHF  | 0.97  | 0.97  | 0.97  | 0.97  | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97  |
| Adj. Flow (vph)        | 352   | 2697  | 4     | 9     | 1994 | 31   | 13   | 9    | 13   | 22   | 4    | 132   |
| RTOR Reduction (vph)   | 0     | 0     | 0     | 0     | 0    | 8    | 0    | 12   | 0    | 0    | 0    | 77    |
| Lane Group Flow (vph)  | 352   | 2697  | 4     | 9     | 1994 | 23   | 0    | 23   | 0    | 0    | 26   | 55    |
| Turn Type              | pm+pt |       | Perm  | pm+pt |      | Perm | Perm |      |      | Perm |      | Perm  |
| Protected Phases       | 5     | 2     |       | 1     | 6    |      |      | 8    |      |      | 4    |       |
| Permitted Phases       | 2     |       | 2     | 6     |      | 6    | 8    |      |      | 4    |      | 4     |
| Actuated Green, G (s)  | 117.7 | 110.9 | 110.9 | 95.8  | 95.0 | 95.0 |      | 10.3 |      |      | 10.3 | 10.3  |
| Effective Green, g (s) | 117.7 | 110.9 | 110.9 | 95.8  | 95.0 | 95.0 |      | 10.3 |      |      | 10.3 | 10.3  |
| Actuated g/C Ratio     | 0.84  | 0.79  | 0.79  | 0.68  | 0.68 | 0.68 |      | 0.07 |      |      | 0.07 | 0.07  |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |      | 6.0  |      |      | 6.0  | 6.0   |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  | 3.0   |
| Lane Grp Cap (vph)     | 513   | 2723  | 1218  | 61    | 2333 | 1044 |      | 110  |      |      | 98   | 113   |
| v/s Ratio Prot         | c0.08 | c0.78 |       | 0.00  | 0.58 |      |      |      |      |      |      |       |
| v/s Ratio Perm         | 0.49  |       | 0.00  | 0.10  |      | 0.01 |      | 0.02 |      |      | 0.02 | c0.04 |
| v/c Ratio              | 0.69  | 0.99  | 0.00  | 0.15  | 0.85 | 0.02 |      | 0.21 |      |      | 0.27 | 0.49  |
| Uniform Delay, d1      | 37.6  | 14.0  | 3.0   | 69.6  | 17.2 | 7.3  |      | 61.0 |      |      | 61.3 | 62.3  |
| Progression Factor     | 1.00  | 1.00  | 1.00  | 0.56  | 0.78 | 0.61 |      | 1.00 |      |      | 1.00 | 1.00  |
| Incremental Delay, d2  | 3.8   | 15.2  | 0.0   | 0.8   | 3.2  | 0.0  |      | 0.9  |      |      | 1.5  | 3.3   |
| Delay (s)              | 41.4  | 29.2  | 3.0   | 39.5  | 16.7 | 4.5  |      | 62.0 |      |      | 62.7 | 65.6  |
| Level of Service       | D     | C     | A     | D     | B    | A    |      | E    |      |      | E    | E     |
| Approach Delay (s)     |       | 30.6  |       |       | 16.6 |      |      | 62.0 |      |      | 65.1 |       |
| Approach LOS           |       | C     |       |       | B    |      |      | E    |      |      | E    |       |

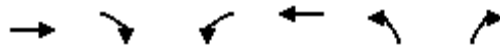
## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 26.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.91  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 99.3% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

## 52: US 50 #7 & SH 141A

11/5/2008



| Movement               | EBT   | EBR   | WBL   | WBT   | NBL   | NBR  |
|------------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations    | ↑↑    | ↑     | ↵     | ↑↑    | ↵     | ↑    |
| Volume (vph)           | 2400  | 67    | 8     | 1742  | 58    | 4    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  |
| Lane Util. Factor      | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  | 1.00 |
| Frt                    | 1.00  | 0.85  | 1.00  | 1.00  | 1.00  | 0.85 |
| Flt Protected          | 1.00  | 1.00  | 0.95  | 1.00  | 0.95  | 1.00 |
| Satd. Flow (prot)      | 3438  | 1538  | 1719  | 3438  | 1719  | 1538 |
| Flt Permitted          | 1.00  | 1.00  | 0.04  | 1.00  | 0.95  | 1.00 |
| Satd. Flow (perm)      | 3438  | 1538  | 66    | 3438  | 1719  | 1538 |
| Peak-hour factor, PHF  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95 |
| Growth Factor (vph)    | 100%  | 279%  | 279%  | 100%  | 279%  | 279% |
| Adj. Flow (vph)        | 2526  | 197   | 23    | 1834  | 170   | 12   |
| RTOR Reduction (vph)   | 0     | 51    | 0     | 0     | 0     | 11   |
| Lane Group Flow (vph)  | 2526  | 146   | 23    | 1834  | 170   | 1    |
| Turn Type              |       | Perm  | pm+pt |       |       | Perm |
| Protected Phases       | 2     |       | 1     | 6     | 8     |      |
| Permitted Phases       |       | 2     | 6     |       |       | 8    |
| Actuated Green, G (s)  | 104.0 | 104.0 | 112.4 | 112.4 | 15.6  | 15.6 |
| Effective Green, g (s) | 104.0 | 104.0 | 112.4 | 112.4 | 15.6  | 15.6 |
| Actuated g/C Ratio     | 0.74  | 0.74  | 0.80  | 0.80  | 0.11  | 0.11 |
| Clearance Time (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 2554  | 1143  | 81    | 2760  | 192   | 171  |
| v/s Ratio Prot         | c0.73 |       | 0.00  | c0.53 | c0.10 |      |
| v/s Ratio Perm         |       | 0.10  | 0.22  |       |       | 0.00 |
| v/c Ratio              | 0.99  | 0.13  | 0.28  | 0.66  | 0.89  | 0.01 |
| Uniform Delay, d1      | 17.4  | 5.1   | 56.9  | 5.8   | 61.3  | 55.3 |
| Progression Factor     | 0.51  | 0.98  | 1.00  | 1.00  | 1.00  | 1.00 |
| Incremental Delay, d2  | 8.2   | 0.1   | 1.9   | 1.3   | 34.9  | 0.0  |
| Delay (s)              | 17.1  | 5.1   | 58.8  | 7.1   | 96.2  | 55.3 |
| Level of Service       | B     | A     | E     | A     | F     | E    |
| Approach Delay (s)     | 16.2  |       |       | 7.8   | 93.5  |      |
| Approach LOS           | B     |       |       | A     | F     |      |

### Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 15.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.94  |                      |      |
| Actuated Cycle Length (s)         | 140.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 85.3% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# Arterial LOS

Arterial Level of Service  
No Build w/ Improvements

3/19/2008

Arterial Level of Service: EB US 50 #1

| Cross Street    | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|-----------------|------|---------------|-----------------|-----------|----------------|
| Grand Mesa Ave  | 1    | 37.7          | 48.5            | 0.1       | 16             |
| Gunnison Blvd   | 6    | 8.6           | 12.7            | 0.0       | 15             |
| Santa Clara Ave | 8    | 4.9           | 11.5            | 0.1       | 26             |
| UnawEEP Ave     | 11   | 2.8           | 12.2            | 0.1       | 36             |
|                 | 121  | 0.8           | 5.3             | 0.1       | 38             |
| James St        | 14   | 0.3           | 3.6             | 0.0       | 40             |
| Green Acre 1    | 107  | 0.6           | 8.4             | 0.1       | 42             |
| Elm Park        | 15   | 0.3           | 2.7             | 0.0       | 42             |
| Green Acre 2    | 19   | 0.7           | 5.9             | 0.1       | 38             |
| Aspen St        | 24   | 0.7           | 3.8             | 0.0       | 38             |
| Palmer St       | 20   | 5.4           | 11.0            | 0.1       | 24             |
| Palisade St     | 27   | 2.1           | 8.3             | 0.1       | 35             |
| Linden Ave      | 28   | 1.4           | 10.2            | 0.1       | 38             |
| 27 Rd           | 32   | 13.0          | 36.6            | 0.3       | 29             |
| Dorothy Ave     | 35   | 3.0           | 14.8            | 0.2       | 38             |
| EB Off-Ramp     | 38   | 0.3           | 5.5             | 0.1       | 44             |
| EB On-Ramp      | 40   | 0.4           | 9.3             | 0.1       | 46             |
| Frontage Rd     | 43   | 1.1           | 16.4            | 0.2       | 44             |
| US 50 EB #2     | 117  | 0.2           | 4.5             | 0.1       | 43             |
| Total           |      | 84.0          | 231.0           | 1.9       | 32             |

Arterial Level of Service: WB US 50 #1

| Cross Street    | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|-----------------|------|---------------|-----------------|-----------|----------------|
| Frontage Rd     | 43   | 1.0           | 5.1             | 0.1       | 38             |
| WB On-Ramp      | 40   | 5.9           | 21.0            | 0.2       | 34             |
| EB Off-Ramp     | 38   | 11.4          | 20.8            | 0.1       | 20             |
| Dorothy Ave     | 35   | 7.4           | 13.5            | 0.1       | 18             |
| 27 Rd           | 32   | 33.9          | 46.1            | 0.2       | 12             |
|                 | 28   | 10.4          | 32.4            | 0.3       | 32             |
| Palisade St     | 27   | 5.8           | 15.3            | 0.1       | 28             |
| Palmer St       | 20   | 9.4           | 15.7            | 0.1       | 18             |
| Aspen St        | 24   | 3.7           | 9.5             | 0.1       | 27             |
| Green Acre 2    | 19   | 1.1           | 4.0             | 0.0       | 37             |
| Elm Park        | 15   | 2.3           | 7.7             | 0.1       | 30             |
| Green Acre 1    | 107  | 1.1           | 3.5             | 0.0       | 33             |
| James St        | 14   | 5.7           | 13.5            | 0.1       | 26             |
|                 | 121  | 3.7           | 6.8             | 0.0       | 21             |
| UnawEEP Ave     | 11   | 8.3           | 12.3            | 0.1       | 17             |
| Santa Clara Ave | 8    | 10.9          | 20.5            | 0.1       | 25             |
| Gunnison Blvd   | 6    | 5.0           | 11.1            | 0.1       | 28             |
| Grand Mesa Ave  | 1    | 2.4           | 7.1             | 0.0       | 25             |
| Total           |      | 129.4         | 265.9           | 1.7       | 24             |

Arterial Level of Service: WB US 50 WB #3

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi)  | Arterial Speed |
|--------------|------|---------------|-----------------|------------|----------------|
|              | 138  | 36.2          | 44.9            | 0.1        | 9              |
| Sundance Dr  | 71   | 21.1          | 27.5            | 0.1        | 11             |
| 29 Rd        | 68   | 24.9          | 33.5            | 0.1        | 12             |
| Reta Dr      | 66   | 3.4           | 8.8             | 0.1        | 30             |
| Elm Dr       | 64   | 1.4           | 16.7            | 0.2        | 41             |
| Dee Vee Dr   | 62   | 0.1           | 2.0             | 0.0        | 44             |
| Indiana St   | 61   | 0.3           | 3.3             | 0.1        | 62             |
| Tennessee St | 59   | 5.0           | 8.4             | 0.1        | 56             |
| 28 1/2 Rd    | 51   | 18.9          | 32.7            | 0.2        | 23             |
| Fairgrounds  | 49   | 15.6          | 54.9            | 0.6        | 40             |
|              | 127  | 3.8           | 12.5            | 0.1        | 31             |
| 27 3/4 Rd    | 46   | 22.4          | 32.5            | 0.1        | 14             |
|              | 130  | 5.6           | 13.9            | 0.1        | 27             |
| US 50 EB #2  | 117  | 3.1           | 16.2            | 0.2        | 36             |
| <b>Total</b> |      | <b>161.6</b>  | <b>307.7</b>    | <b>2.0</b> | <b>24</b>      |

Arterial Level of Service: EB US 50 EB #2

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi)  | Arterial Speed |
|--------------|------|---------------|-----------------|------------|----------------|
| 27 3/4 Rd    | 110  | 9.1           | 30.2            | 0.3        | 31             |
| Fairgrounds  | 109  | 2.7           | 21.4            | 0.2        | 40             |
|              | 136  | 0.3           | 4.7             | 0.1        | 45             |
| KOA          | 112  | 1.3           | 17.9            | 0.2        | 50             |
| 28 1/2 Rd    | 54   | 6.9           | 25.8            | 0.3        | 41             |
| Rainbow Dr   | 113  | 2.4           | 11.7            | 0.2        | 50             |
| Dee Vee Dr   | 115  | 1.2           | 13.6            | 0.2        | 50             |
| Reta Dr      | 56   | 1.6           | 18.3            | 0.2        | 42             |
| 29 Rd        | 116  | 4.1           | 10.5            | 0.1        | 28             |
|              | 133  | 2.3           | 6.3             | 0.1        | 38             |
| Sundance Dr  | 114  | 3.5           | 8.2             | 0.1        | 24             |
| Redrock Rd   | 118  | 1.9           | 10.9            | 0.1        | 37             |
| 29 1/4 Rd    | 119  | 1.2           | 6.4             | 0.1        | 40             |
| US 50 WB # 3 | 120  | 0.9           | 13.0            | 0.1        | 41             |
| <b>Total</b> |      | <b>39.2</b>   | <b>199.0</b>    | <b>2.2</b> | <b>40</b>      |

Arterial Level of Service: WB US 50 WB # 3

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi)  | Arterial Speed |
|--------------|------|---------------|-----------------|------------|----------------|
| 29 1/4 Rd    | 75   | 47.3          | 57.4            | 0.1        | 9              |
| <b>Total</b> |      | <b>47.3</b>   | <b>57.4</b>     | <b>0.1</b> | <b>9</b>       |

Arterial Level of Service: EB US 50 #4

| Cross Street  | Node | Delay (s/veh) | Travel time (s) | Dist (mi)  | Arterial Speed |
|---------------|------|---------------|-----------------|------------|----------------|
| 29 1/2 Rd     | 78   | 0.9           | 9.7             | 0.1        | 48             |
|               | 131  | 0.7           | 7.0             | 0.1        | 49             |
| 29 3/4 Rd     | 80   | 10.7          | 23.9            | 0.2        | 31             |
| 30 Rd         | 84   | 6.9           | 25.5            | 0.3        | 40             |
| S Frontage Rd | 85   | 2.4           | 23.9            | 0.3        | 50             |
|               | 124  | 1.8           | 24.2            | 0.3        | 50             |
| 31 Rd         | 87   | 3.2           | 12.1            | 0.1        | 41             |
| US 50 EB #5   | 134  | 5.1           | 37.3            | 0.5        | 46             |
| <b>Total</b>  |      | <b>31.7</b>   | <b>163.7</b>    | <b>2.0</b> | <b>44</b>      |

Arterial Level of Service: WB US 50 #4

| Cross Street  | Node | Delay (s/veh) | Travel time (s) | Dist (mi)  | Arterial Speed |
|---------------|------|---------------|-----------------|------------|----------------|
| 31 Rd         | 87   | 11.3          | 42.4            | 0.5        | 41             |
|               | 124  | 2.6           | 11.7            | 0.1        | 42             |
| S Frontage Rd | 85   | 4.0           | 26.5            | 0.3        | 46             |
| 30 Rd         | 84   | 8.4           | 30.1            | 0.3        | 39             |
| 29 3/4 Rd     | 80   | 12.3          | 30.7            | 0.3        | 34             |
|               | 131  | 14.6          | 28.4            | 0.2        | 26             |
| 29 1/2 Rd     | 78   | 16.5          | 22.8            | 0.1        | 15             |
| US 50 WB # 3  | 120  | 45.5          | 55.8            | 0.1        | 12             |
| <b>Total</b>  |      | <b>115.3</b>  | <b>248.5</b>    | <b>2.0</b> | <b>31</b>      |

Arterial Level of Service: WB US 50 WB #6

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi)  | Arterial Speed |
|--------------|------|---------------|-----------------|------------|----------------|
| 141B         | 90   | 50.6          | 58.9            | 0.1        | 8              |
| US 50 EB #5  | 134  | 10.3          | 20.5            | 0.1        | 26             |
| <b>Total</b> |      | <b>60.9</b>   | <b>79.4</b>     | <b>0.3</b> | <b>13</b>      |



Arterial Level of Service: EB US 50 #7

| Cross Street   | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|-----------|----------------|
|                | 111  | 0.0           | 0.0             | 0.1       |                |
| CDOT           | 92   | 1.6           | 7.5             | 0.1       | 53             |
|                | 122  | 2.4           | 34.0            | 0.5       | 51             |
|                | 137  | 3.0           | 37.4            | 0.5       | 50             |
| Willow Bend Rd | 94   | 5.1           | 15.0            | 0.2       | 37             |
|                | 132  | 1.9           | 14.0            | 0.2       | 39             |
| 3247           | 97   | 3.3           | 38.1            | 0.5       | 49             |
| 1st St         | 100  | 0.6           | 5.4             | 0.1       | 55             |
| 3rd St         | 102  | 4.0           | 22.1            | 0.3       | 44             |
| SH 141A        | 104  | 6.8           | 18.0            | 0.2       | 34             |
|                | 72   | 1.7           | 11.8            | 0.1       | 38             |
| Total          |      | 30.4          | 203.3           | 2.7       | 48             |

Arterial Level of Service: WB US 50 #7

| Cross Street   | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|-----------|----------------|
|                | 72   | 144.2         | 148.9           | 0.1       | 7              |
| SH 141A        | 104  | 58.5          | 66.7            | 0.1       | 7              |
| 3rd St         | 102  | 20.7          | 31.7            | 0.2       | 20             |
| 1st St         | 100  | 10.0          | 28.1            | 0.3       | 35             |
| 3247           | 97   | 1.5           | 6.7             | 0.1       | 44             |
|                | 132  | 5.9           | 48.1            | 0.5       | 39             |
| Willow Bend Rd | 94   | 7.5           | 18.0            | 0.2       | 30             |
|                | 137  | 5.4           | 15.6            | 0.2       | 35             |
|                | 122  | 6.6           | 41.0            | 0.5       | 46             |
| CDOT           | 92   | 17.7          | 49.2            | 0.5       | 35             |
|                | 111  | 17.0          | 23.4            | 0.1       | 15             |
| US 50 EB #5    | 125  | 34.3          | 42.4            | 0.1       | 10             |
| Total          |      | 329.3         | 519.8           | 2.8       | 24             |

Arterial Level of Service: EB US 50 EB #5

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
|              | 139  | 0.8           | 4.2             | 0.0       | 40             |
|              | 140  | 2.2           | 11.7            | 0.1       | 45             |
| US 50 #7     | 125  | 1.0           | 7.2             | 0.1       | 41             |
| Total        |      | 4.1           | 23.1            | 0.3       | 43             |



Arterial Level of Service  
No Build

3/19/2008

Arterial Level of Service: EB US 50 #1

| Cross Street    | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|-----------------|------|---------------|-----------------|-----------|----------------|
| Grand Mesa Ave  | 1    | 652.2         | 662.9           | 0.1       | 12             |
| Gunnison Blvd   | 6    | 9.8           | 13.8            | 0.0       | 13             |
| Santa Clara Ave | 8    | 12.9          | 19.5            | 0.1       | 15             |
| UnawEEP Ave     | 11   | 23.1          | 32.9            | 0.1       | 13             |
|                 | 121  | 5.2           | 9.8             | 0.1       | 21             |
| James St        | 14   | 3.0           | 6.4             | 0.0       | 24             |
| Green Acre 1    | 107  | 7.8           | 15.6            | 0.1       | 23             |
| Elm Park        | 15   | 3.3           | 5.8             | 0.0       | 21             |
| Green Acre 2    | 19   | 8.1           | 13.3            | 0.1       | 17             |
| Aspen St        | 24   | 6.1           | 9.2             | 0.0       | 17             |
| Palmer St       | 20   | 29.5          | 35.1            | 0.1       | 13             |
| Palisade St     | 27   | 6.4           | 12.6            | 0.1       | 23             |
| Linden Ave      | 28   | 22.9          | 31.4            | 0.1       | 24             |
| 27 Rd           | 32   | 56.2          | 79.7            | 0.3       | 13             |
| Dorothy Ave     | 35   | 8.3           | 20.2            | 0.2       | 30             |
| EB Off-Ramp     | 38   | 0.6           | 5.7             | 0.1       | 43             |
| EB On-Ramp      | 40   | 0.5           | 9.4             | 0.1       | 45             |
| Frontage Rd     | 43   | 24.4          | 39.0            | 0.2       | 30             |
| US 50 EB #2     | 117  | 6.5           | 10.8            | 0.1       | 18             |
| Total           |      | 886.9         | 1033.0          | 1.9       | 19             |

Arterial Level of Service: WB US 50 #1

| Cross Street    | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|-----------------|------|---------------|-----------------|-----------|----------------|
| Frontage Rd     | 43   | 1.4           | 5.5             | 0.1       | 35             |
| WB On-Ramp      | 40   | 13.1          | 28.3            | 0.2       | 25             |
| EB Off-Ramp     | 38   | 22.4          | 32.0            | 0.1       | 13             |
| Dorothy Ave     | 35   | 17.6          | 23.7            | 0.1       | 11             |
| 27 Rd           | 32   | 63.6          | 75.8            | 0.2       | 7              |
| B 3/4 Road      | 28   | 74.4          | 96.8            | 0.3       | 11             |
| Palisade St     | 27   | 1.8           | 11.6            | 0.1       | 33             |
| Palmer St       | 20   | 5.2           | 11.4            | 0.1       | 26             |
| Aspen St        | 24   | 1.9           | 7.6             | 0.1       | 34             |
| Green Acre 2    | 19   | 0.3           | 3.2             | 0.0       | 46             |
| Elm Park        | 15   | 0.5           | 5.8             | 0.1       | 39             |
| Green Acre 1    | 107  | 0.2           | 2.6             | 0.0       | 43             |
| James St        | 14   | 1.6           | 9.5             | 0.1       | 37             |
|                 | 121  | 2.4           | 5.5             | 0.0       | 26             |
| UnawEEP Ave     | 11   | 16.3          | 20.4            | 0.1       | 10             |
| Santa Clara Ave | 8    | 14.3          | 23.7            | 0.1       | 20             |
| Gunnison Blvd   | 6    | 12.4          | 18.5            | 0.1       | 16             |
| Grand Mesa Ave  | 1    | 4.1           | 8.7             | 0.0       | 22             |
| Total           |      | 253.4         | 390.8           | 1.7       | 16             |

Arterial Level of Service  
No Build

3/19/2008

Arterial Level of Service: WB US 50 WB #3

| Cross Street | Node        | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|-------------|---------------|-----------------|-----------|----------------|
| 29 1/4 Rd    | 75          | 1.7           | 12.0            | 0.1       | 44             |
|              | 138         | 2.3           | 10.8            | 0.1       | 36             |
| Sundance Dr  | 71          | 9.7           | 16.2            | 0.1       | 18             |
| 29 Rd        | 68          | 23.5          | 32.2            | 0.1       | 13             |
| Reta Dr      | 66          | 3.9           | 9.6             | 0.1       | 28             |
| Elm Dr       | 64          | 1.4           | 16.7            | 0.2       | 41             |
| Dee Vee Dr   | 62          | 0.1           | 2.0             | 0.0       | 44             |
| Indiana St   | 61          | 0.5           | 4.5             | 0.1       | 45             |
| Tennessee St | 59          | 0.7           | 5.7             | 0.1       | 49             |
| 28 1/2 Rd    | 51          | 12.8          | 26.2            | 0.2       | 29             |
|              | Fairgrounds | 49            | 8.8             | 47.0      | 0.6            |
| 27 3/4 Rd    | 127         | 1.3           | 10.0            | 0.1       | 39             |
|              | 46          | 7.4           | 17.6            | 0.1       | 26             |
| US 50 EB #2  | 130         | 2.6           | 11.0            | 0.1       | 34             |
|              | 117         | 1.5           | 14.3            | 0.2       | 41             |
| Total        |             | 78.2          | 235.9           | 2.2       | 33             |

Arterial Level of Service: EB US 50 EB #2

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| 27 3/4 Rd    | 110  | 45.7          | 66.7            | 0.3       | 14             |
| Fairgrounds  | 109  | 7.5           | 26.1            | 0.2       | 33             |
|              | 136  | 0.6           | 5.0             | 0.1       | 43             |
| KOA          | 112  | 3.5           | 20.0            | 0.2       | 45             |
| 28 1/2 Rd    | 54   | 20.1          | 39.2            | 0.3       | 28             |
| Rainbow Dr   | 113  | 6.5           | 16.8            | 0.2       | 34             |
| Dee Vee Dr   | 115  | 4.2           | 16.4            | 0.2       | 42             |
| Reta Dr      | 56   | 11.3          | 27.4            | 0.2       | 31             |
| 29 Rd        | 116  | 13.4          | 19.7            | 0.1       | 15             |
|              | 133  | 108.4         | 112.4           | 0.1       | 22             |
| Sundance Dr  | 114  | 8.0           | 12.5            | 0.1       | 16             |
| Redrock Rd   | 118  | 9.3           | 18.1            | 0.1       | 24             |
| 29 1/4 Rd    | 119  | 5.6           | 10.6            | 0.1       | 24             |
| US 50 WB #3  | 120  | 8.9           | 21.0            | 0.1       | 25             |
| Total        |      | 252.7         | 412.0           | 2.2       | 26             |

Arterial Level of Service: EB US 50 #4

| Cross Street  | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------|------|---------------|-----------------|-----------|----------------|
| 29 1/2 Rd     | 78   | 3.2           | 11.9            | 0.1       | 39             |
|               | 131  | 1.4           | 7.8             | 0.1       | 45             |
| 29 3/4 Rd     | 80   | 24.9          | 38.4            | 0.2       | 19             |
| 30 Rd         | 84   | 10.2          | 28.4            | 0.3       | 36             |
| S Frontage Rd | 85   | 4.8           | 26.4            | 0.3       | 45             |
|               | 124  | 4.1           | 26.6            | 0.3       | 46             |
| 31 Rd         | 87   | 7.9           | 16.7            | 0.1       | 29             |
| US 50 #5      | 134  | 10.5          | 42.5            | 0.5       | 41             |
| Total         |      | 67.0          | 198.6           | 2.0       | 36             |

Arterial Level of Service: WB US 50 #4

| Cross Street  | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------|------|---------------|-----------------|-----------|----------------|
| 31 Rd         | 87   | 11.0          | 41.9            | 0.5       | 41             |
|               | 124  | 2.1           | 11.2            | 0.1       | 44             |
| S Frontage Rd | 85   | 2.2           | 23.4            | 0.3       | 53             |
| 30 Rd         | 84   | 9.4           | 30.7            | 0.3       | 39             |
| 29 3/4 Rd     | 80   | 15.2          | 33.6            | 0.3       | 31             |
|               | 131  | 3.2           | 16.9            | 0.2       | 44             |
| 29 1/2 Rd     | 78   | 1.4           | 7.8             | 0.1       | 44             |
| US 50 WB #3   | 120  | 0.6           | 11.0            | 0.1       | 42             |
| Total         |      | 45.1          | 176.5           | 2.0       | 41             |

Arterial Level of Service: WB US 50 #6

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| 141B         | 90   | 39.6          | 47.9            | 0.1       | 10             |
| US 50 #5     | 134  | 8.5           | 18.6            | 0.1       | 29             |
| Total        |      | 48.1          | 66.5            | 0.3       | 15             |

Arterial Level of Service: EB US 50 #7

| Cross Street   | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|-----------|----------------|
|                | 111  | 0.0           | 0.0             | 0.1       |                |
| CDOT           | 92   | 1.9           | 8.1             | 0.1       | 49             |
|                | 122  | 3.5           | 34.6            | 0.5       | 49             |
|                | 141  | 5.3           | 39.7            | 0.5       | 47             |
| Willow Bend Rd | 94   | 6.1           | 16.9            | 0.2       | 35             |
|                | 132  | 3.1           | 15.3            | 0.2       | 36             |
| 3247           | 97   | 5.8           | 40.8            | 0.5       | 46             |
| 1st St         | 100  | 2.1           | 6.9             | 0.1       | 52             |
| 3rd St         | 102  | 7.9           | 26.1            | 0.3       | 37             |
| SH 141A        | 104  | 8.0           | 19.5            | 0.2       | 32             |
|                | 72   | 2.1           | 12.2            | 0.1       | 36             |
| Total          |      | 45.9          | 220.0           | 2.7       | 44             |

Arterial Level of Service: WB US 50 #7

| Cross Street   | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|-----------|----------------|
|                | 72   | 1.4           | 6.9             | 0.1       | 37             |
| SH 141A        | 104  | 10.5          | 19.7            | 0.1       | 23             |
| 3rd St         | 102  | 15.7          | 26.8            | 0.2       | 23             |
| 1st St         | 100  | 7.2           | 25.1            | 0.3       | 39             |
| 3247           | 97   | 1.3           | 6.4             | 0.1       | 46             |
|                | 132  | 4.4           | 46.4            | 0.5       | 40             |
| Willow Bend Rd | 94   | 4.4           | 14.9            | 0.2       | 37             |
|                | 141  | 3.1           | 13.9            | 0.2       | 42             |
|                | 122  | 4.4           | 38.7            | 0.5       | 48             |
| CDOT           | 92   | 2.5           | 31.7            | 0.5       | 53             |
|                | 111  | 0.6           | 7.1             | 0.1       | 49             |
| US 50 #5       | 125  | 1.8           | 9.7             | 0.1       | 45             |
| Total          |      | 57.4          | 247.4           | 2.8       | 40             |

Arterial Level of Service: EB US 50 #5

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
|              | 139  | 1.8           | 5.6             | 0.1       | 33             |
|              | 140  | 3.5           | 12.5            | 0.1       | 40             |
| US 50 #7     | 125  | 1.7           | 8.2             | 0.1       | 38             |
| Total        |      | 7.1           | 26.3            | 0.3       | 38             |