



# HUNTERTOWN SUB-AREA ANALYSIS



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## Introduction:

The main purpose of a corridor and impact analysis is to evaluate traffic impacts of future developments on an existing corridor. The corridor analysis estimates the number of new trips from anticipated developments that will be added to an existing facility to examine the changes in level of service (LOS). LOS is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. LOS is based upon the average stopped delay per vehicle for various movements within the intersection. LOS “A” describes operations with very low delays, most vehicles do not stop at all. LOS “C” describes operations with longer delays, stopping vehicles are significant but many still pass without stopping. LOS “F” describes operations with delays unacceptable to most drivers, the intersection is exceeding capacity.

Table 1 and 2 show the LOS and the corresponding delay as given in the Highway Capacity Manual Special Report 209, 2010. When service levels fall below acceptable levels, recommendations are tested to accommodate future traffic and relieve anticipated congestion problems along the corridor. Information provided by a corridor and impact analysis helps in developing a corridor protection plan that can be an efficient tool for mitigating potential congestion. Corridor and impact analysis also identify problem areas and develop recommendations for roadway improvements.

**Table 1. Level of Service Criteria for Signalized Intersections**

| Level of Service | Average Stopped Delay Per Vehicle (sec) |
|------------------|-----------------------------------------|
| A                | $\leq 10.0$                             |
| B                | $> 10.0$ and $\leq 20.0$                |
| C                | $> 20.0$ and $\leq 35.0$                |
| D                | $> 35.0$ and $\leq 55.0$                |
| E                | $> 55.0$ and $\leq 80.0$                |
| F                | $> 80.0$                                |

**Table 2. Level of Service Criteria for Unsignalized Intersections**

| Level of Service | Average Stopped Delay Per Vehicle (sec) |
|------------------|-----------------------------------------|
| A                | $\leq 10.0$                             |
| B                | $> 10.0$ and $\leq 15.0$                |
| C                | $> 15.0$ and $\leq 25.0$                |
| D                | $> 25.0$ and $\leq 35.0$                |
| E                | $> 35.0$ and $\leq 50.0$                |
| F                | $> 50.0$                                |

## Methodology

The intersections were analyzed using Synchro 10. The analyses were performed for three different levels of land use development including existing conditions, phase I developments, and phase II developments. Phase I focuses on proposed/approved land use developments and phase II focuses on potential developments on currently vacant land within the defined study area. Phase I has a one to five year horizon, while phase II has a five to ten year horizon. In phase II, vacant land is reviewed for development potential, and likely future developments are assessed.

The future developments are based upon surrounding land uses, current zoning, community desires, and staff knowledge of development activity. Various maps, aerial photos, and field surveys assisted in reviewing the

three phases of land use developments. For the phase I and phase II future analyses, projected traffic from future developments was forecasted from the ITE Trip Generation Manual 9th edition. The number of trips was based upon the size and type of each development. After determining the number of trips from each residential or commercial development, the trips were distributed and assigned to the adjacent roads and intersections along the corridor based upon logic and existing travel distribution patterns.

Special attention was paid to the number of trips from multiple commercial developments to exclude internal trips and adjust for pass-by trips, to obtain net new trips. After trip generation, trip distribution and traffic assignment, trips from future developments were added to existing trips. Based upon the distribution patterns, turning volumes for each of the major intersections were established for both phase I and phase II scenarios. The new traffic volumes were used to perform intersection analyses for the phase I and phase II development schemes. When intersection analyses indicated level-of-service beyond LOS “D”, geometric improvement recommendations were developed or were analyzed using Synchro 10. The program was used to optimize existing traffic signal phasing and to analyze potential signalization of currently unsignalized intersections.

# Huntertown Sub-Area Analysis

The study of Huntertown area was initiated by NIRCC in FY19 due to the developments within the area. Three corridors were evaluated as part of the analysis: Hathaway Road, Cedar Canyons Road and Shoaff Road. All three roads are collectors. They are all east/west corridors on the northwest side of Allen County, all partially within the town of Huntertown. The first corridor (Hathaway Road);starts from Hand Road on the west and ends at Corbin Road on the east. The second corridor (Cedar Canyons Road) starts at Old Lima Road and ends east of Coldwater Road. The third corridor (Shoaff Road) starts at Hand Road and ends at Coldwater Road.

This report examines the following scenarios:

- Scenario 1: Existing Traffic Volumes
- Scenario 2: Existing volumes + traffic generated by the proposed developments(Phase I, 0-5 years)
- Scenario 3: Existing volumes + traffic generated by the proposed developments(Phase I) + traffic generated by the areas with a potential for development (Phase II - 5-10 years)

Table 3 shows the three corridors average annual daily traffic (AADT) volumes. With the fluctuations in AADT volumes over the years the average annual growth rate was estimated to be 1.5% along all three corridors. Figures 1 and 2 shows the corridors and impact analysis area boundary. The study focused on two signalized and ten stop controlled intersections along the corridors.

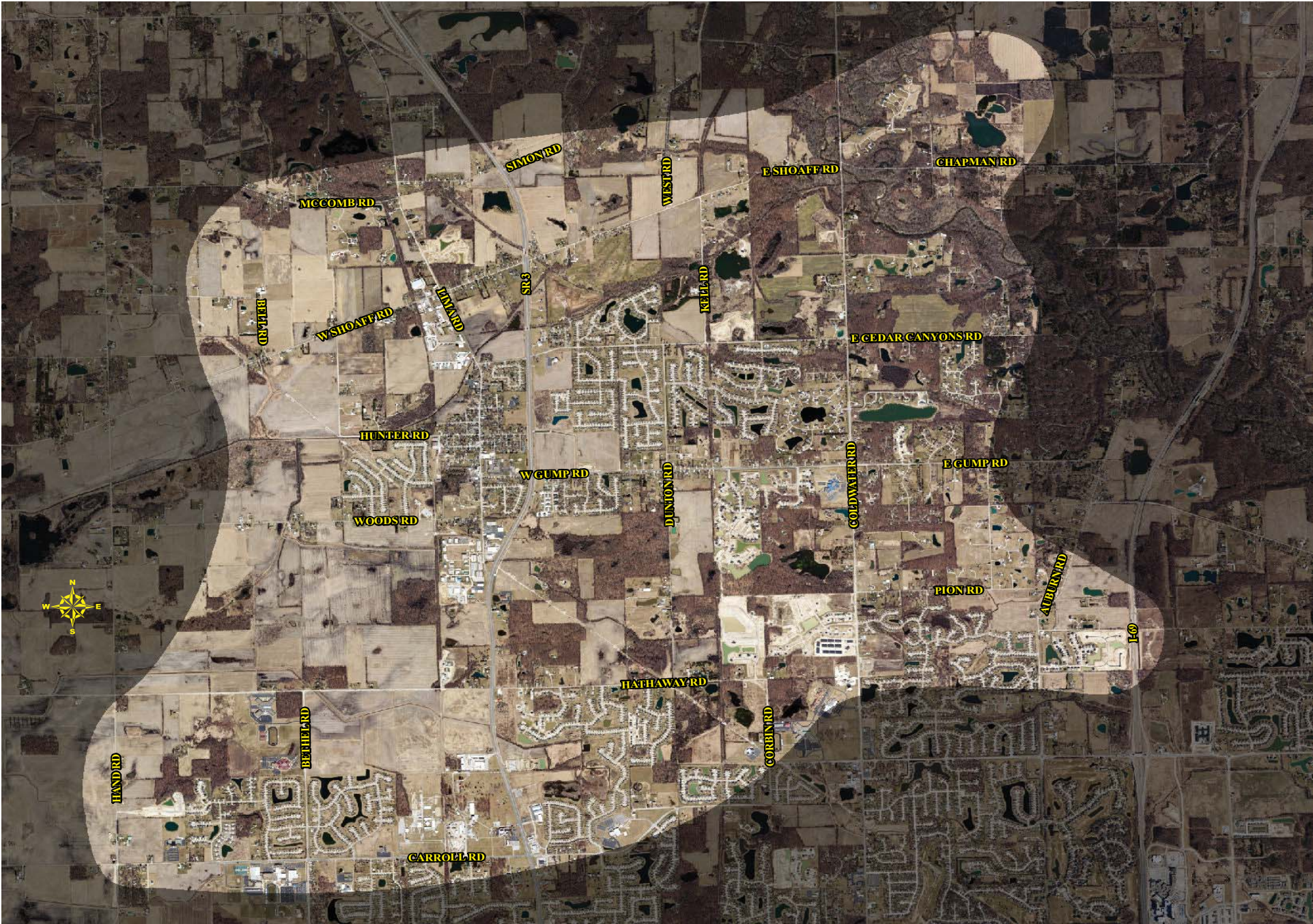
| Table 3: AADT Traffic Volumes      |      |      |
|------------------------------------|------|------|
| Hathaway Road                      |      |      |
| Location                           | AADT | Year |
| Hand Road to Bethel Road           | 1140 | 2018 |
| Bethel Road to State Road 3        | 2910 | 2018 |
| State Road 3 to Dunton Road        | 3570 | 2017 |
| Dunton Road to Corbin Road         | 1830 | 2013 |
| Cedar Canyons Road                 |      |      |
| State Road 3 to Dunton Road        | 4430 | 2016 |
| Dunton Road to Coldwater Road      | 1820 | 2018 |
| Shoaff Road                        |      |      |
| Hand Road to Malcolm Road          | 950  | 2016 |
| Malcolm Road Road to Old Lima Road | 1170 | 2018 |
| Old Lima Road to State Road 3      | 910  | 2016 |
| State Road 3 to Coldwater Road     | 700  | 2017 |

## Trip Generation

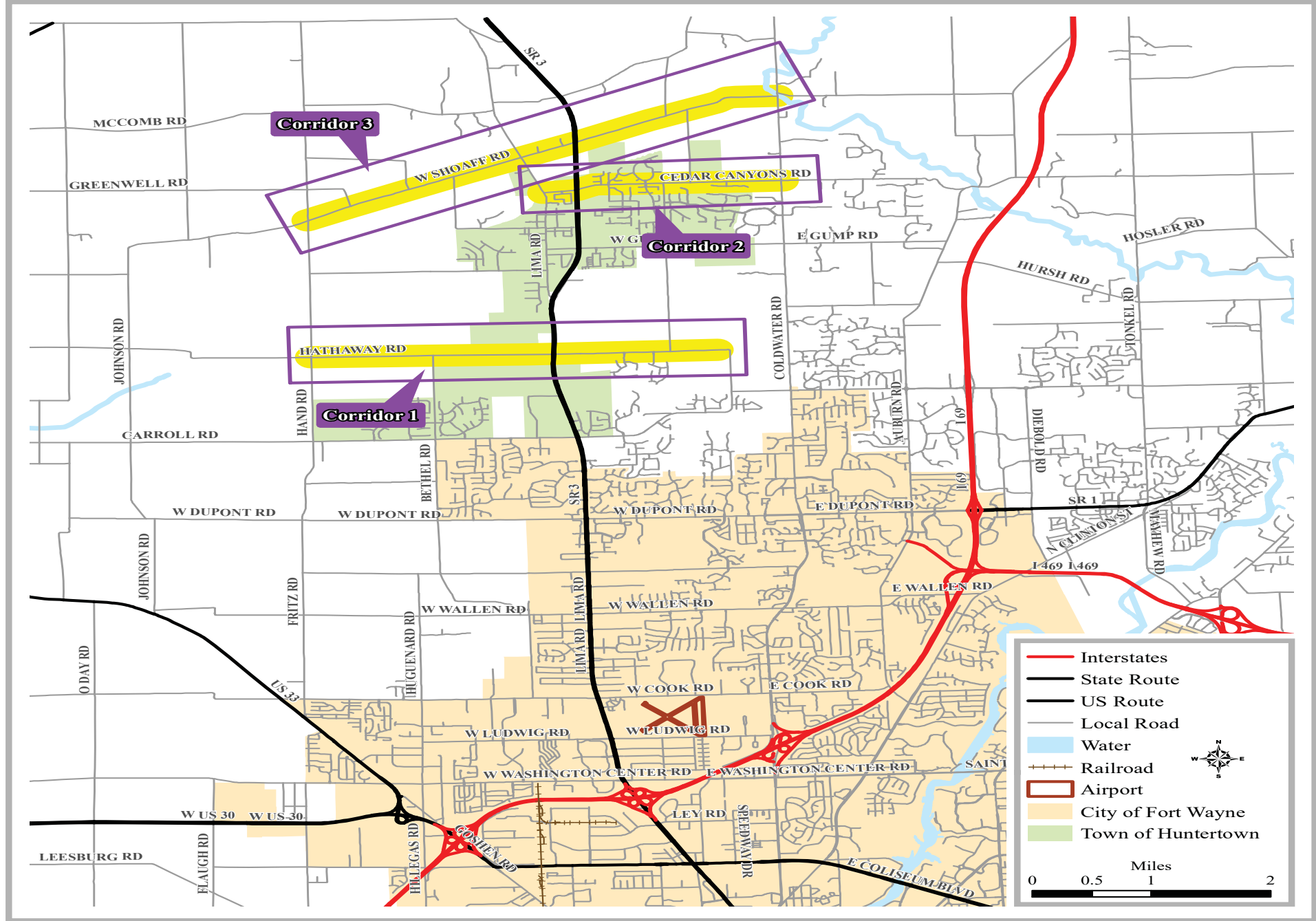
The distribution of the population within the area, the characteristics of the roadway system, and degree of congestion on the corresponding roadway affect the directional distribution of site-generated traffic. The trip distributions for this study area were determined by examining the existing traffic counts, and by evaluating the major traffic generators in the vicinity of the study area.

Figure 1

Huntertown Sub-Area Analysis Area Boundaries



**Figure 2**  
**Huntertown Sub-Area Analysis Corridors**



The ITE Trip Generation Manual, 9th edition was used to forecast the number of new trips from phase I and phase II residential and commercial developments. After determining the number of trips from each residential or commercial development, the trips were distributed and assigned to the adjacent roads and intersections along the corridor based upon existing traffic patterns of distribution as described earlier. The new trips were added to the existing traffic volumes to obtain the turning movement distributions for each intersection for the phase I and phase II scenarios. The new traffic volumes were used to perform the intersection analysis. The developments for are listed in Table 4 & 5 and shows their location in Figure 3. The outputs from Synchro 10 for both a.m./p.m. peaks for each intersection are listed in Appendix A.

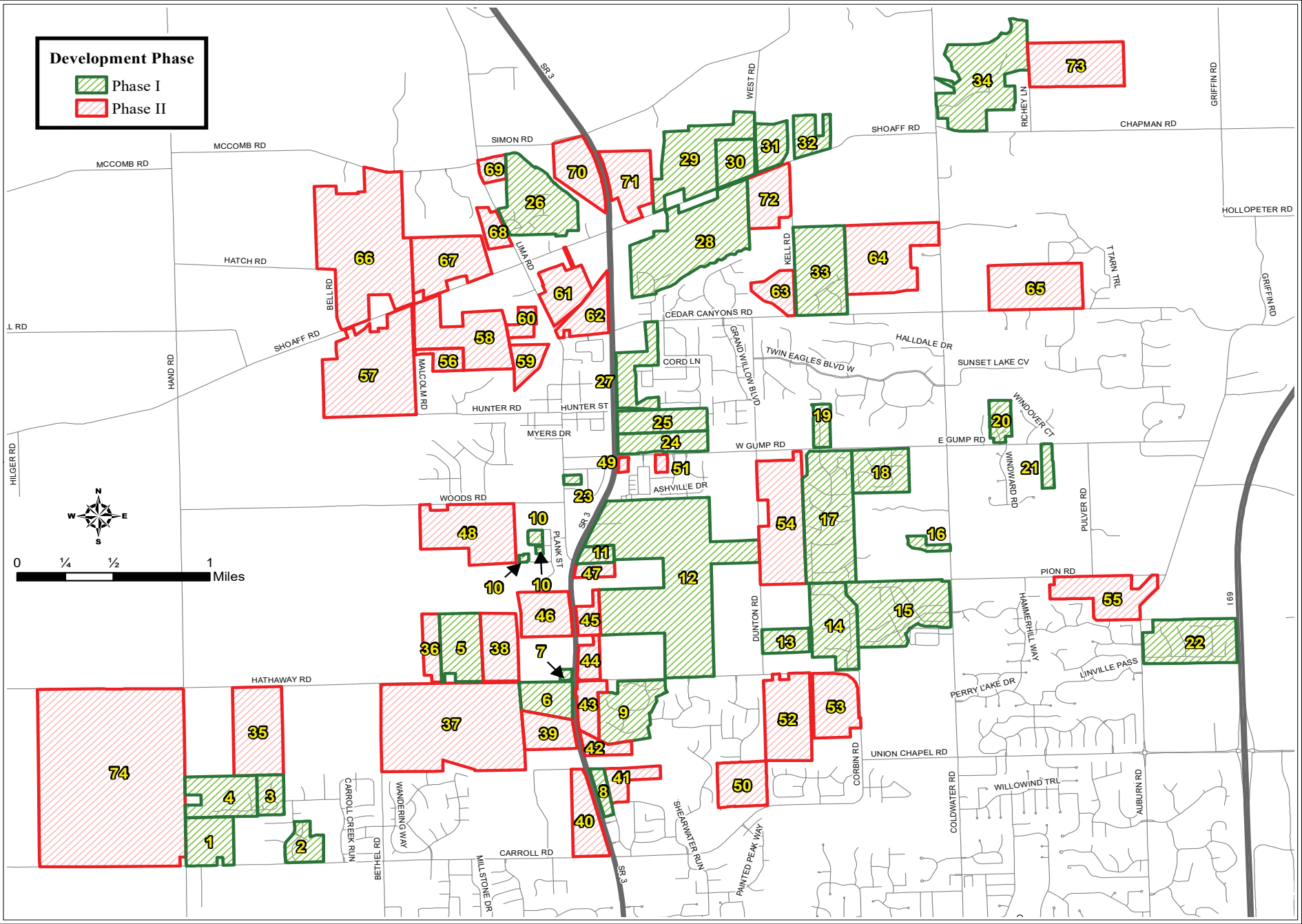
| <b>Table 4: New Trips from Phase I Residential/Commercial Development for SubArea</b> |                   |           |                  |           |
|---------------------------------------------------------------------------------------|-------------------|-----------|------------------|-----------|
| <b>Site</b>                                                                           | <b>Peak-Enter</b> |           | <b>Peak-Exit</b> |           |
|                                                                                       | <b>AM</b>         | <b>PM</b> | <b>AM</b>        | <b>PM</b> |
| 1. Residential ~1 Lots                                                                | 17                | 57        | 51               | 34        |
| 2. Residential ~11 Lots                                                               | 2                 | 7         | 6                | 4         |
| 3. Residential ~5 Lots                                                                | 1                 | 3         | 3                | 2         |
| 4. Residential ~109 Lots                                                              | 20                | 69        | 61               | 40        |
| 5. Elementary School - 51 Acres                                                       | 124               | 63        | 101              | 77        |
| 6. Commercial ~30 Acres                                                               | 481               | 101       | 85               | 404       |
| 7. Commercial ~2 Acres                                                                | 37                | 8         | 6                | 32        |
| 8. Commercial ~10 Acres                                                               | 161               | 34        | 28               | 134       |
| 9. Residential ~14 Lots                                                               | 3                 | 9         | 8                | 5         |
| 10. Industrial ~ 6 Acres                                                              | 7                 | 16        | 48               | 37        |
| 11. Commercial ~10 Acres                                                              | 161               | 34        | 28               | 134       |
| 12. Residential ~920 Lots                                                             | 173               | 580       | 518              | 340       |
| 13. Residential ~6 Lots                                                               | 1                 | 4         | 3                | 2         |
| 14. Residential ~56 Lots                                                              | 11                | 35        | 31               | 21        |
| 15. Residential ~186 Lots                                                             | 35                | 117       | 105              | 69        |
| 16. Residential ~4 Lots                                                               | 1                 | 3         | 2                | 1         |
| 17. Residential ~50 Lots                                                              | 9                 | 32        | 28               | 18        |
| 18. Residential ~26 Lots                                                              | 5                 | 16        | 15               | 10        |
| 19. Residential ~23 Lots                                                              | 4                 | 14        | 13               | 9         |
| 20. Residential ~10 Lots                                                              | 2                 | 6         | 6                | 4         |
| 21. Residential ~9 Acres                                                              | 6                 | 16        | 13               | 8         |
| 22. Residential ~50 Lots                                                              | 29                | 32        | 9                | 18        |
| 23. Residential ~16 Lots                                                              | 3                 | 10        | 9                | 6         |
| 24. Commercial ~30 Acres                                                              | 481               | 101       | 85               | 404       |
| 25. Residential ~35 Acres                                                             | 22                | 63        | 50               | 33        |
| 26. Residential ~138 Lots                                                             | 26                | 87        | 78               | 43        |
| 27. Residential ~25 Acres                                                             | 16                | 46        | 36               | 23        |
| 28. Residential ~317 Lots                                                             | 59                | 200       | 178              | 117       |
| 29. Residential ~50 Acres                                                             | 32                | 90        | 71               | 47        |
| 30. Residential ~20 Acres                                                             | 13                | 36        | 28               | 19        |
| 31. Residential ~20 Acres                                                             | 13                | 36        | 28               | 19        |
| 32. Residential ~5 Lots                                                               | 1                 | 3         | 3                | 2         |
| 33. Residential ~93 Lots                                                              | 17                | 59        | 52               | 34        |
| 34. Residential ~7 Lots                                                               | 1                 | 4         | 4                | 3         |

**Table 5: New Trips from Phase II Residential/Commercial Development for SubArea**

| Site                        | Peak-Enter |     | Peak-Exit |     |
|-----------------------------|------------|-----|-----------|-----|
|                             | AM         | PM  | AM        | PM  |
| 35. Residential ~40 Acres   | 26         | 73  | 57        | 37  |
| 36. Residential ~20 Acres   | 13         | 36  | 28        | 19  |
| 37. Residential ~170 Acres  | 109        | 308 | 241       | 158 |
| 38. Middle School ~46 Acres | 270        | 123 | 221       | 150 |
| 39. Commercial ~30 Acres    | 481        | 101 | 85        | 404 |
| 40. Commercial ~40 Acres    | 641        | 135 | 113       | 539 |
| 41. Residential ~20 Acres   | 13         | 36  | 28        | 19  |
| 42. Commercial ~13 Acres    | 208        | 44  | 37        | 175 |
| 43. Commercial ~23 Acres    | 369        | 77  | 65        | 310 |
| 44. Commercial ~15 Acres    | 240        | 51  | 42        | 202 |
| 45. Commercial ~13 Acres    | 208        | 44  | 37        | 175 |
| 46. Industrial ~ 40 Acres   | 271        | 105 | 48        | 246 |
| 47. Commercial ~10 Acres    | 160        | 34  | 28        | 135 |
| 48. Residential ~75 Acres   | 48         | 136 | 107       | 70  |
| 49. Commercial ~3 Acres     | 40         | 8   | 7         | 34  |
| 50. Residential ~40 Acres   | 26         | 72  | 57        | 37  |
| 51. Commercial ~4 Acres     | 64         | 13  | 11        | 54  |
| 52. Residential ~50 Acres   | 32         | 90  | 71        | 47  |
| 53. Residential ~45 Acres   | 29         | 81  | 64        | 42  |
| 54. Residential ~100 Acres  | 64         | 181 | 142       | 93  |
| 55. Residential ~50 Acres   | 32         | 90  | 71        | 47  |
| 56. Residential ~14 Acres   | 9          | 25  | 20        | 13  |
| 57. Residential ~130 Acres  | 70         | 199 | 156       | 102 |
| 58. Residential ~80 Acres   | 51         | 145 | 114       | 75  |
| 59. Industrial ~ 19 Acres   | 128        | 50  | 23        | 117 |
| 60. Industrial ~ 12 Acres   | 81         | 32  | 14        | 74  |
| 61. Residential ~30 Acres   | 19         | 54  | 43        | 28  |
| 62. Residential ~25 Acres   | 16         | 46  | 36        | 23  |
| 63. Residential ~20 Acres   | 15         | 42  | 32        | 21  |
| 64. Residential ~60 Acres   | 38         | 108 | 86        | 56  |
| 65. Residential ~70 Acres   | 45         | 127 | 99        | 65  |
| 66. Residential ~180 Acres  | 115        | 326 | 256       | 168 |
| 67. Residential ~65 Acres   | 42         | 118 | 92        | 61  |
| 68. Industrial ~ 10 Acres   | 68         | 26  | 12        | 62  |
| 69. Commercial ~11 Acres    | 176        | 37  | 31        | 148 |
| 70. Residential ~20 Acres   | 13         | 36  | 28        | 19  |
| 71. Residential ~35 Acres   | 22         | 63  | 50        | 33  |
| 72. Residential ~35 Acres   | 22         | 63  | 50        | 33  |
| 73. Residential ~45 Acres   | 29         | 81  | 64        | 42  |
| 74. Residential ~200 Lots   | 38         | 126 | 112       | 74  |

Figure 3

Residential/Commercial Developments for Huntertown Sub-Area Analysis for Corridor 1



## **Corridor 1: Hathaway Road from Hand Road to Corbin Road**

### **Existing Analysis**

The existing analysis is based on 2017/2018 turning movement counts and geometric configurations. The analysis is for the a.m. and p.m. peak periods. The outputs from Synchro 10 for both a.m./p.m. peaks for the intersections are listed in Appendix A.

### **Hand Road at Hathaway Road**

#### **Scenario 1: - Existing Conditions**

Hathaway Road and Hand Road are 2-lane facilities. Figure 4 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that this intersection is currently operating at a Level of Service (LOS) “B” for a.m. and p.m. peak hours for eastbound/ westbound movements.

#### **Scenario 2: - Proposed Development Recommendations**

The intersection will operate at a LOS “B” for a.m. and p.m. peak hour with the added trips of phase I for eastbound/ westbound movements. See Figure 5 for the a.m. and p.m. peak volumes, and LOS.

#### **Scenario 3: - Potential Development Recommendations**

The intersection will operate at a LOS “B” for a.m. and p.m. peak hour with the added trips of phase II for eastbound/ westbound movements. See Figure 6 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Hand Rd @ Hathaway Rd</b> |            |            |            |            |                        |
|------------------------------|------------|------------|------------|------------|------------------------|
| <b>AM Peak</b>               | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|                              | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                     | A          | A          | B          | B          | 3.4                    |
| Phase I - Existing Lanes     | A          | A          | B          | B          | 3.8                    |
| Phase II - Existing Lanes    | A          | A          | B          | B          | 4.6                    |

| <b>PM Peak</b>            | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|---------------------------|------------|------------|------------|------------|------------------------|
|                           | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                  | A          | A          | B          | B          | 3.8                    |
| Phase I - Existing Lanes  | A          | A          | B          | B          | 3.6                    |
| Phase II - Existing Lanes | A          | A          | B          | B          | 4.3                    |

Figure 4

Hand Rd / Hathaway Rd Existing Volumes and Lane Configurations (AM/PM Peak)

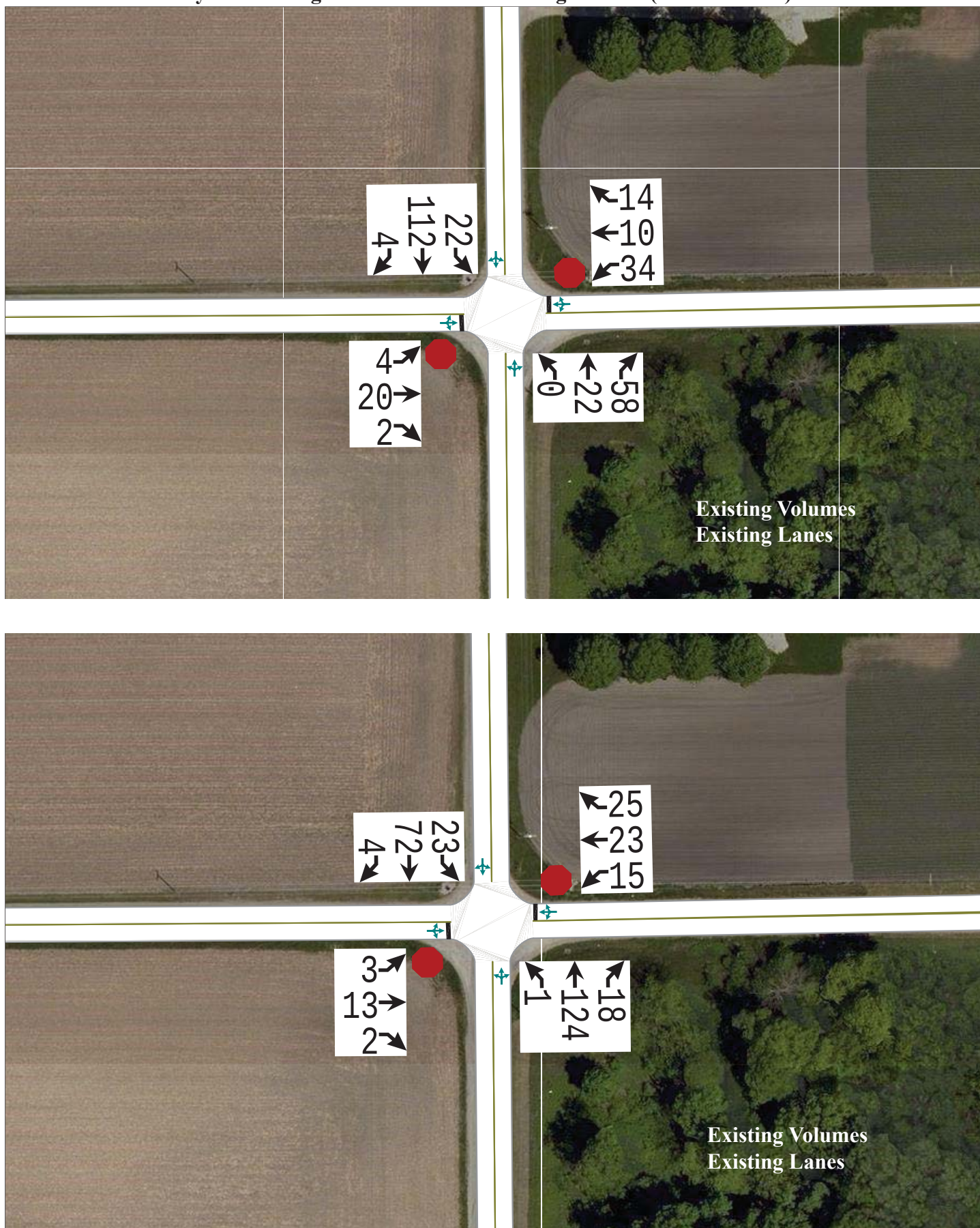


Figure 5

Hand Rd / Hathaway Rd Phase I Volumes and Lane Configurations (AM/PM Peak)

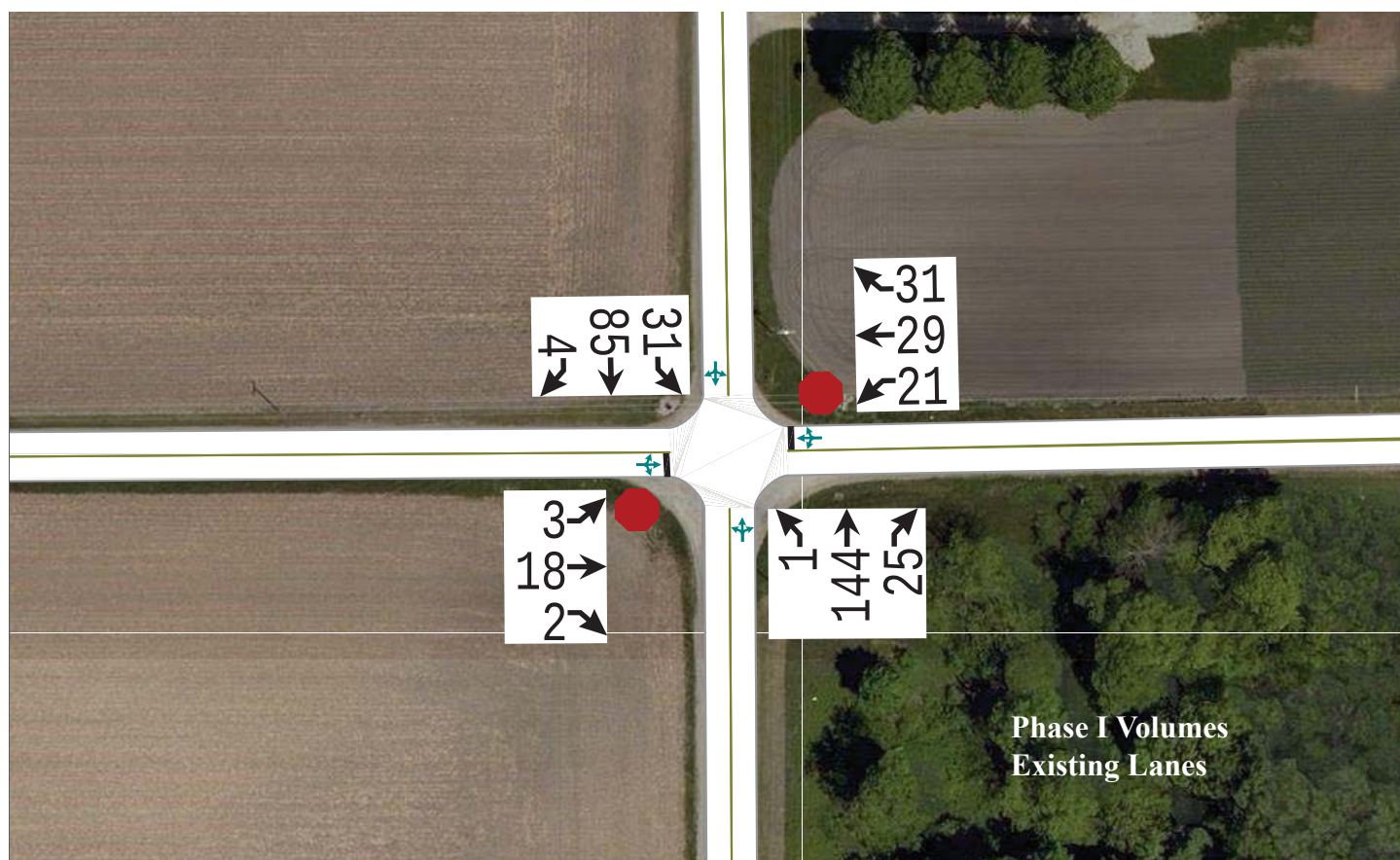
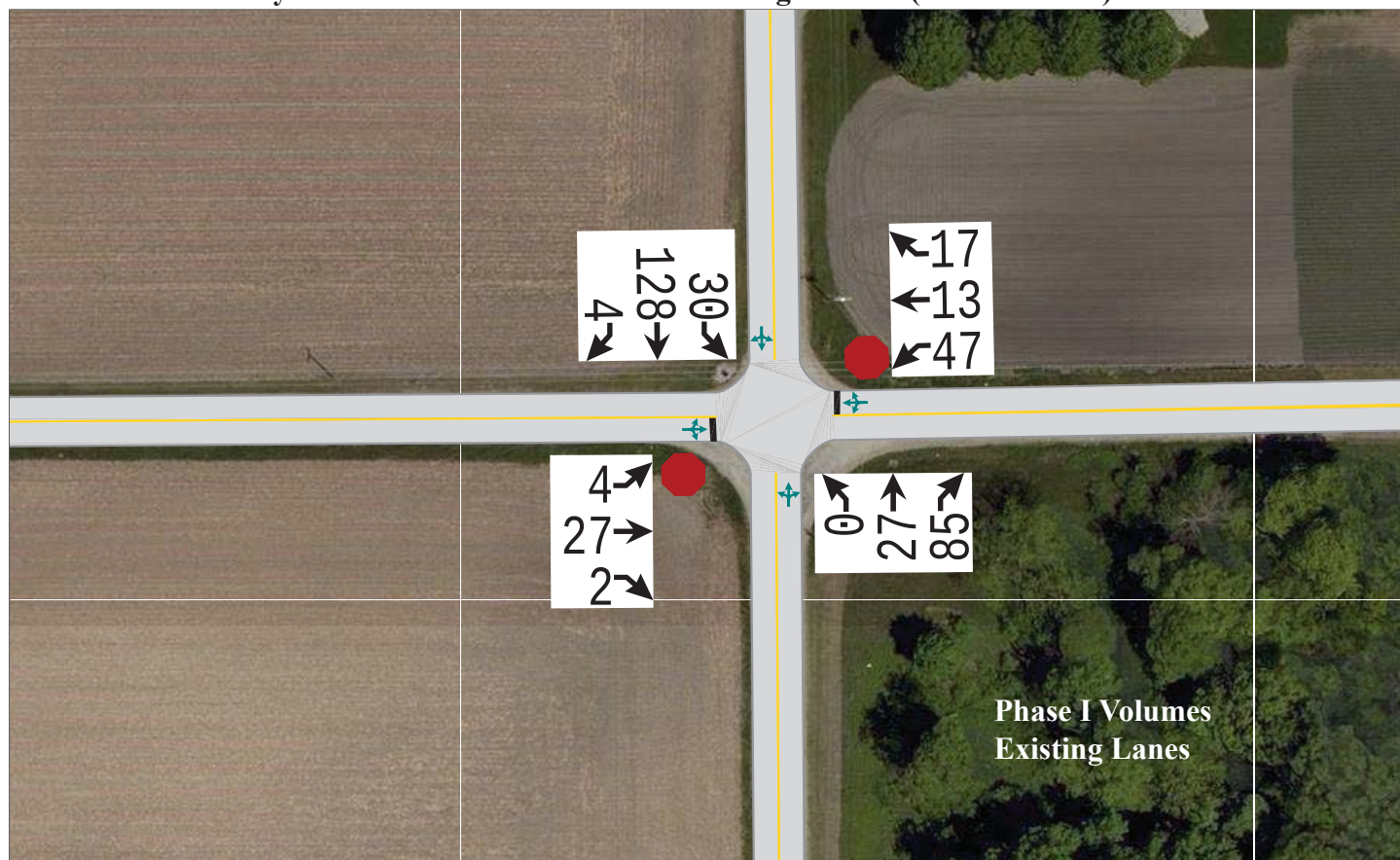
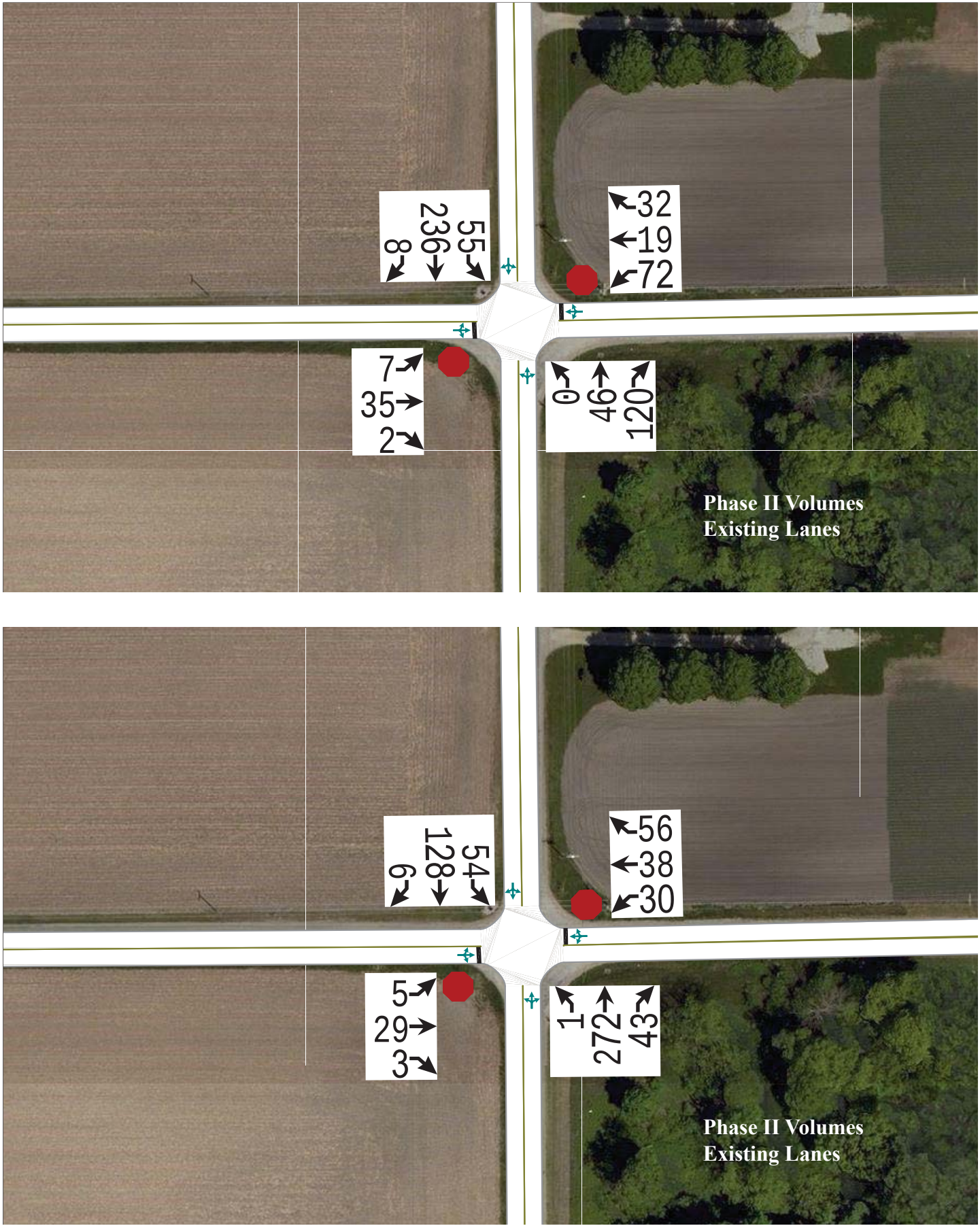


Figure 6

Hand Rd / Hathaway Rd Phase II Volumes and Lane Configurations (AM/PM Peak)



## Bethel Road at Hathaway Road

### Scenario 1: - Existing Conditions

Bethel Road and Hathaway Road are 2-lane facilities. Figure 7 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that this intersection is currently operating at a Level of Service (LOS) “C” for a.m. and “B” for p.m. peak hours for northbound movement.

### Scenario 2: - Proposed Development Recommendations

The intersection will operate at a LOS “B” for a.m. and p.m. peak hours for the northbound movement with the added trips of phase I. See Figure 8 for the a.m. and p.m. peak volumes, and LOS.

### Scenario 3: - Potential Development Recommendations

The intersection will operate at a LOS “C” for a.m. and “B” during the p.m. peak hours for the northbound movement with the added trips of phase II. See Figure 9 for the a.m. and p.m. peak volumes, and LOS.

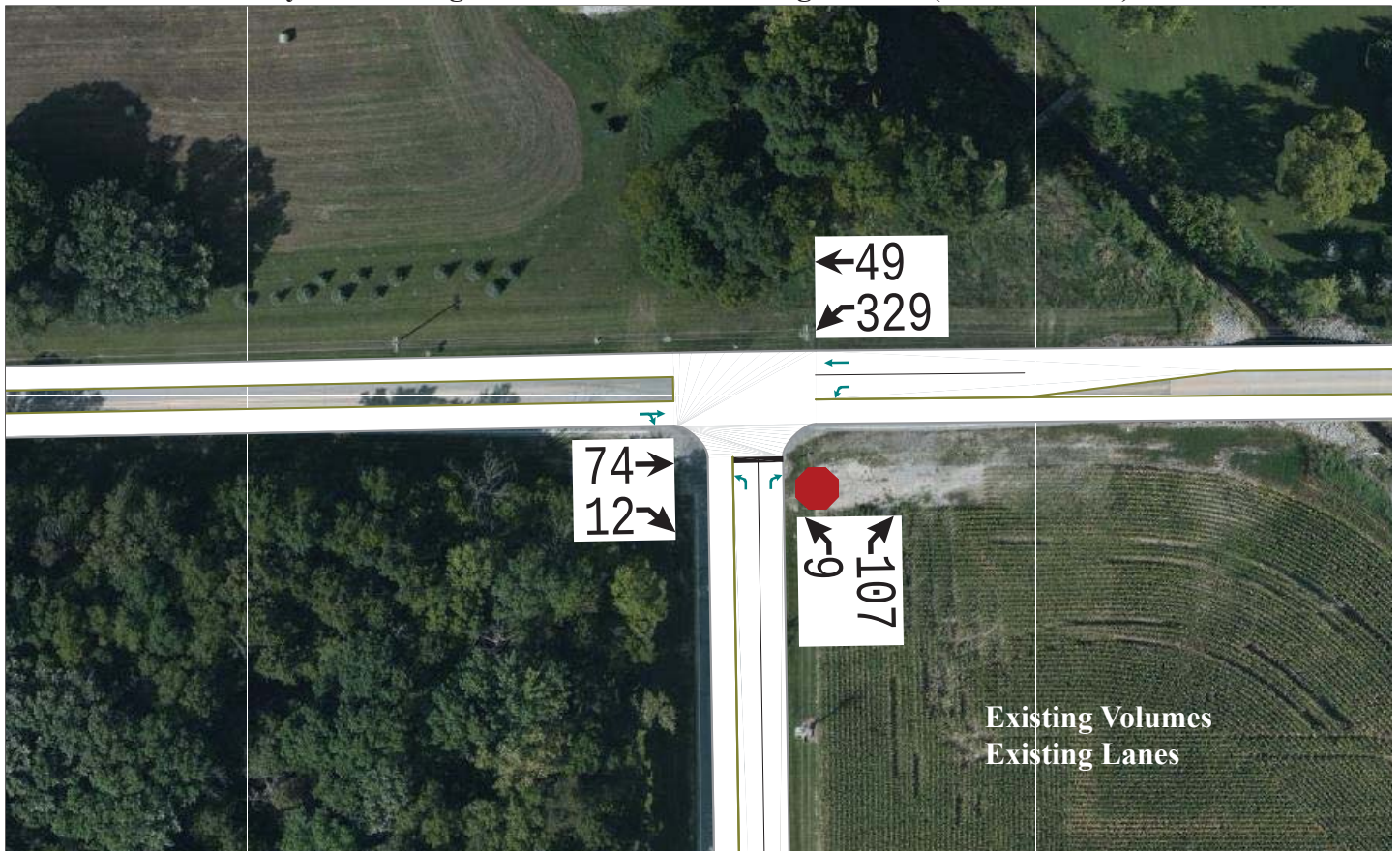
The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Bethel Rd @ Hathaway Rd</b> |            |            |            |                        |
|--------------------------------|------------|------------|------------|------------------------|
| <b>AM Peak</b>                 | <b>NB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|                                | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                       | C          | A          | A          | 7.7                    |
| Phase I - Existing Lanes       | B          | A          | A          | 7.2                    |
| Phase II - Existing Lanes      | C          | A          | A          | 9.0                    |

| <b>PM Peak</b>            | <b>NB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|---------------------------|------------|------------|------------|------------------------|
|                           | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                  | B          | A          | A          | 6.7                    |
| Phase I - Existing Lanes  | B          | A          | A          | 6.6                    |
| Phase II - Existing Lanes | B          | A          | A          | 7.0                    |

Figure 7

Bethel Rd / Hathaway Rd Existing Volumes and Lane Configurations (AM/PM Peak)



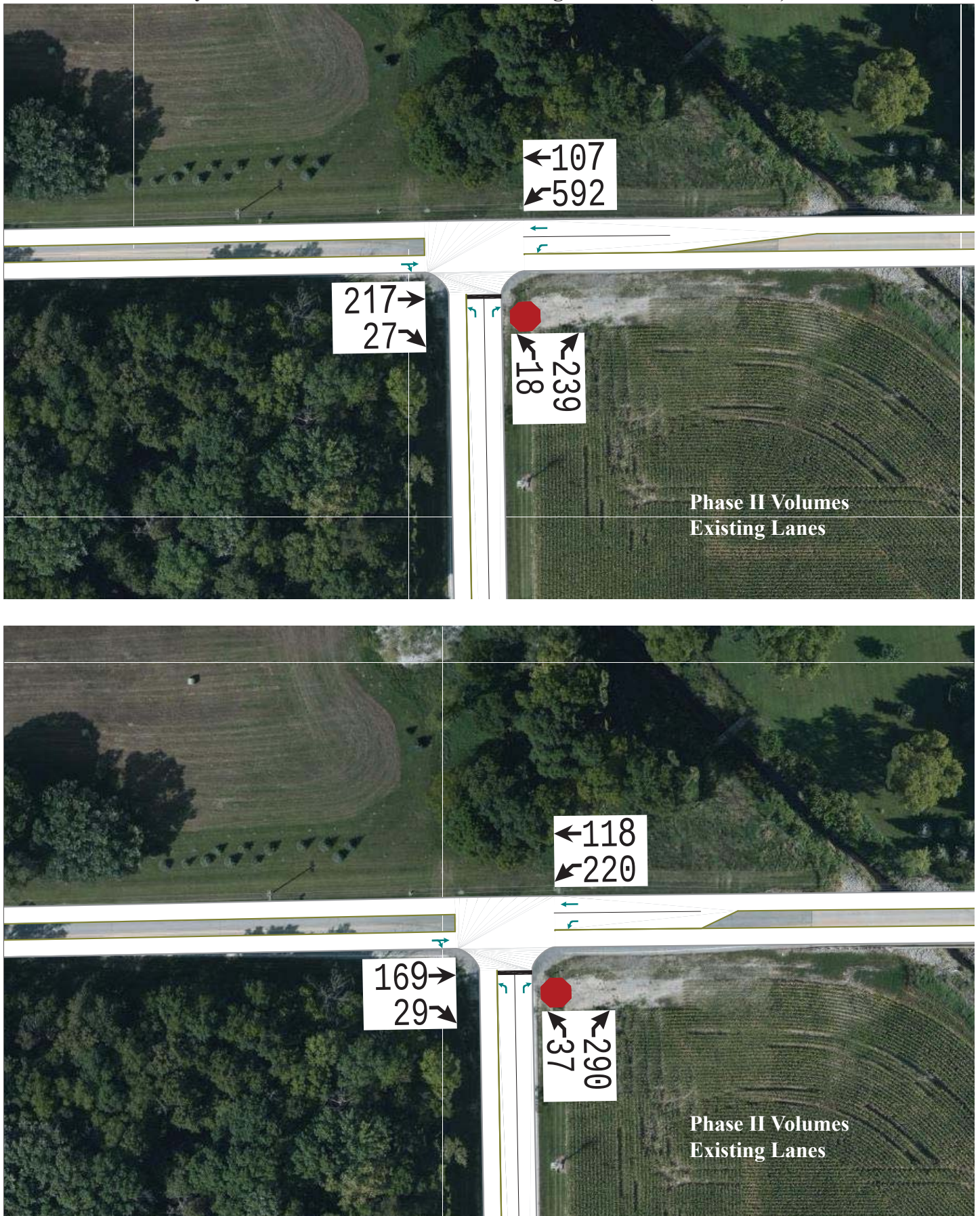
**Figure 8**

**Bethel Rd / Hathaway Rd Phase I Volumes and Lane Configurations (AM/PM Peak)**



Figure 9

Bethel Rd / Hathaway Rd Phase II Volumes and Lane Configurations (AM/PM Peak)



## Hathaway Road at State Road 3

### Scenario 1: - Existing Conditions

Hathaway Rd is a 2-lane facility and State Road 3 is 4 lanes. Figure 10 show the geometry at this intersection, along with the current a.m. and p.m. peak volumes and LOS. The intersection analysis indicates that the intersection is currently operating at a Level of Service (LOS) “D” during the a.m. and “B” during the p.m. peak hours.

### Scenario 2: - Proposed Development Recommendations

The analysis indicates the intersection will operate with the added trips of phase I at a LOS “F” during the a.m. peak and a “E” during the p.m. peak hours. The intersection can be improved to a LOS “D” for a.m. and “C” during the p.m. peak hours with adding an exclusive left and right on the eastbound/westbound approaches and an exclusive right turn lane on the northbound approach. See Figures 11 and 12 for the a.m. and p.m. peak volumes, and LOS.

### Scenario 3: - Potential Development Recommendations

The analysis indicates the intersection will operate at a LOS “F” during the a.m. peak and p.m. peak with the added trips of phase II. The intersection can be improved to a LOS “E” during the a.m. and “D” during the p.m. peak hours, with an added second added exclusive eastbound left turn lane and an additional northbound/southbound through lane. See Figures 13 and 14 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Hathaway Rd @ State Road 3</b> |            |            |            |            |              |
|-----------------------------------|------------|------------|------------|------------|--------------|
| <b>AM Peak</b>                    | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b> |
|                                   | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b>   |
| Existing                          | C          | C          | E          | E          | D            |
| Phase I - Existing Lanes          | D          | F          | F          | F          | F            |
| Phase I - Modified                | C          | D          | D          | E          | D            |
| Phase II - Phase I Lanes          | D          | F          | F          | F          | F            |
| Phase II - Modified               | C          | E          | E          | F          | E            |

| <b>PM Peak</b>           | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b> |
|--------------------------|------------|------------|------------|------------|--------------|
|                          | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b>   |
| Existing                 | B          | B          | C          | C          | B            |
| Phase I - Existing Lanes | F          | D          | F          | C          | E            |
| Phase I - Modified       | C          | C          | E          | C          | C            |
| Phase II - Phase I Lanes | F          | F          | F          | F          | F            |
| Phase II - Modified      | D          | C          | E          | E          | D            |

Figure 10

Hathaway Rd / State Road 3 Existing Volumes and Lane Configurations (AM/PM Peak)

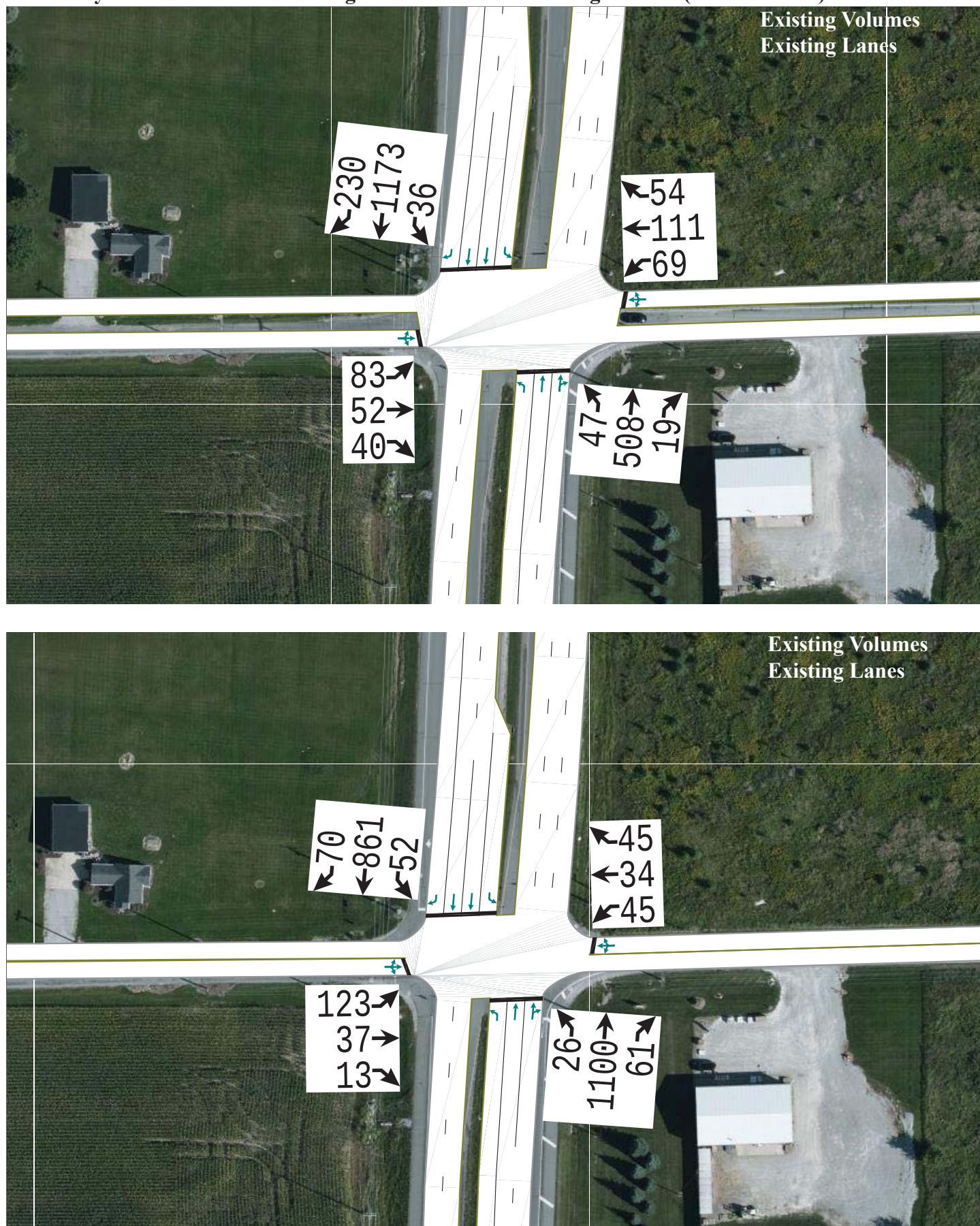


Figure 11

Hathaway Rd / State Road 3 Phase I Volumes and Existing / Proposed Improvements(AM Peak)

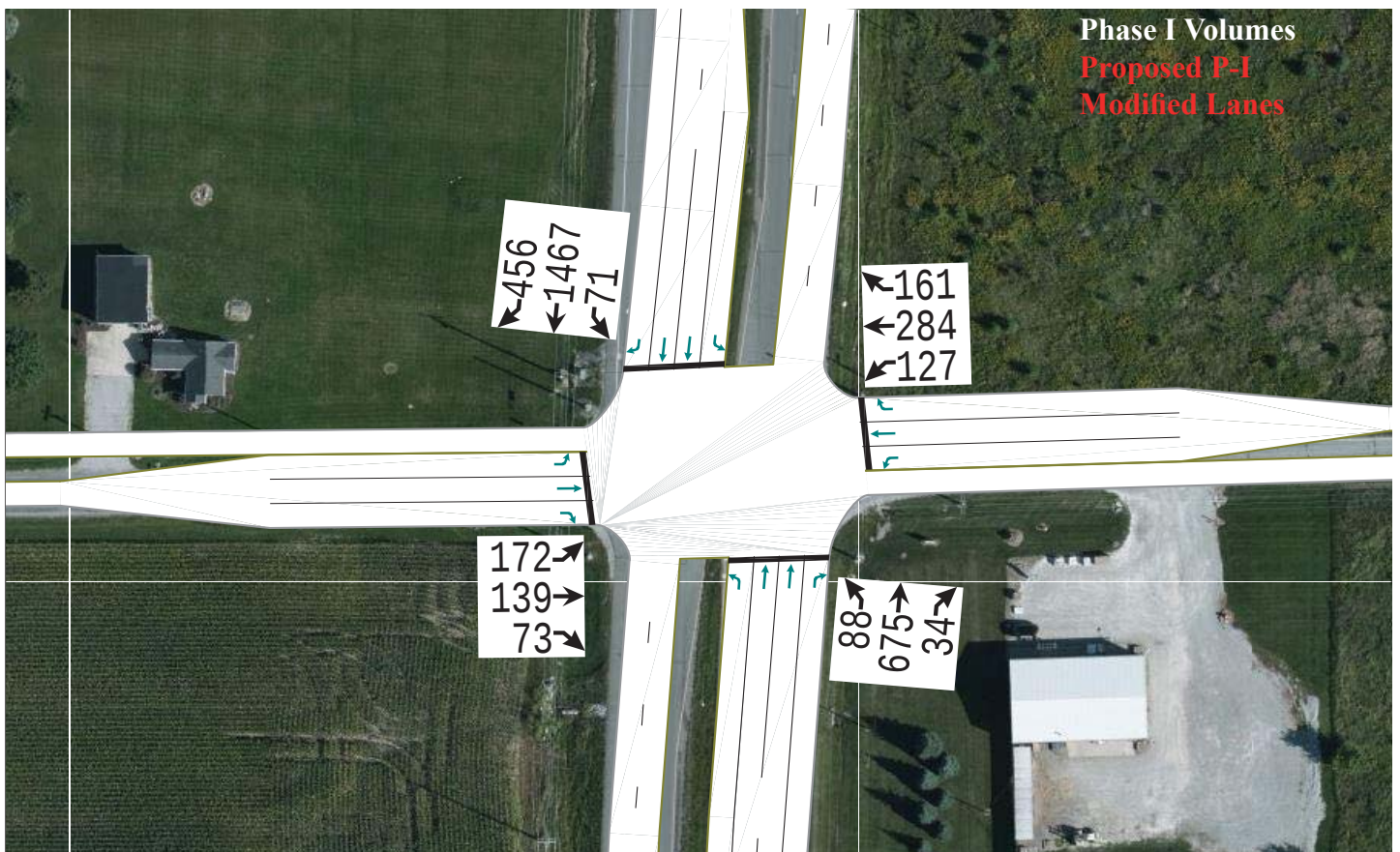
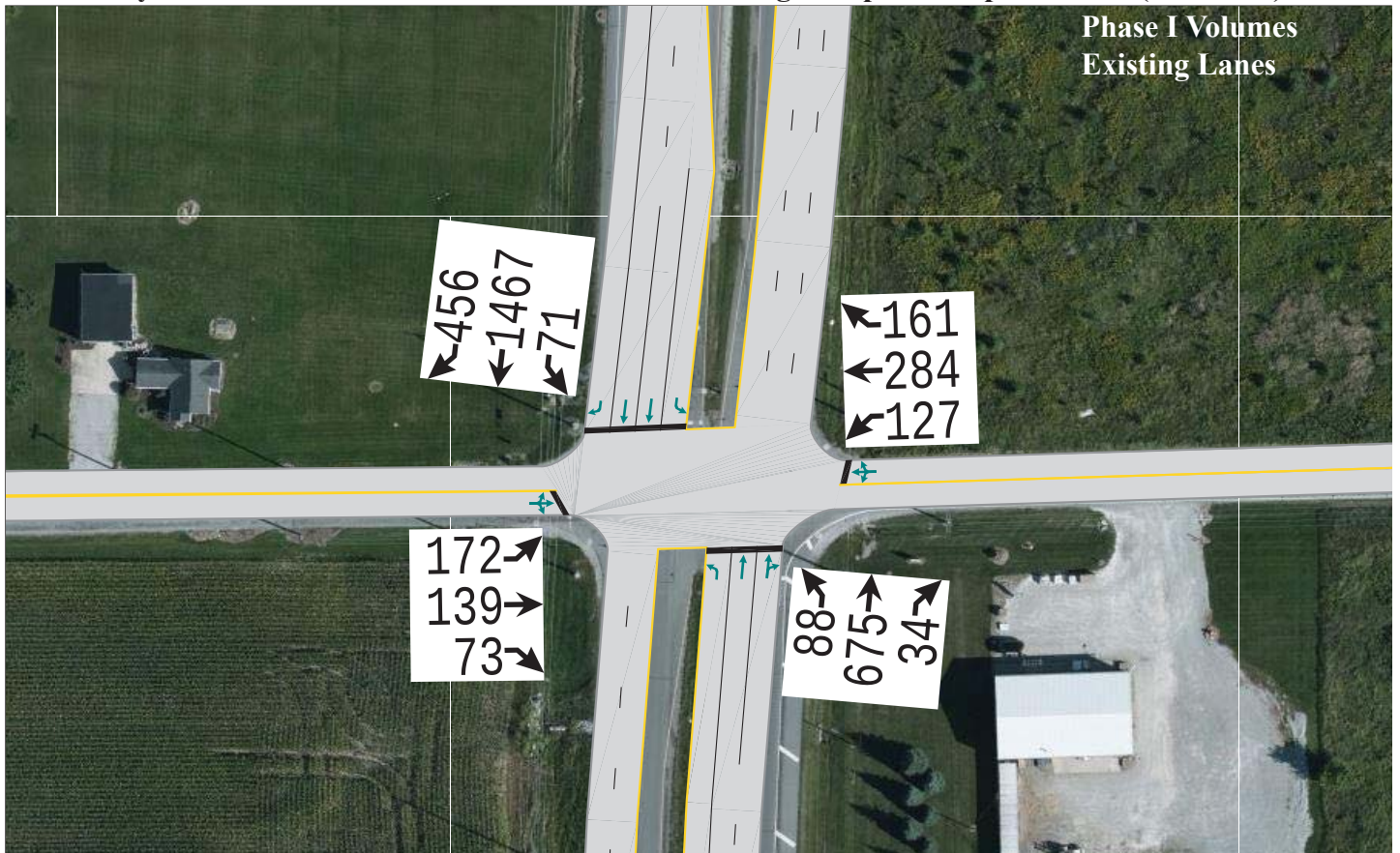


Figure 12

Hathaway Rd / State Road 3 Phase I Volumes and Existing / Proposed Improvements(PM Peak)

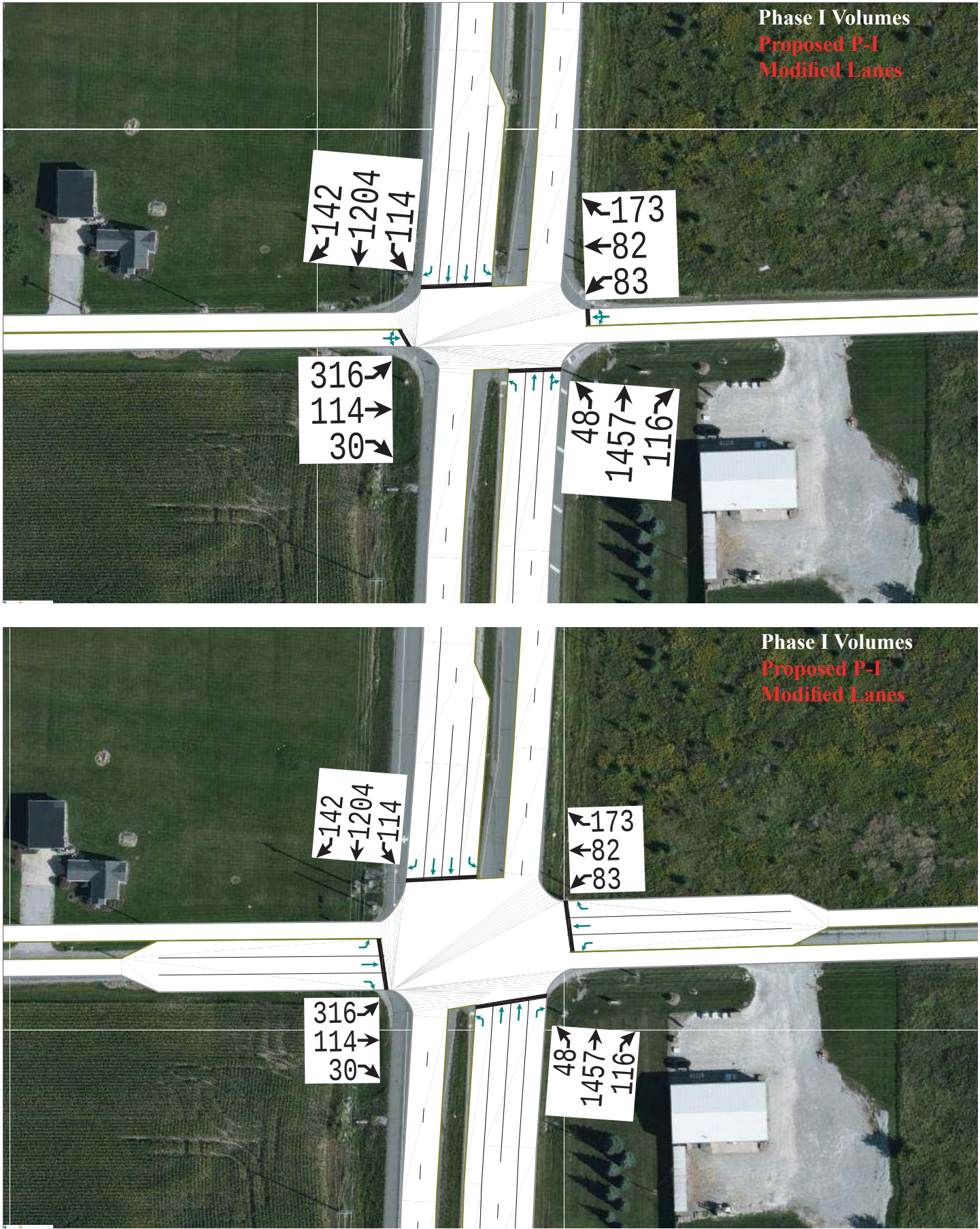


Figure 13

Hathaway Rd / State Road 3 Phase II Volumes and Existing / Proposed Improvements(AM Peak)

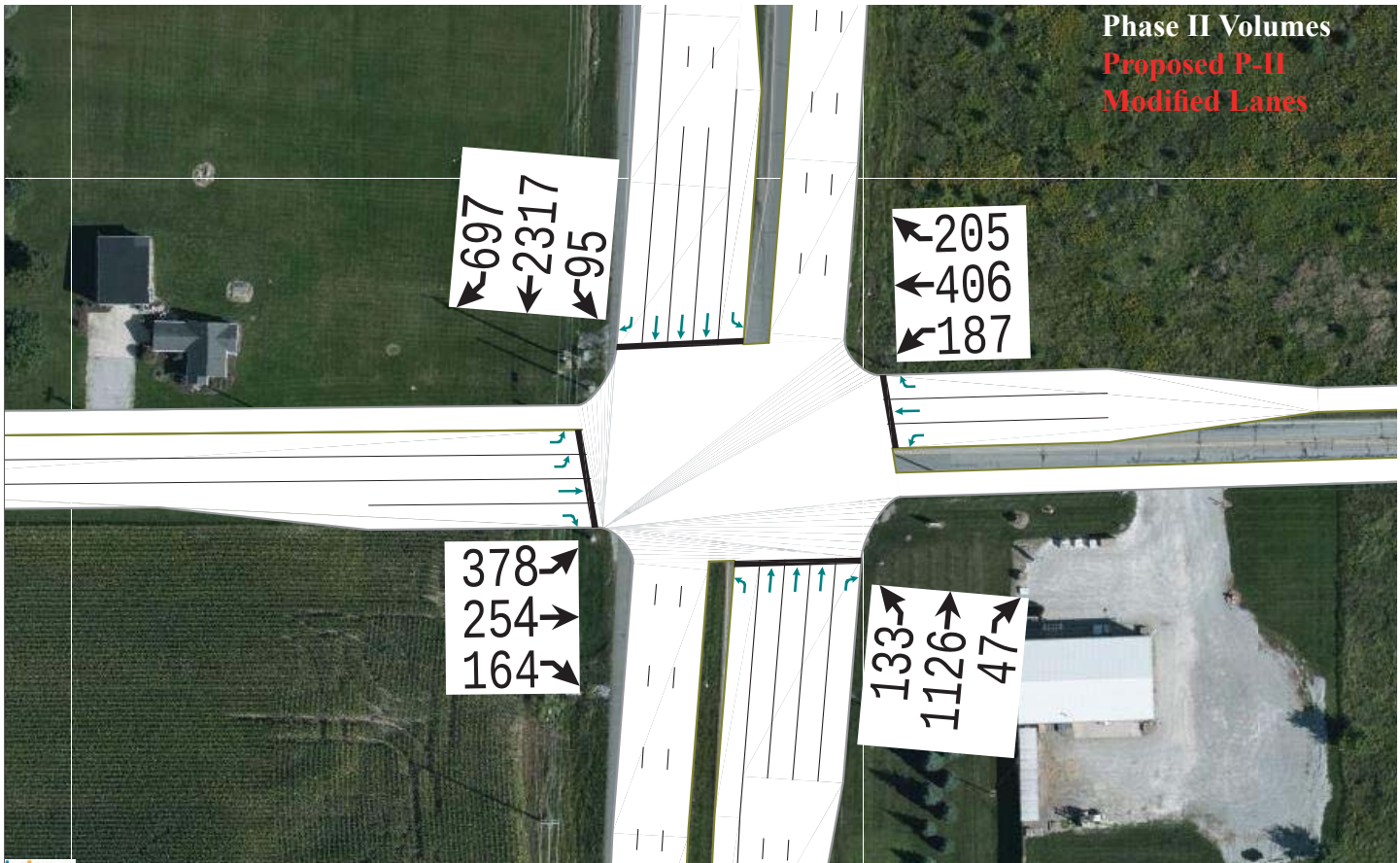
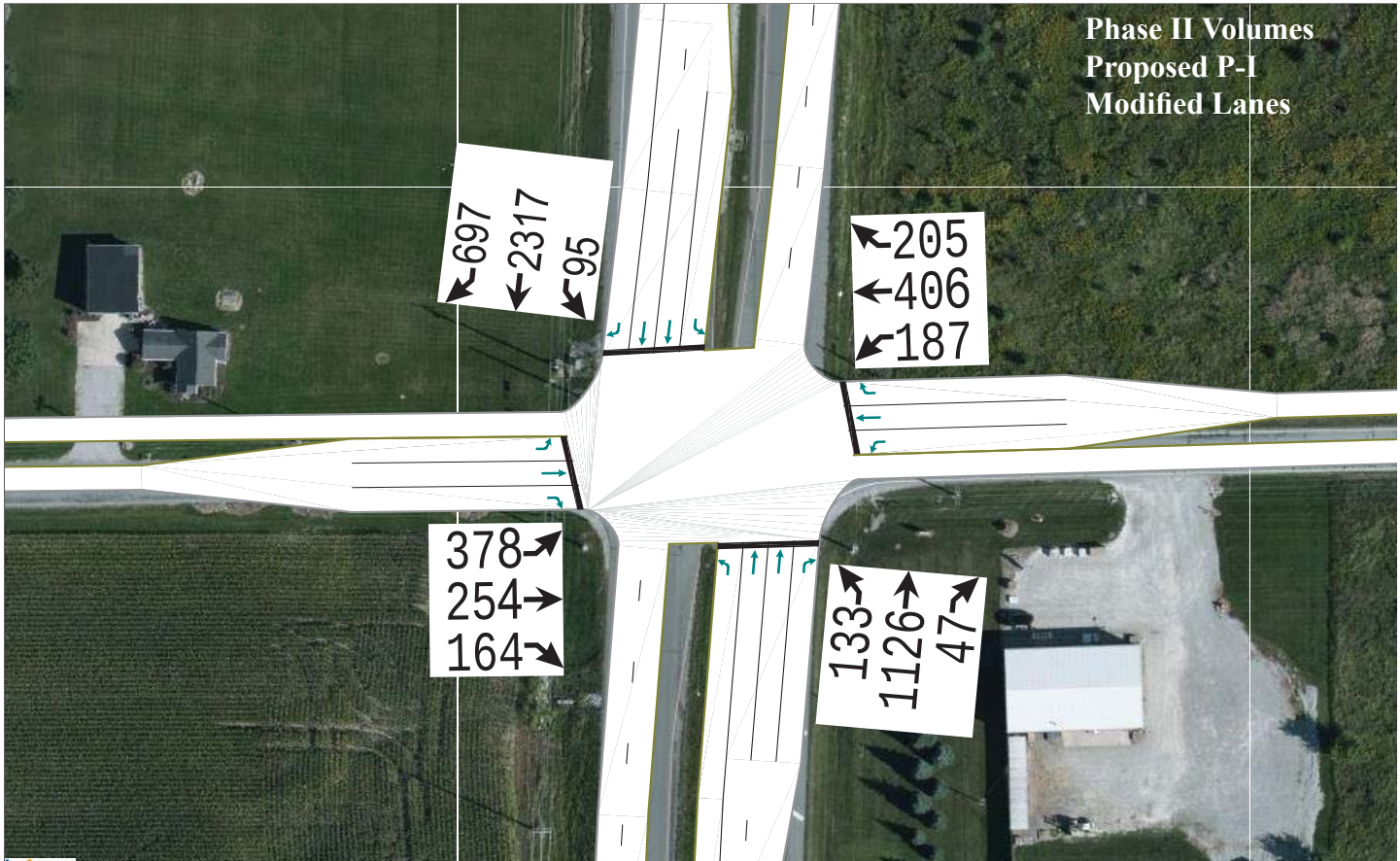
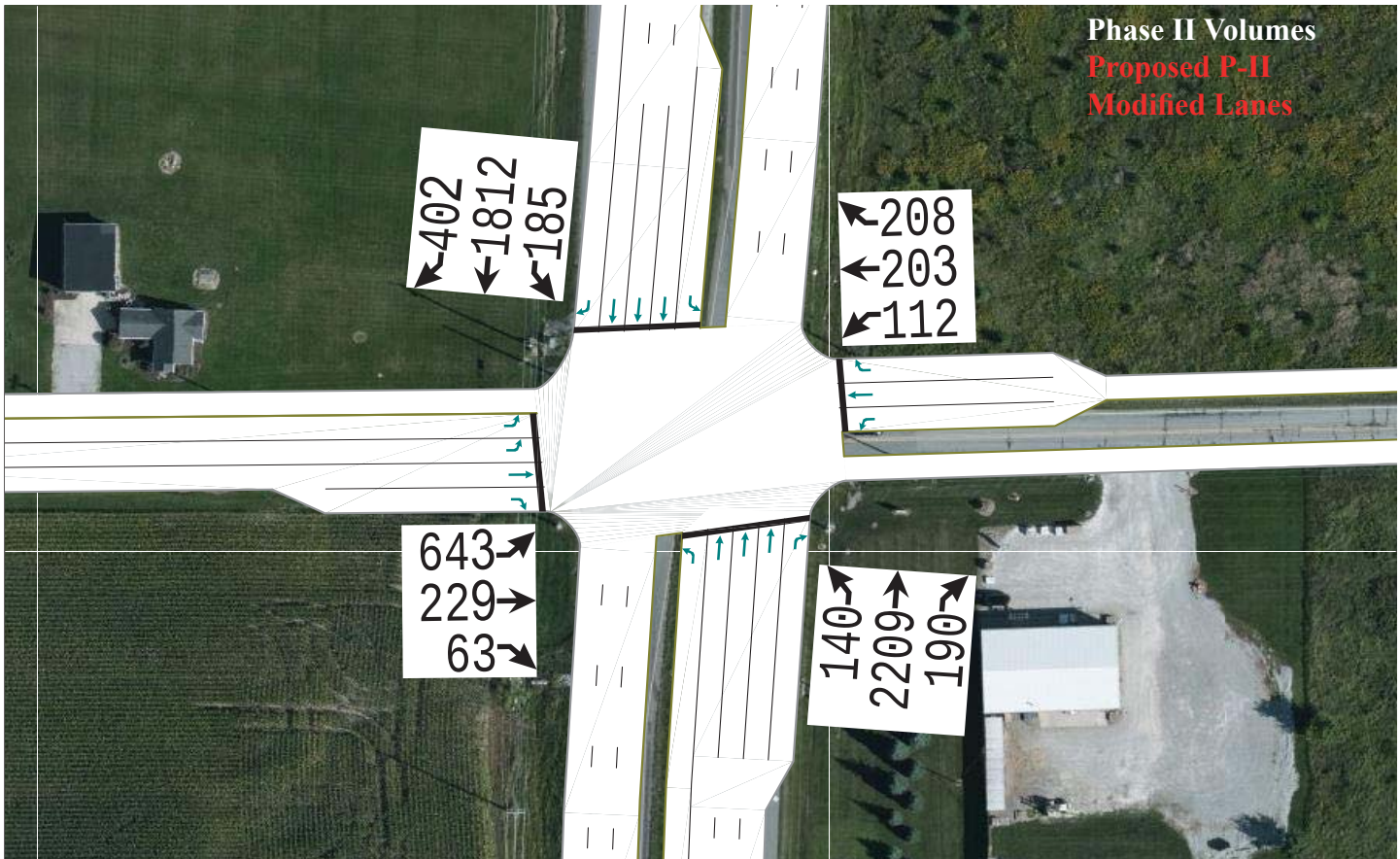
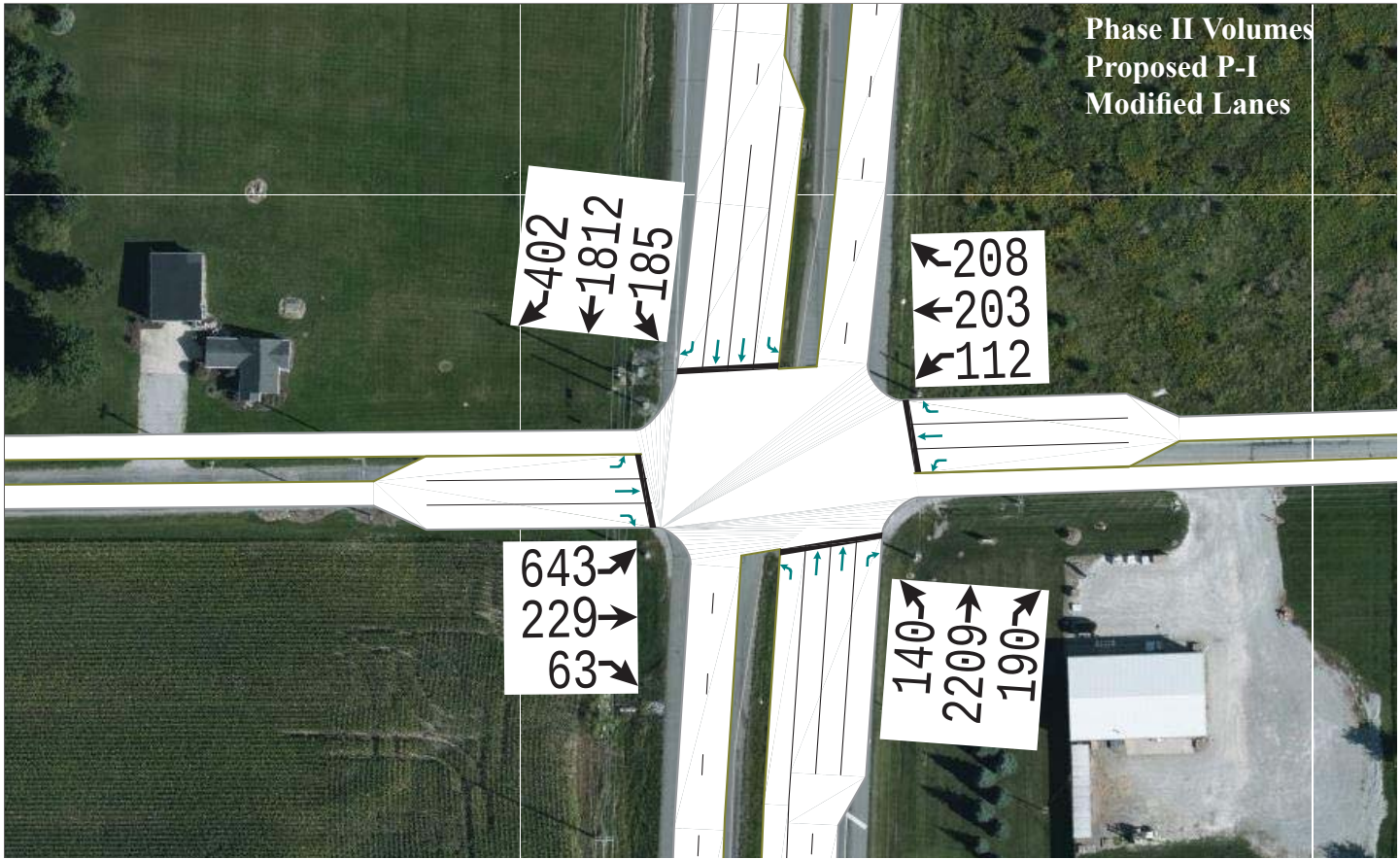


Figure 14

Hathaway Rd / State Road 3 Phase II Volumes and Existing / Proposed Improvements(PM Peak)



## **Dunton Road @ Hathaway Road**

### **Scenario 1: - Existing Conditions**

Dunton Road and Hathaway Road are 2-lane facilities. Figure 15 show the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that southbound is currently operating at a LOS “B” during the a.m. and p.m. peak hours.

### **Scenario 2: - Proposed Development Recommendations**

The intersection analysis indicates that the southbound will operate at a LOS “B” during the a.m. and “C” during p.m. peak hours with the added phase I trips. See Figure 16 for the a.m. and p.m. peak volumes, and LOS.

### **Scenario 3: - Potential Development Recommendations**

The intersection analysis indicates that the southbound will operate at a LOS “D” during the a.m. and “F” during the p.m. peak hours with the added phase II trips. The southbound will be improved to a LOS of “C” during the a.m. and p.m. peak hours, with the planned addition of an exclusive eastbound left turn lane and a exclusive westbound right turn lane. See Figures 17 and 18 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Dunton Rd @ Hathaway Rd</b> |            |            |            |                        |
|--------------------------------|------------|------------|------------|------------------------|
| <b>AM Peak</b>                 | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|                                | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                       | B          | A          | A          | 1.2                    |
| Phase I - Existing Lanes       | B          | A          | A          | 2.1                    |
| Phase II - Existing Lanes      | D          | A          | A          | 5.2                    |
| Phase II - Modified            | C          | A          | A          | 2.9                    |
| <b>PM Peak</b>                 | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|                                | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                       | B          | A          | A          | 1.1                    |
| Phase I - Existing Lanes       | C          | A          | A          | 1.5                    |
| Phase II - Existing Lanes      | F          | A          | A          | 6.8                    |
| Phase II - Modified            | C          | A          | A          | 2.6                    |

Figure 15

Dunton Rd / Hathaway Rd Existing Volumes and Lane Configurations (AM/PM Peak)



Figure 16

Dunton Rd / Hathaway Rd Phase I Volumes and Lane Configurations (AM/PM Peak)



**Figure 17**

**Dunton Rd / Hathaway Rd Phase II Volumes and Existing/Proposed Improvements( (AM)**



Figure 18

Dunton Rd / Hathaway Rd Phase II Volumes and Existing/Proposed Improvements( PM)



## **Corridor 2: Cedar Canyons Road :Old Lima Road to Coldwater Road**

### **Existing Analysis**

The existing analysis is based on 2017/2018 turning movement counts and geometric configurations. The analysis is for the a.m. and p.m. peak periods. The outputs from Synchro 10 for both a.m./p.m. peaks for the intersections are listed in Appendix B.

### **Cedar Canyons Road at Old Lima Road**

#### **Scenario 1: - Existing Conditions**

Cedar Canyons Road and Old Lima Road are 2-lane facilities. Figure 19 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that this intersection is currently operating at a LOS “B” for a.m. and p.m. peak hours for the westbound movement.

#### **Scenario 2: - Proposed Development Recommendations**

The analysis indicates the intersection will operate at a LOS “B” for a.m. and p.m. peak hours with the added trips of phase I during the peak hours for the westbound movement. See Figure 20 for the a.m. and p.m. peak volumes, and LOS.

#### **Scenario 3: - Potential Development Recommendations**

The analysis indicates the intersection will operate at a LOS “F” for a.m. and p.m. with the added trips of phase II during the peak hours for the westbound movement. The westbound movement can be improved to a LOS “D” during the a.m. and “C” during the p.m. peak hours with addition of an exclusive westbound left turn lane. See Figures 21 and 22 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Cedar Canyons Rd @ Old Lima Rd</b> |            |            |            |                        |
|---------------------------------------|------------|------------|------------|------------------------|
| <b>AM Peak</b>                        | <b>NB</b>  | <b>SB</b>  | <b>WB</b>  | <b>Total</b>           |
|                                       | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                              | A          | A          | B          | 3.6                    |
| Phase I - Existing Lanes              | A          | A          | B          | 4.1                    |
| Phase II - Existing I Lanes           | A          | A          | F          | 24.5                   |
| Phase II - Modified                   | A          | A          | D          | 7.4                    |

| <b>PM Peak</b>            | <b>NB</b>  | <b>SB</b>  | <b>WB</b>  | <b>Total</b>           |
|---------------------------|------------|------------|------------|------------------------|
|                           | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                  | A          | A          | B          | 2.8                    |
| Phase I - Existing Lanes  | A          | A          | B          | 3.5                    |
| Phase II - Existing Lanes | A          | A          | F          | 9.3                    |
| Phase II - Modified       | A          | A          | C          | 3.6                    |

Figure 19

Cedar Canyons Rd @ Old Lima Rd Existing Volumes and Lane Configurations (AM/PM Peak)

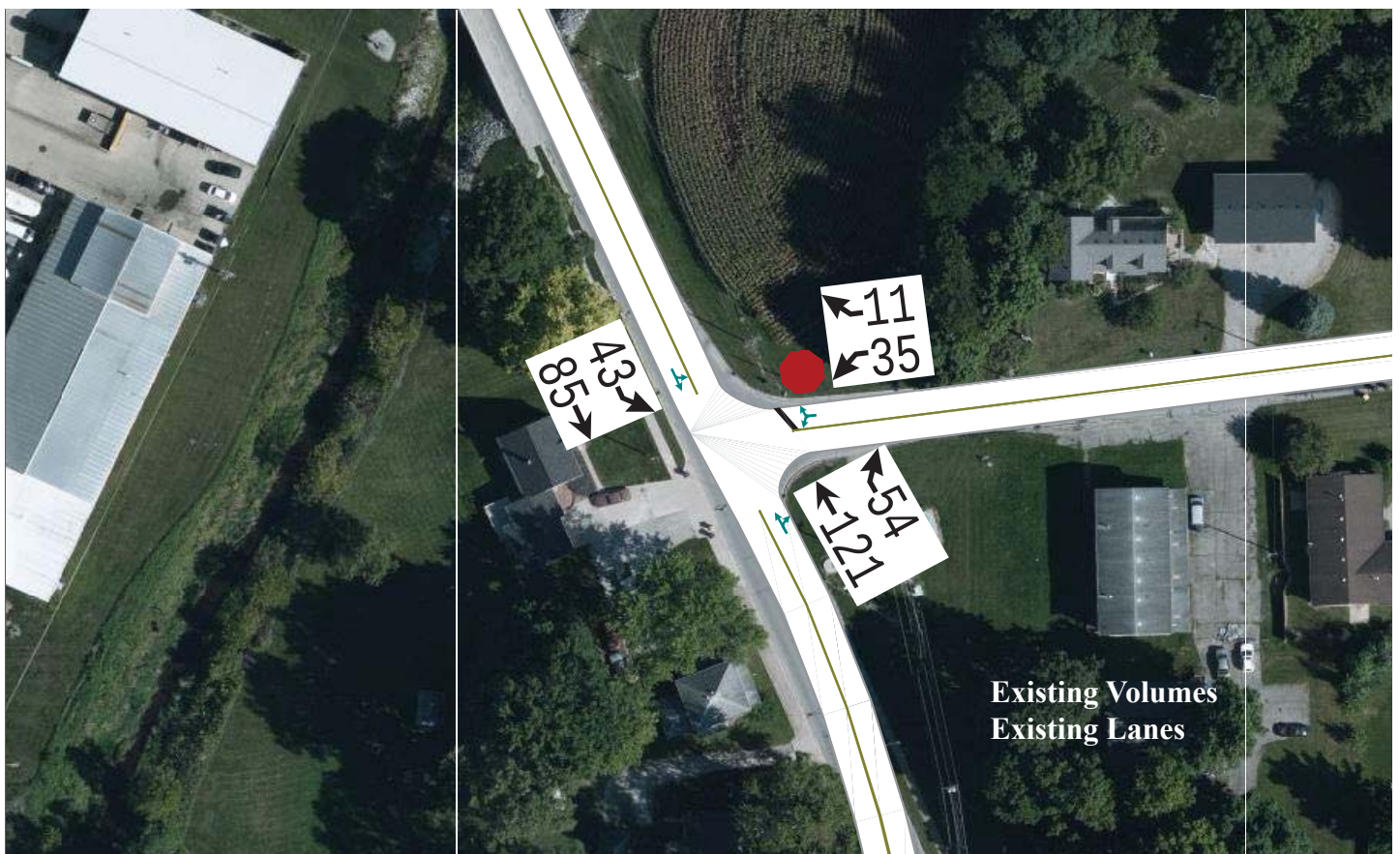


Figure 20

Cedar Canyons Rd @ Old Lima Rd Phase I Volumes and Existing / Proposed Improvements(AM/PM Peak)

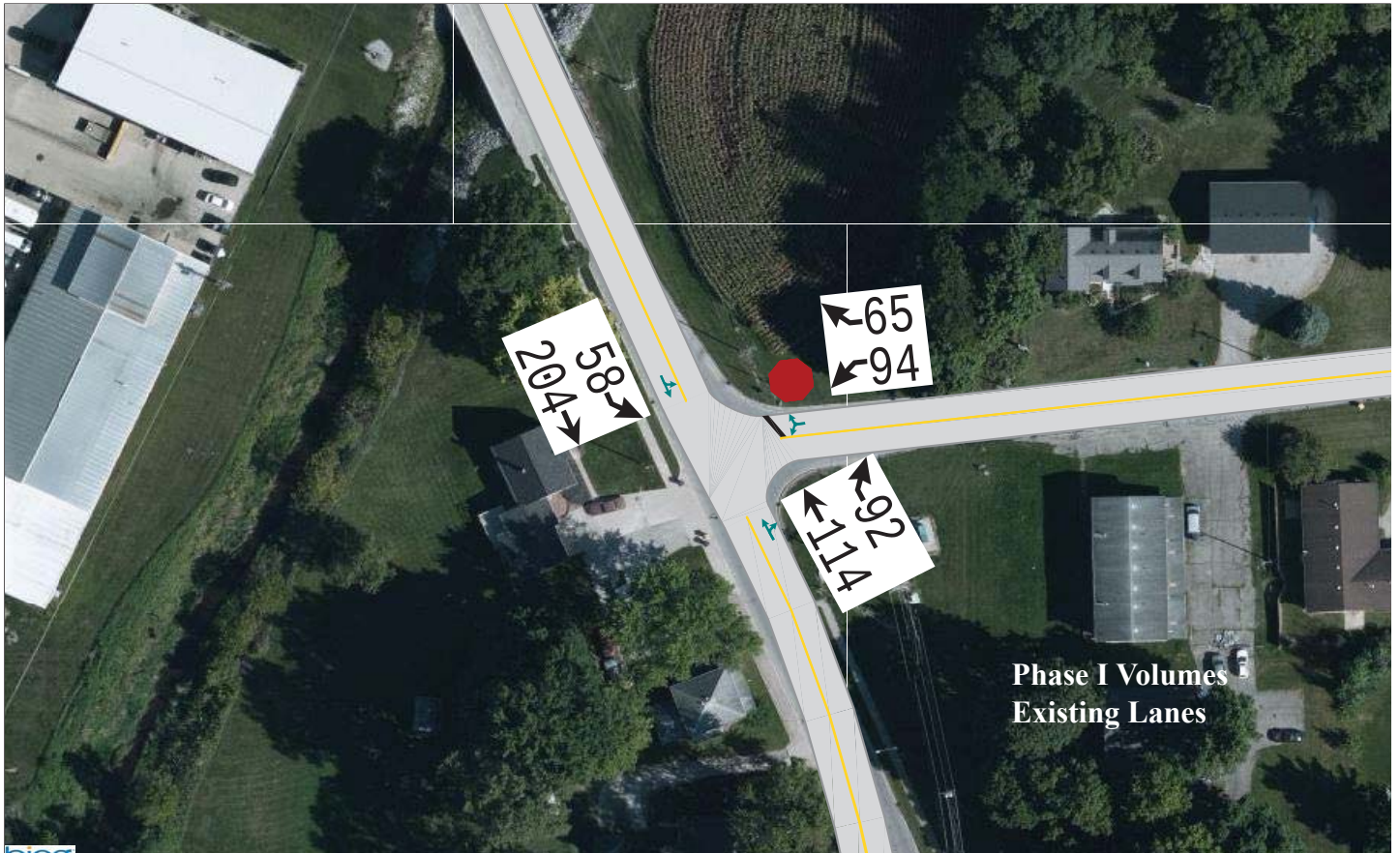


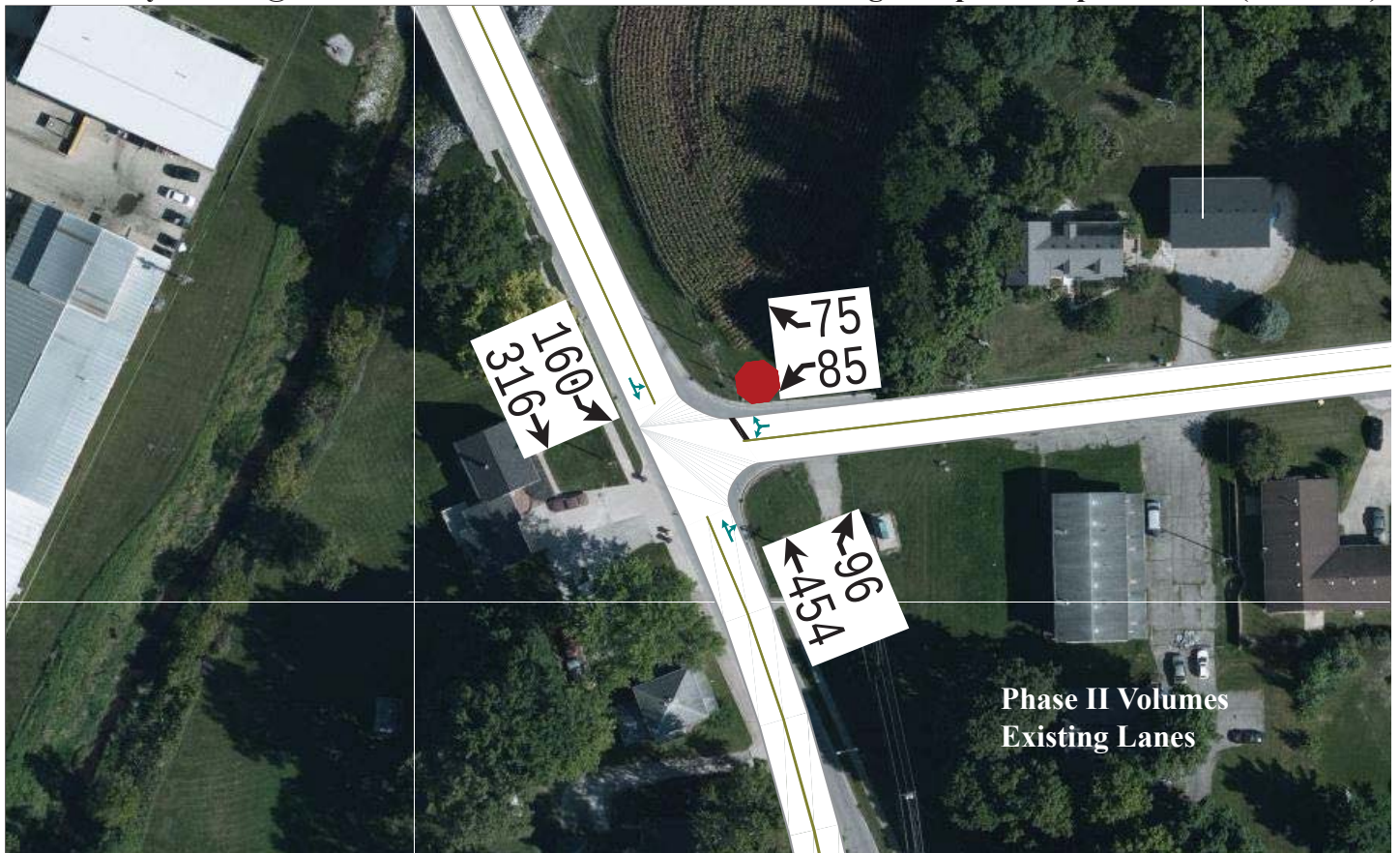
Figure 21

Cedar Canyons Rd @ Old Lima Rd Phase II Volumes and Existing / Proposed Improvements (AM Peak)



Figure 22

Cedar Canyons Rd @ Old Lima Rd Phase II Volumes and Existing / Proposed Improvements (PM Peak)



## Cedar Canyons Road at State Road 3

### Scenario 1: - Existing Conditions

State Road 3 is a 4-lane and Cedar Canyons Road is a 2-lane facilities. Figure 23 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The analysis indicates that this intersection is currently operating at a LOS “B” for a.m. and p.m. peak hours.

### Scenario 2: - Proposed Development Recommendations

The analysis indicates the intersection will operate at a LOS “C” for a.m. and “B” for p.m. peak hours with the added trips of phase I during the peak hours. See Figure 24 for the a.m. and p.m. peak volumes, and LOS.

### Scenario 3: - Potential Development Recommendations

The analysis indicates the intersection will operate at a LOS “F” for a.m. and “D” for p.m. peak hours with the added trips of phase II during the peak hours. The intersection can be improved to a LOS “D” during the a.m. and “C” during the p.m. peak hours with addition of exclusive right turn lanes on the north, south, and west approaches, along with an added exclusive left turn lane on the west approach. See Figures 25 and 26 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Cedar Canyons Rd @ State Road 3</b> |            |            |            |            |              |
|----------------------------------------|------------|------------|------------|------------|--------------|
| <b>AM Peak</b>                         | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b> |
|                                        | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b>   |
| Existing                               | B          | B          | C          | C          | B            |
| Phase I - Existing Lanes               | B          | C          | B          | C          | C            |
| Phase II - Existing Lanes              | D          | F          | C          | F          | F            |
| Phase II - Modified Lanes              | B          | D          | D          | E          | D            |

| <b>PM Peak</b>            | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b> |
|---------------------------|------------|------------|------------|------------|--------------|
|                           | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b>   |
| Existing                  | A          | A          | D          | E          | B            |
| Phase I - Existing Lanes  | B          | B          | C          | C          | B            |
| Phase II - Existing Lanes | E          | C          | D          | E          | D            |
| Phase II - Modified Lanes | C          | B          | D          | D          | C            |

Figure 23

Cedar Canyons Rd @ State Road 3 Existing Volumes and Lane Configurations (AM/PM Peak)

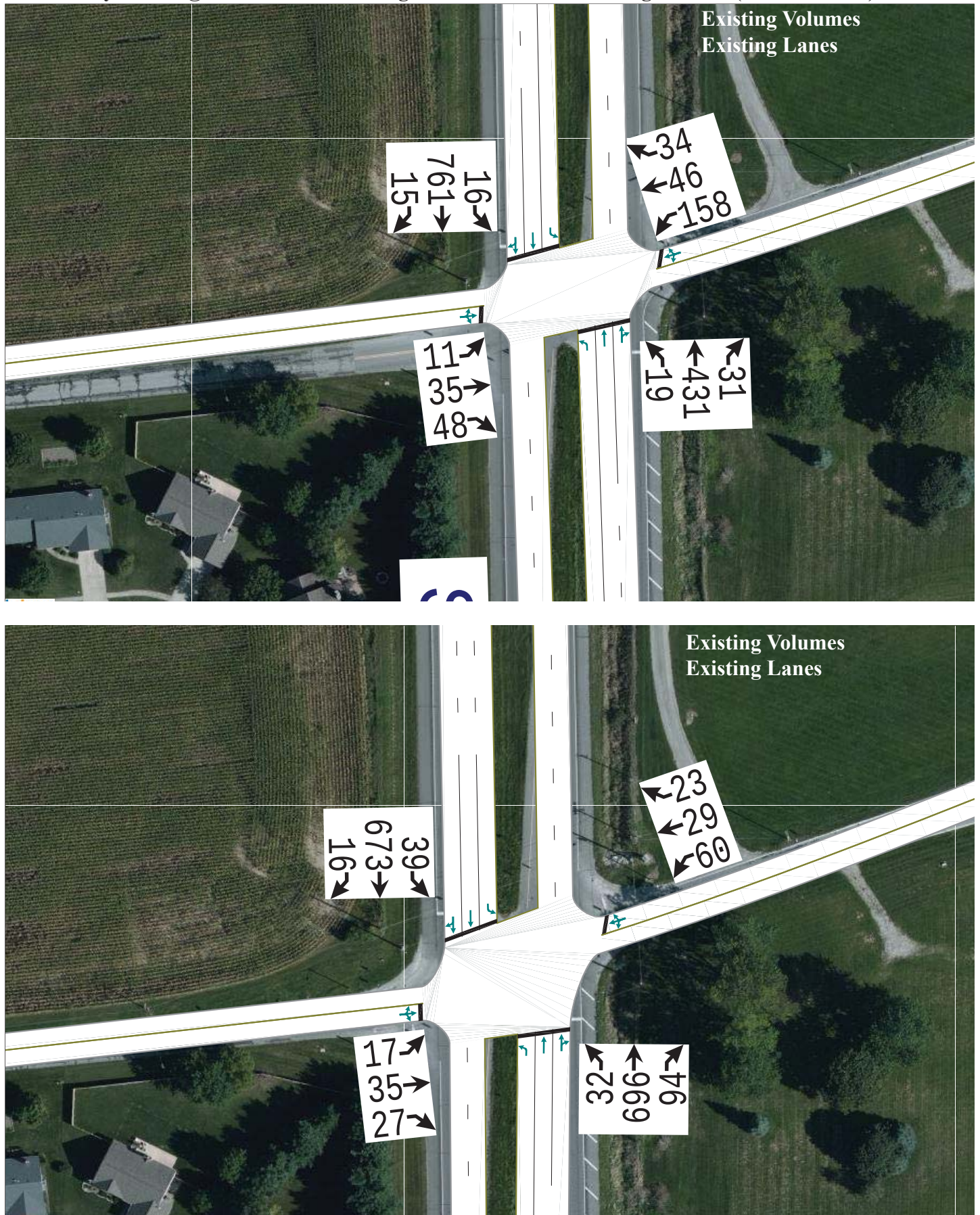


Figure 24

Cedar Canyons Rd @ State Road 3 Phase I Volumes and Lane Configurations (AM/PM Peak)

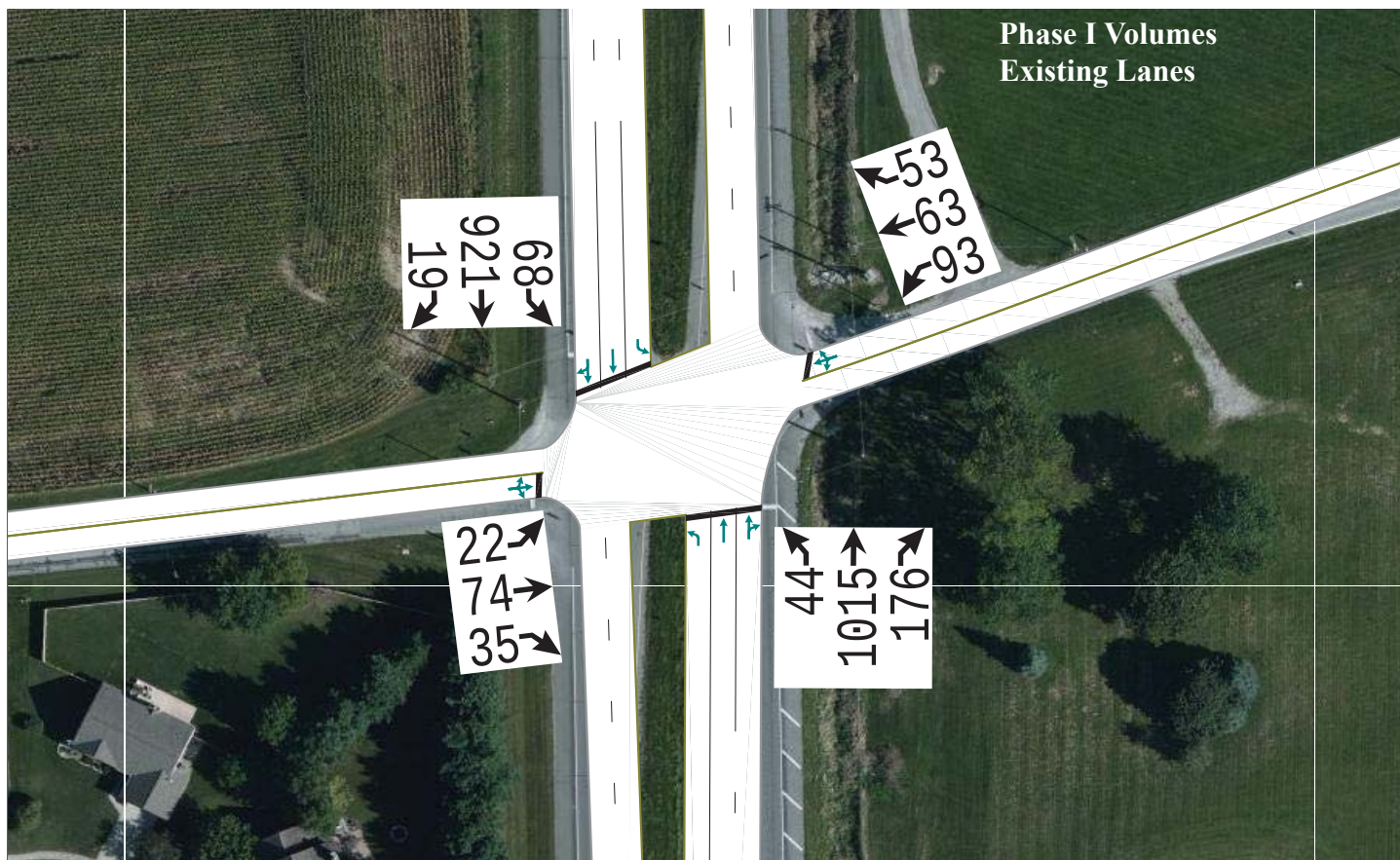
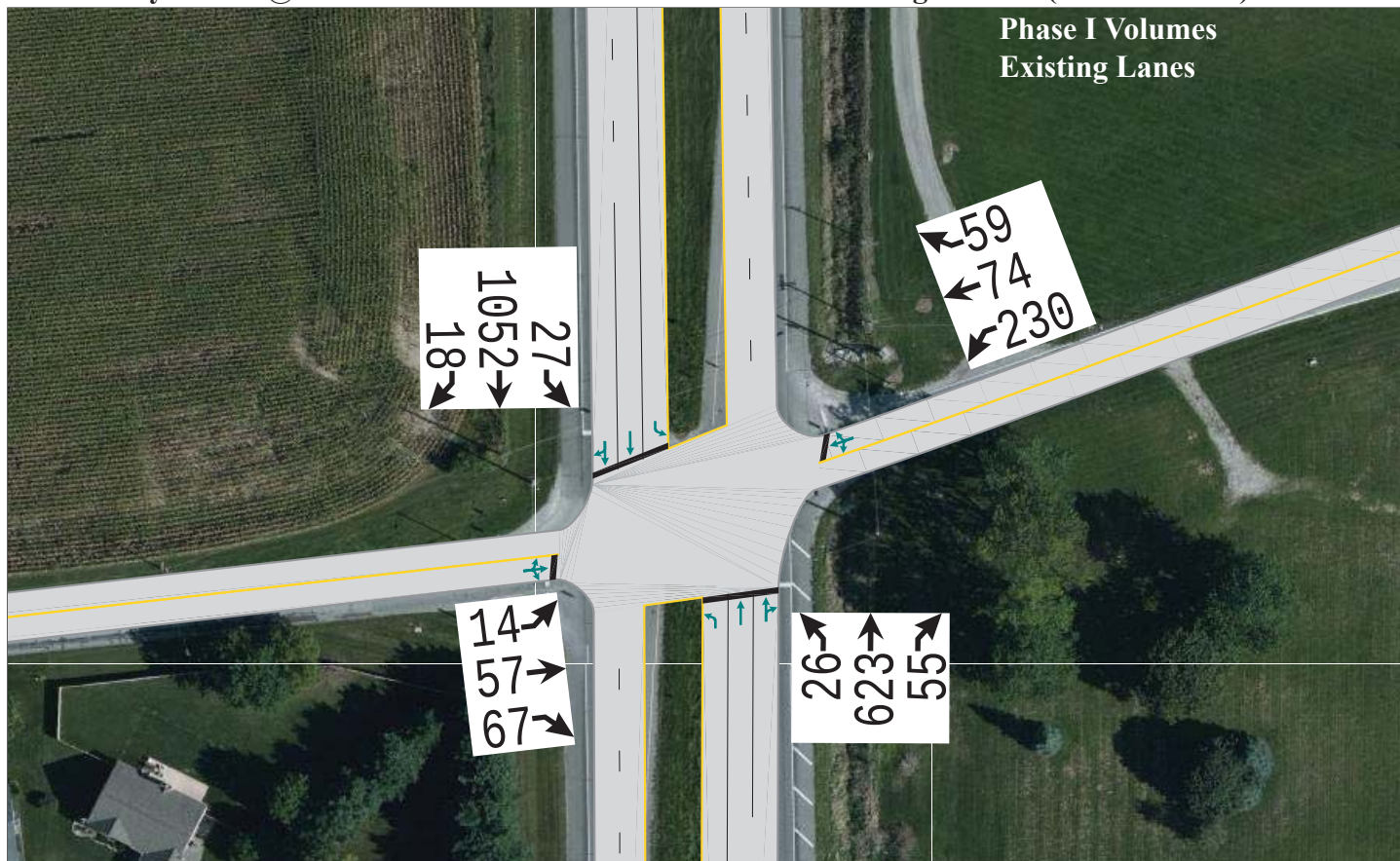


Figure 25

Cedar Canyons Rd @ State Road 3 Phase II Volumes and Existing / Proposed Improvements (AM Peak)

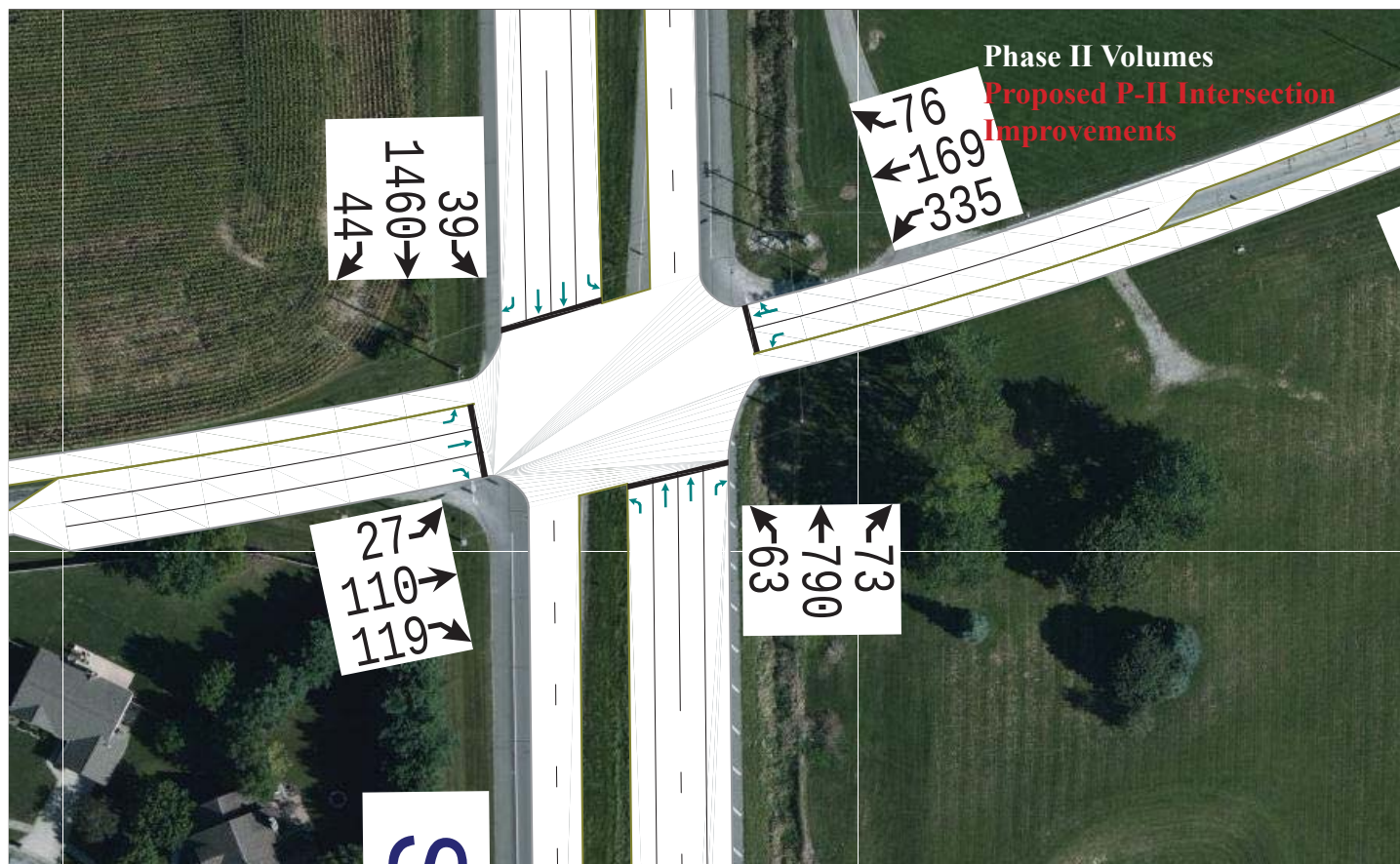
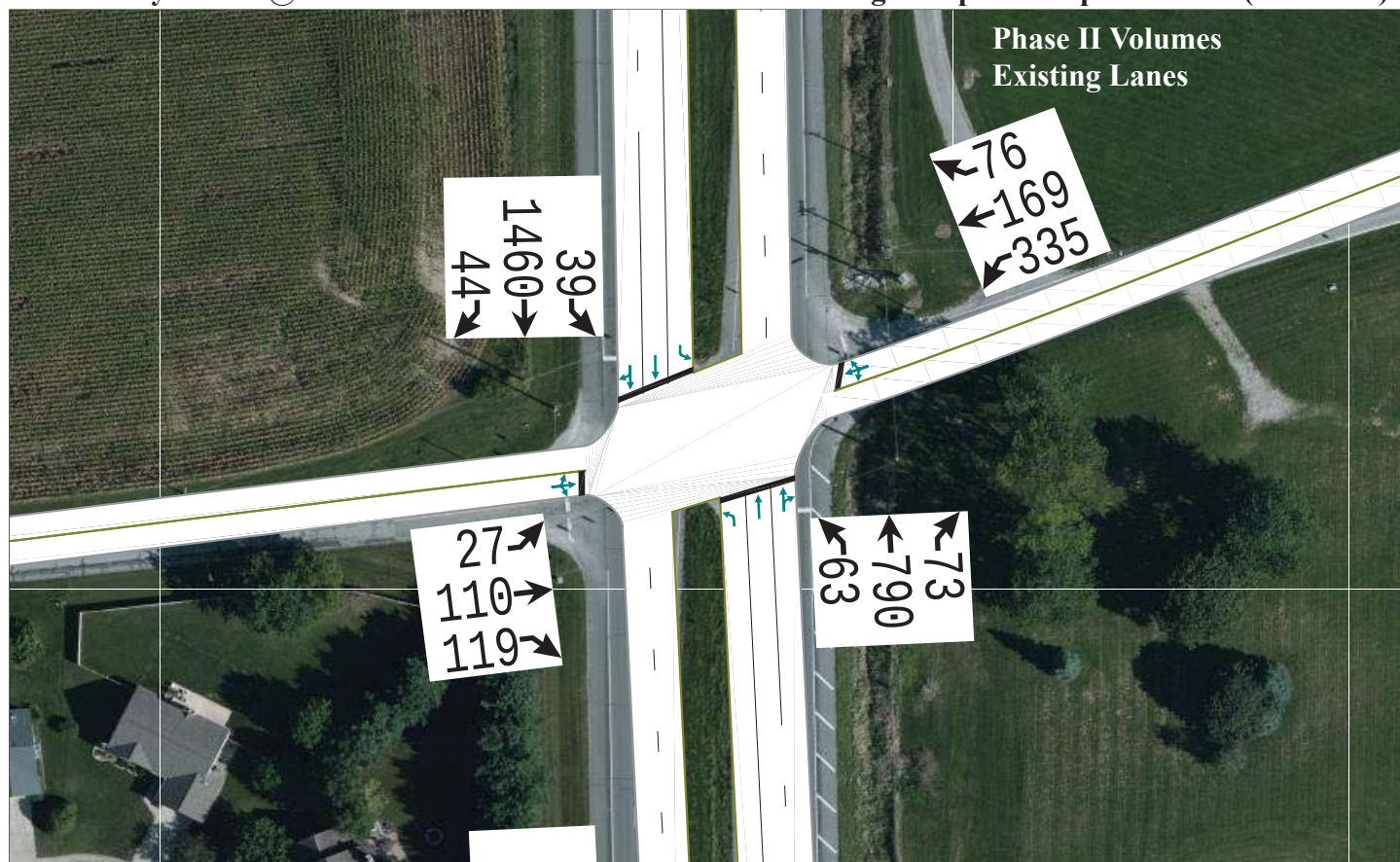
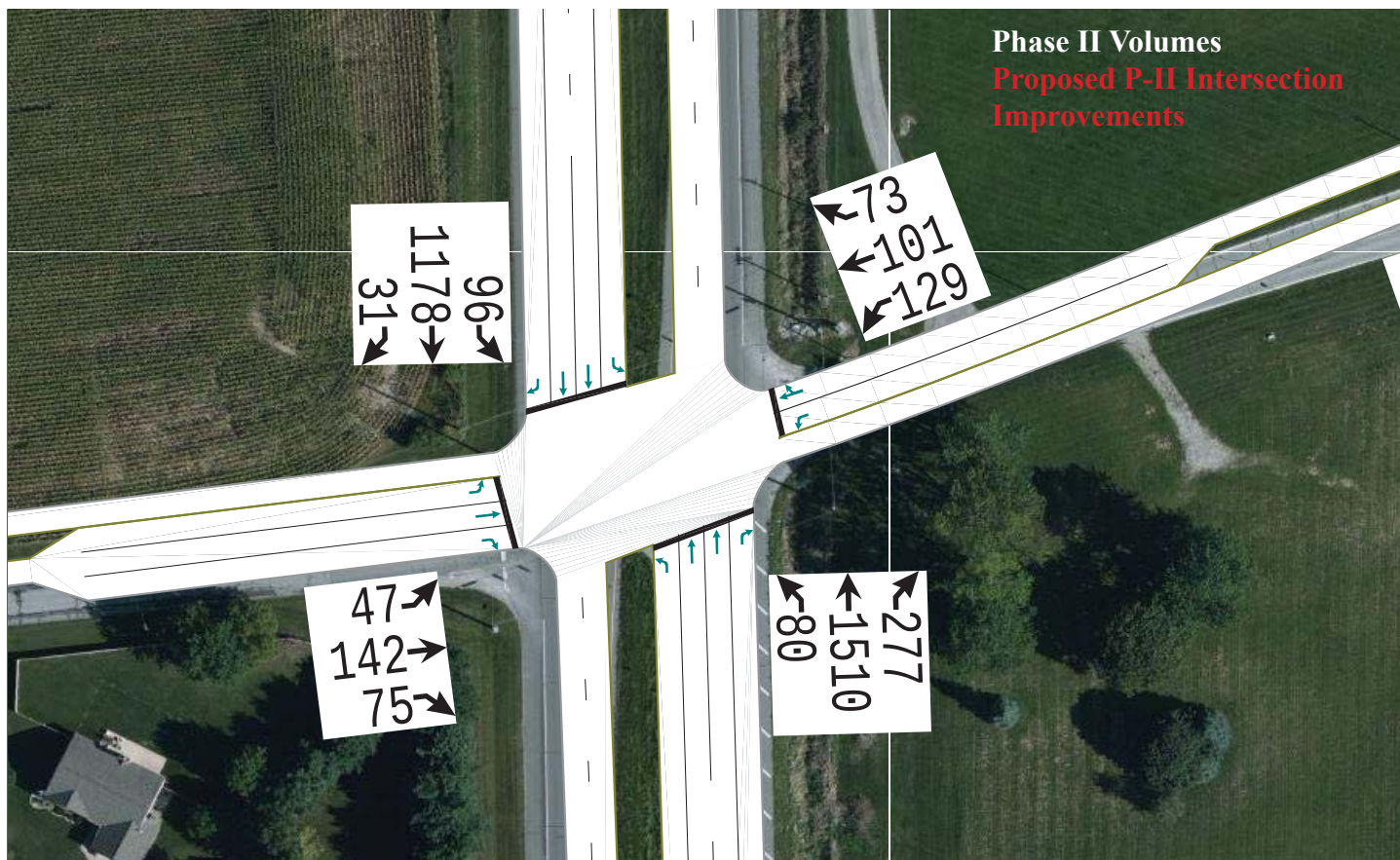
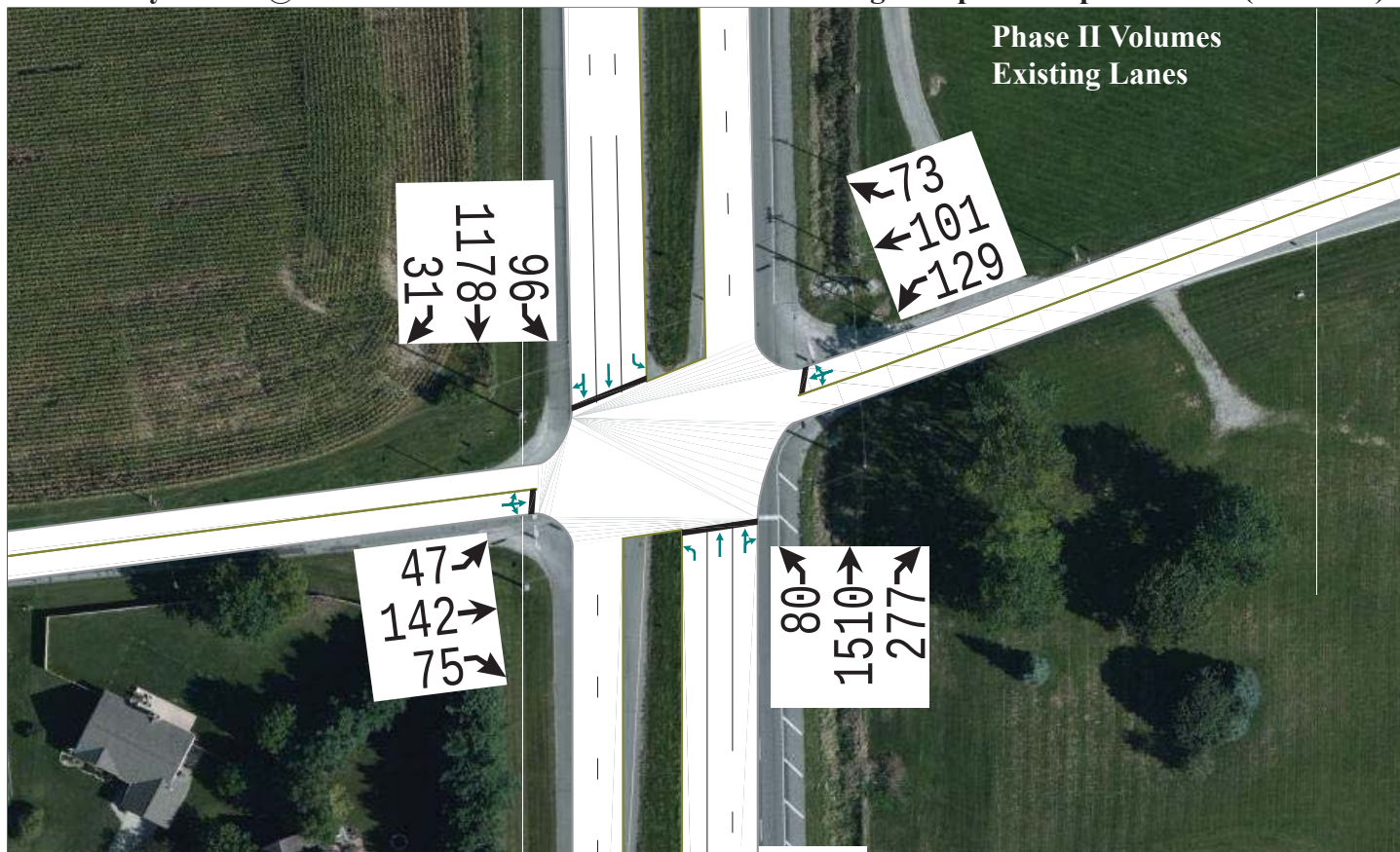


Figure 26

Cedar Canyons Rd @ State Road 3 Phase II Volumes and Existing / Proposed Improvements (PM Peak)



## Cedar Canyons Road at Dunton Road

### Scenario 1: - Existing Conditions

Cedar Canyons Road and Dunton Road are 2-lane facilities. Figure 27 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The analysis indicates that this intersection is currently operating at a LOS “B” for a.m. and “A” for p.m. peak hours for the northbound movements.

### Scenario 2: - Proposed Development Recommendations

The analysis indicates the intersection will operate at a LOS “B” for a.m. and p.m. peak hours with the added trips of phase I during the peak hours for the northbound movement. See Figure 28 for the a.m. and p.m. peak volumes, and LOS.

### Scenario 3: - Potential Development Recommendations

The analysis indicates the intersection will operate at a LOS “B” for a.m. and p.m. peak hours with the added trips of phase II during the peak hours for the northbound movement. See Figure 29 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Cedar Canyons Rd @ Dunton Rd</b> |            |            |            |                        |
|-------------------------------------|------------|------------|------------|------------------------|
| <b>AM Peak</b>                      | <b>NB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|                                     | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                            | B          | A          | A          | 1.3                    |
| Phase I - Existing Lanes            | B          | A          | A          | 2.0                    |
| Phase II                            | B          | A          | A          | 2.3                    |

| <b>PM Peak</b>           | <b>NB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|--------------------------|------------|------------|------------|------------------------|
|                          | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                 | A          | A          | A          | 1.7                    |
| Phase I - Existing Lanes | B          | A          | A          | 2.5                    |
| Phase II                 | B          | A          | A          | 3.0                    |

Figure 27

Cedar Canyons Rd @ Dunton Rd Existing Volumes and Lane Configurations (AM/PM Peak)



Figure 28

Cedar Canyons Rd @ Dunton Rd Phase I Volumes and Lane Configurations (AM/PM)



Figure 29

Cedar Canyons Rd @ Dunton Rd Phase II Volumes and Lane Configurations (AM/PM Peak)



## **Cedar Canyons Road at Coldwater Road**

### **Scenario 1: - Existing Conditions**

Cedar Canyons Road and Coldwater Road are 2-lane facilities. Figure 30 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that this intersection is currently operating at a LOS “B” for a.m. and p.m. peak hours for the eastbound and LOS “C” for a.m. and p.m. peak hours for the westbound movements.

### **Scenario 2: - Proposed Development Recommendations**

The analysis indicates the intersection will operate at a LOS “B” for a.m. and “D” for p.m. peak hours with the added trips of phase I during the peak hours for the eastbound and “C” for a.m. and “E” for p.m. peak hours for the westbound movements. See Figure 31 for the a.m. and p.m. peak volumes, and LOS.

### **Scenario 3: - Potential Development Recommendations**

The analysis indicates the intersection will operate at a LOS “D” for a.m. and “F” for p.m. peak hours with the added trips of phase II during the peak hours for the eastbound and “F” for a.m. and p.m. peak hours for the westbound movements. The intersection can be improved to a LOS “A” during the a.m. and p.m. peak hours with signalization See Figures 32 and 33 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Cedar Canyons Rd @ Coldwater Rd</b> |            |            |            |            |                            |
|----------------------------------------|------------|------------|------------|------------|----------------------------|
| <b>AM Peak</b>                         | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>               |
|                                        | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)/LOS</b> |
| Existing                               | A          | A          | B          | C          | 5.7                        |
| Phase I - Existing Lanes               | A          | A          | B          | C          | 6.4                        |
| Phase II - Existing Lanes              | A          | A          | D          | F          | 18.1                       |
| Phase II - Modified                    | A          | A          | A          | A          | A                          |

| <b>PM Peak</b>            | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>               |
|---------------------------|------------|------------|------------|------------|----------------------------|
|                           | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)/LOS</b> |
| Existing                  | A          | A          | B          | C          | 4.6                        |
| Phase I - Existing Lanes  | A          | A          | D          | E          | 8.1                        |
| Phase II - Existing Lanes | A          | A          | F          | F          | 104.0                      |
| Phase II - Modified       | A          | A          | B          | B          | A                          |

**Figure 30**

**Cedar Canyons Rd @ Coldwater Rd Existing Volumes and Lane Configurations (AM/PM Peak)**

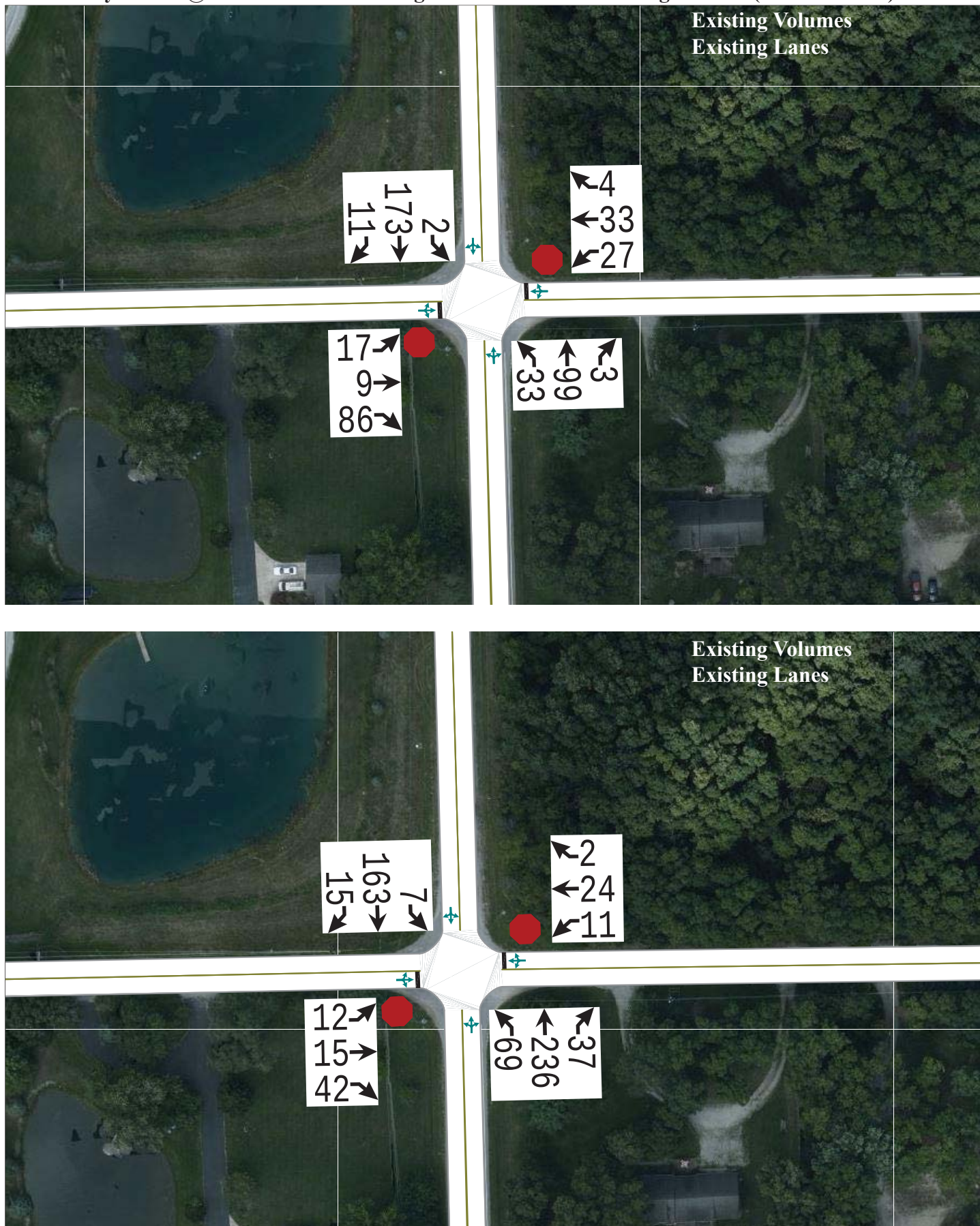


Figure 31

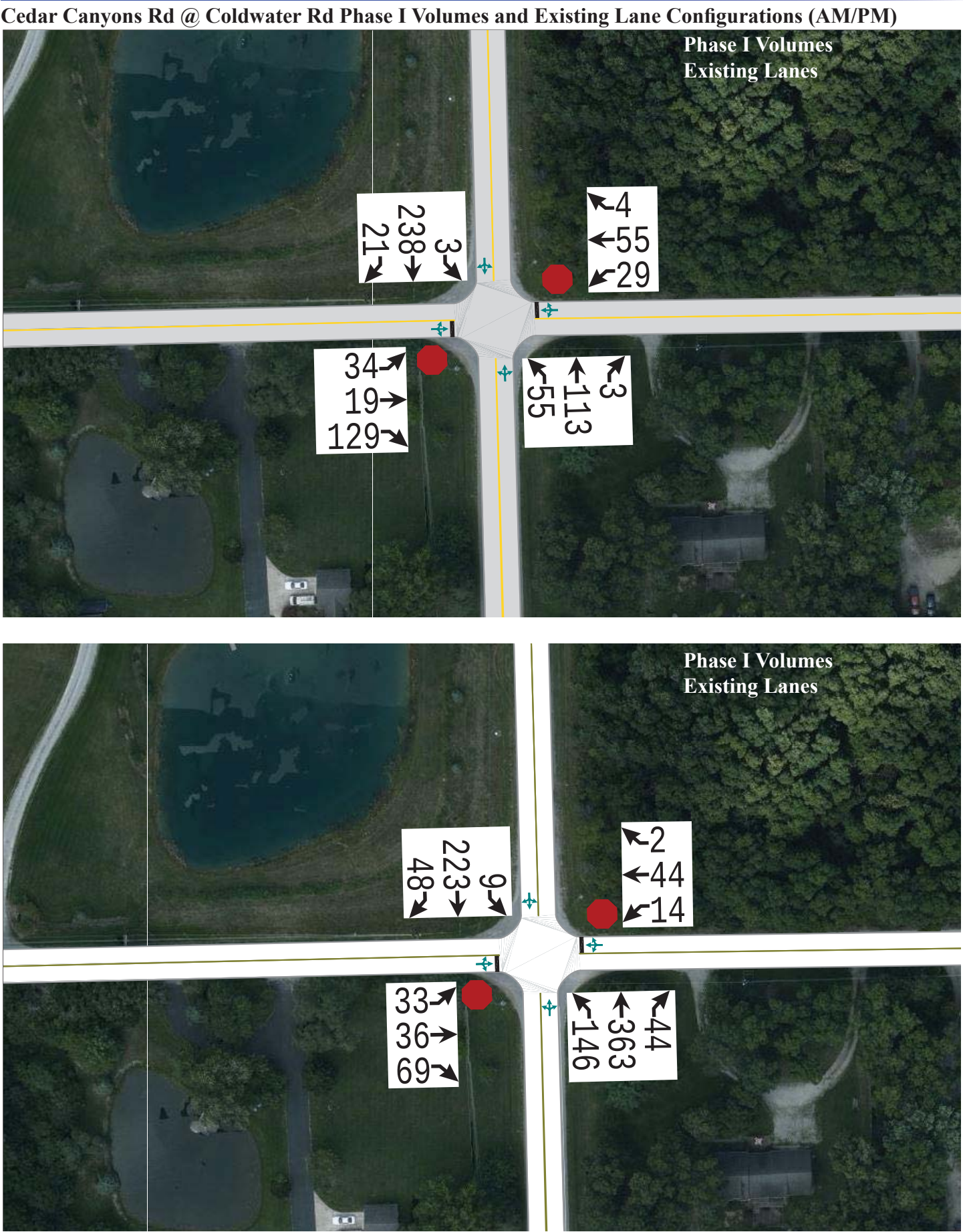


Figure 32

Cedar Canyons Rd @ Coldwater Rd Phase II Volumes and Existing / Proposed Improvements (AM Peak)

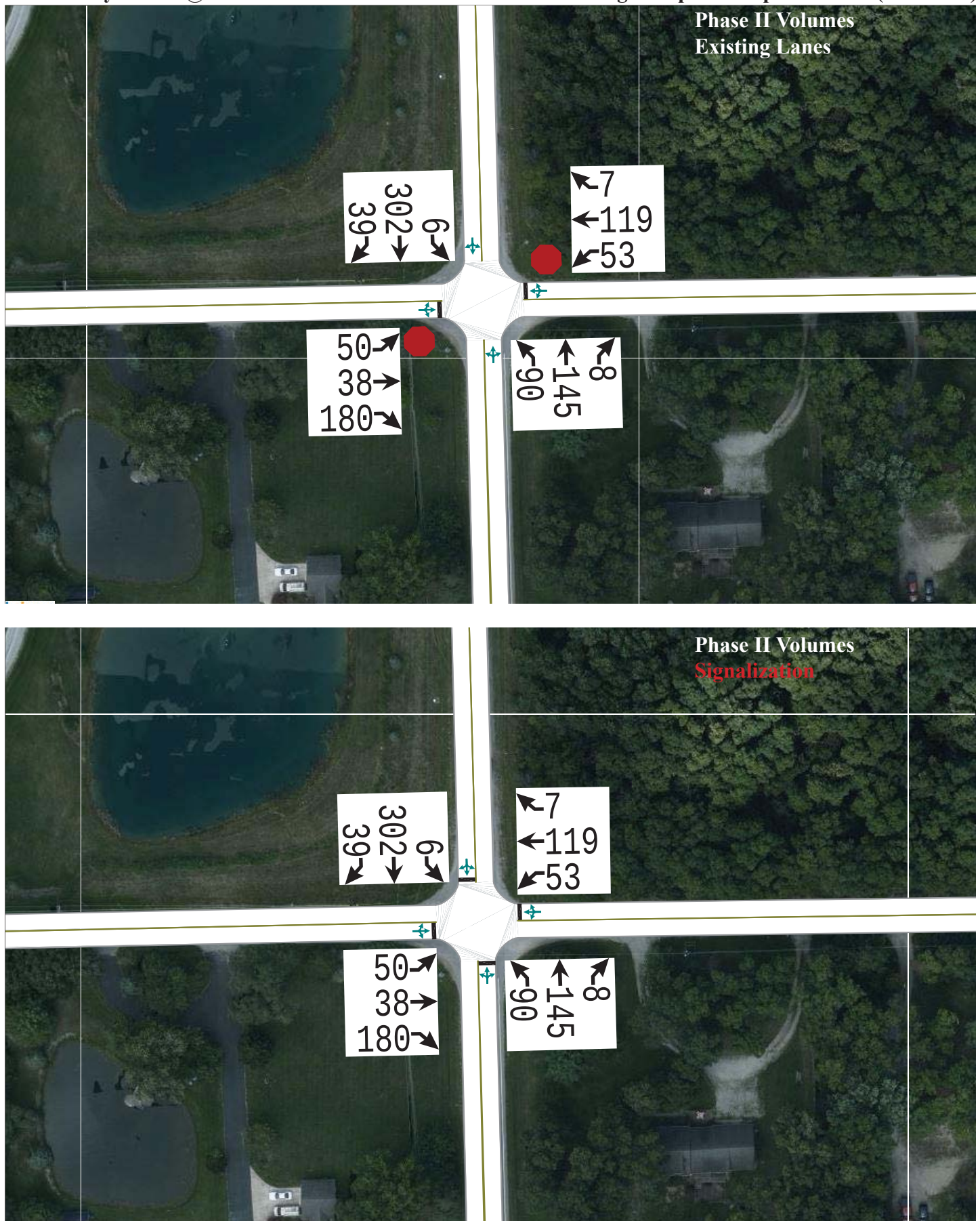
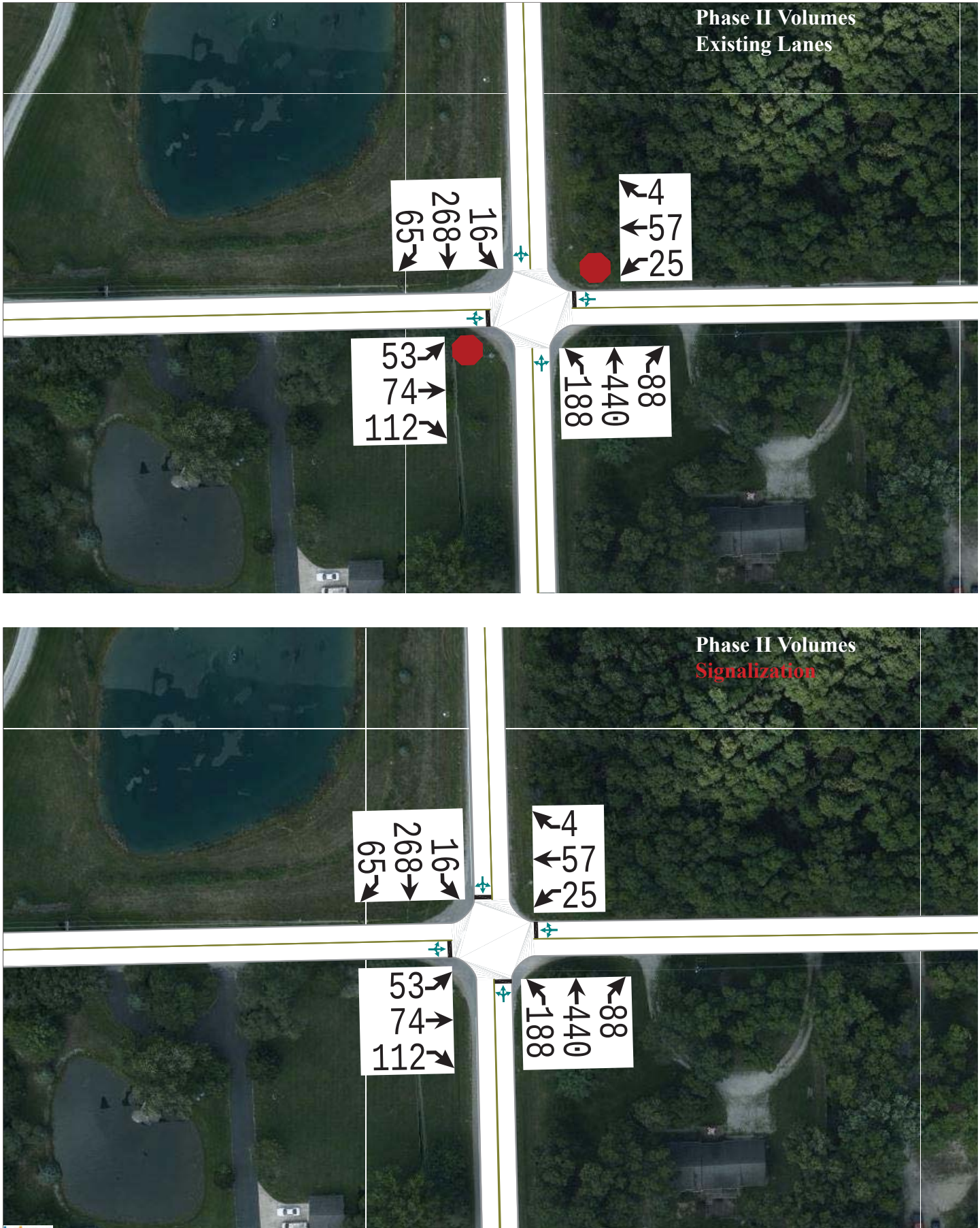


Figure 33

Cedar Canyons Rd @ Coldwater Rd Phase II Volumes and Existing / Proposed Improvements (PM Peak)



### **Corridor 3: Shoaff Road: Hand Road to Coldwater Road**

#### **Existing Analysis**

The existing analysis is based on 2017/2018 turning movement counts and geometric configurations. The analysis is for the a.m. and p.m. peak periods. The outputs from Synchro 10 for both a.m./p.m. peaks for the intersections are listed in Appendix C.

#### **Shoaff Road at Hand Road**

##### **Scenario 1: - Existing Conditions**

Shoaff Road and Hand Road are 2-lane facilities. Figure 34 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that this intersection is currently operating at a LOS “A” for a.m. and “B” for p.m. peak hours for the northbound and LOS “B” for a.m. and “A” for p.m. peak hours for the southbound movements.

##### **Scenario 2: - Proposed Development Recommendations**

The analysis indicates the intersection will operate at a LOS “B” for a.m. and p.m. peak hours for the northbound and LOS “B” for a.m. and “A” for p.m. peak hours for the southbound movements with the added trips of phase I. See Figure 35 for the a.m. and p.m. peak volumes, and LOS.

##### **Scenario 3: - Potential Development Recommendations**

The analysis indicates the intersection will operate at a LOS “B” for a.m. p.m. peak hours for the northbound and LOS “C” for a.m. and “B” for p.m. peak hours for the southbound movements with the added trips of phase II during the peak hours.. See Figure 36 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Shoaff Rd @ Hand Rd</b> |            |            |            |            |                        |
|----------------------------|------------|------------|------------|------------|------------------------|
| <b>AM Peak</b>             | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|                            | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                   | A          | B          | A          | A          | 7.7                    |
| Phase I - Existing Lanes   | A          | B          | A          | A          | 7.3                    |
| Phase II - Existing Lanes  | B          | C          | A          | A          | 7.6                    |

| <b>PM Peak</b>            | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>           |
|---------------------------|------------|------------|------------|------------|------------------------|
|                           | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)</b> |
| Existing                  | B          | A          | A          | A          | 7.5                    |
| Phase I - Existing Lanes  | A          | A          | A          | A          | 7.6                    |
| Phase II - Existing Lanes | B          | B          | A          | A          | 7.5                    |

Figure 34

Shoaff Rd @ Hand Rd Existing Volumes and Lane Configurations (AM/PM Peak)

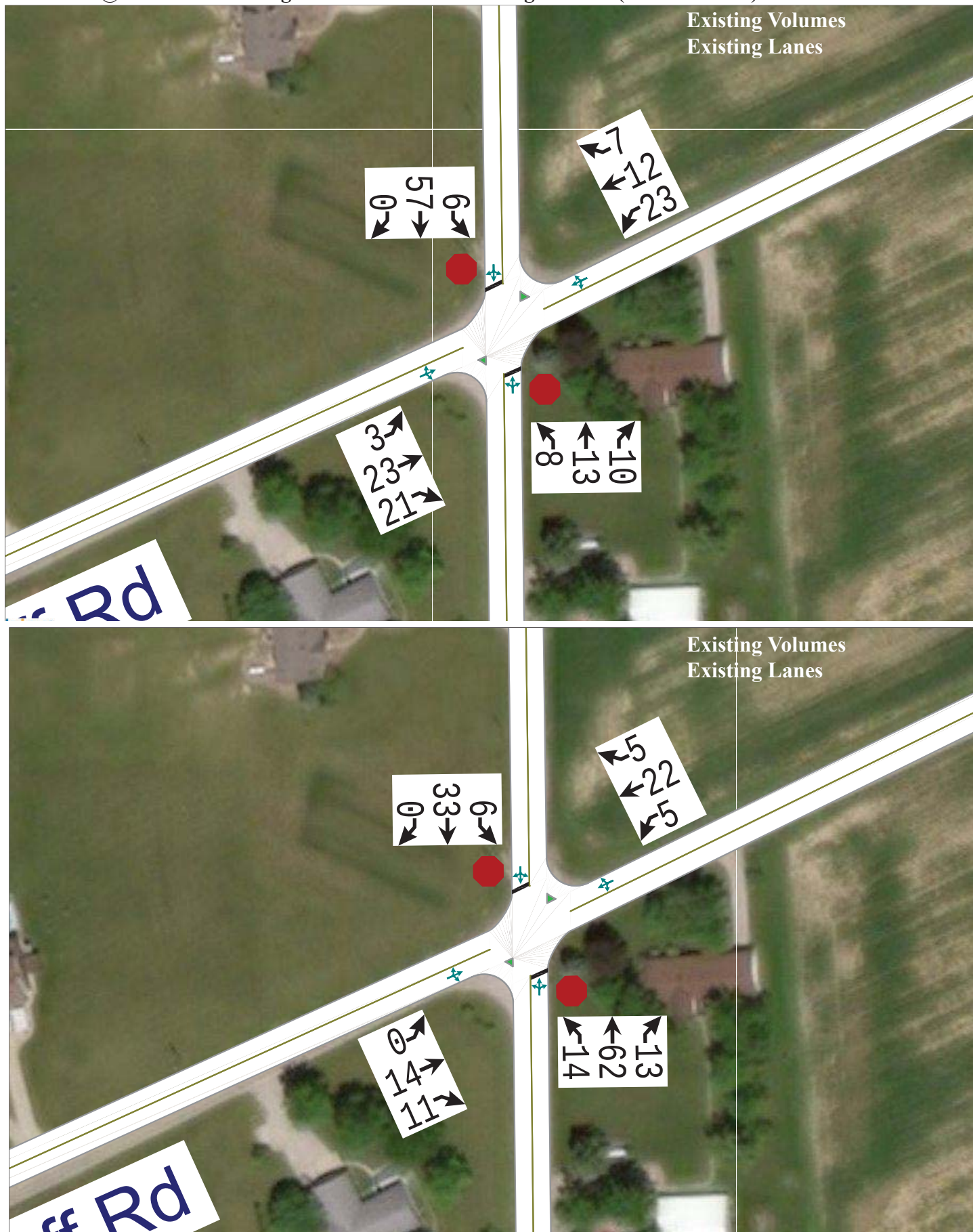


Figure 35

Shoaff Rd @ Hand Rd Phase I Volumes and Existing Lane Configurations (AM/PM Peak)

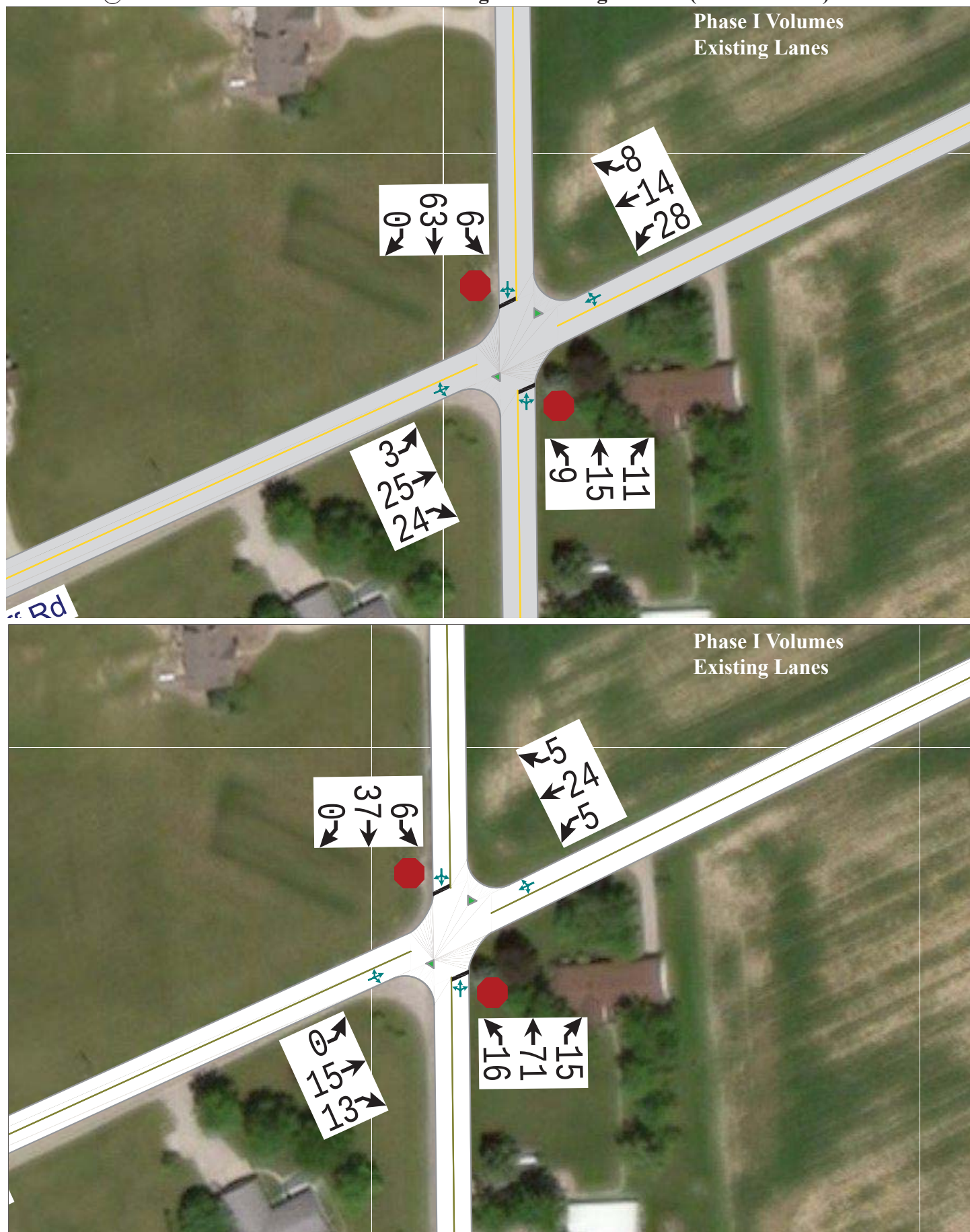
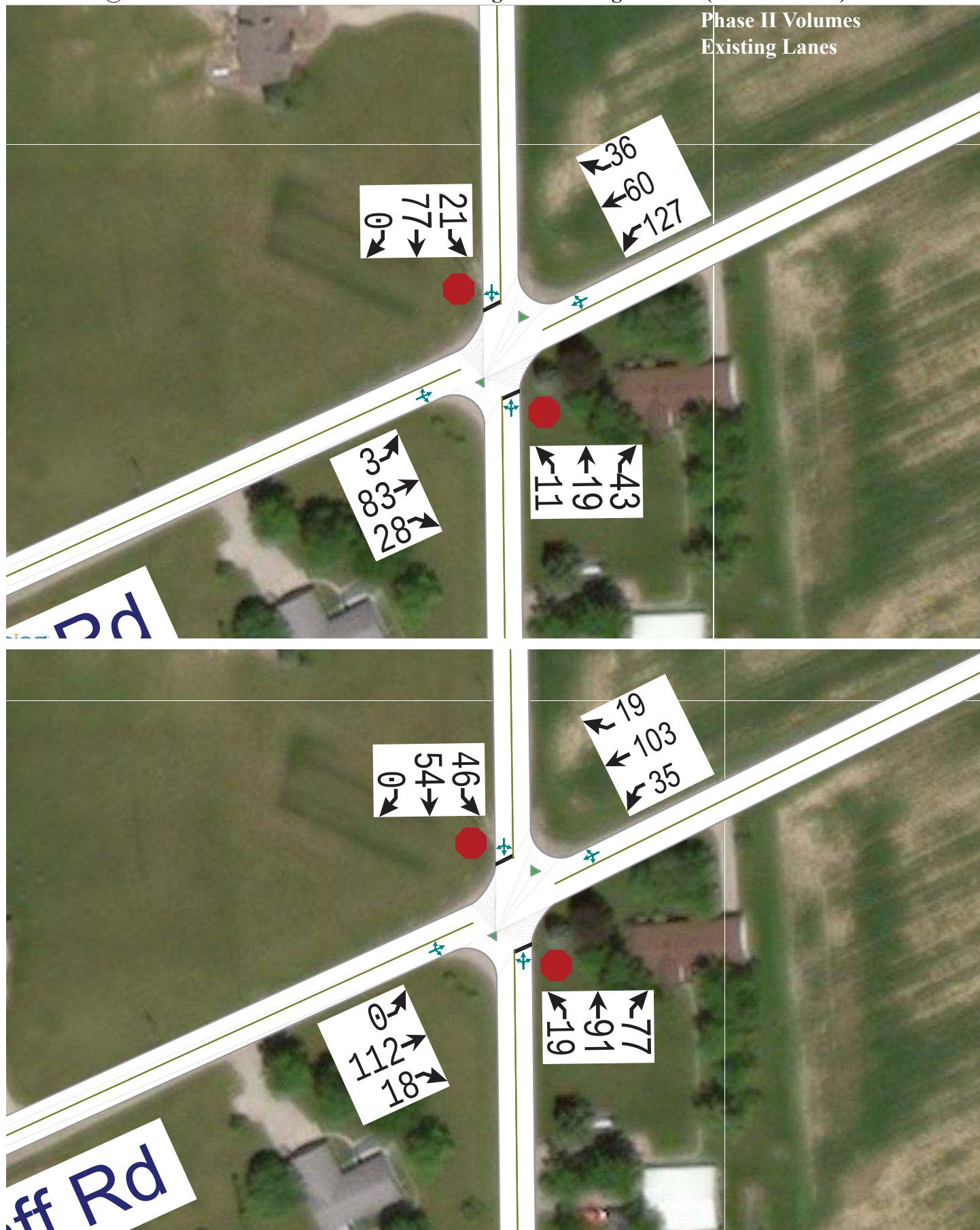


Figure 36

Shoaff Rd @ Hand Rd Phase II Volumes and Existing Lane Configurations (AM/PM Peak)



## Shoaff Road at Old Lima Road

### Scenario 1: - Existing Conditions

Shoaff Road and Old Lima Road are 2-lane facilities. Figure 37 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that this intersection is currently operating at a LOS “B” for a.m. and p.m. peak hours for the eastbound / westbound movements.

### Scenario 2: - Proposed Development Recommendations

The analysis indicates the intersection will operate at a LOS “B” for a.m. and p.m. peak hours with the added trips of phase I during the peak hours for the eastbound / westbound movements. See Figure 38 for the a.m. and p.m. peak volumes, and LOS.

### Scenario 3: - Potential Development Recommendations

The analysis indicates the intersection will operate at a LOS “C” for a.m. and “F” for p.m. peak hours with the added trips of phase II during the peak hours for the eastbound and / LOS “F” for a.m. and p.m. peak hours for westbound movements. The intersection can be improved to a LOS “A” during the a.m. and p.m. peak hours with signalization. See Figures 39 and 40 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Shoaff Rd @ Old Lima Rd</b> |            |            |            |            |                            |
|--------------------------------|------------|------------|------------|------------|----------------------------|
| <b>AM Peak</b>                 | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>               |
|                                | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)/LOS</b> |
| Existing                       | A          | A          | B          | B          | 5.0                        |
| Phase I - Existing Lanes       | A          | A          | B          | B          | 5.7                        |
| Phase II - Existing Lanes      | A          | A          | C          | F          | 56.7                       |
| Phase II - Modified            | A          | A          | B          | B          | A                          |

| <b>PM Peak</b>            | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>               |
|---------------------------|------------|------------|------------|------------|----------------------------|
|                           | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)/LOS</b> |
| Existing                  | A          | A          | B          | B          | 4.9                        |
| Phase I - Existing Lanes  | A          | A          | B          | B          | 4.5                        |
| Phase II - Existing Lanes | A          | A          | F          | F          | 86.5                       |
| Phase II - Modified       | A          | A          | B          | B          | A                          |

Figure 37

Shoaff Rd @ Old Lima Rd Existing Volumes and Lane Configurations (AM/PM Peak)

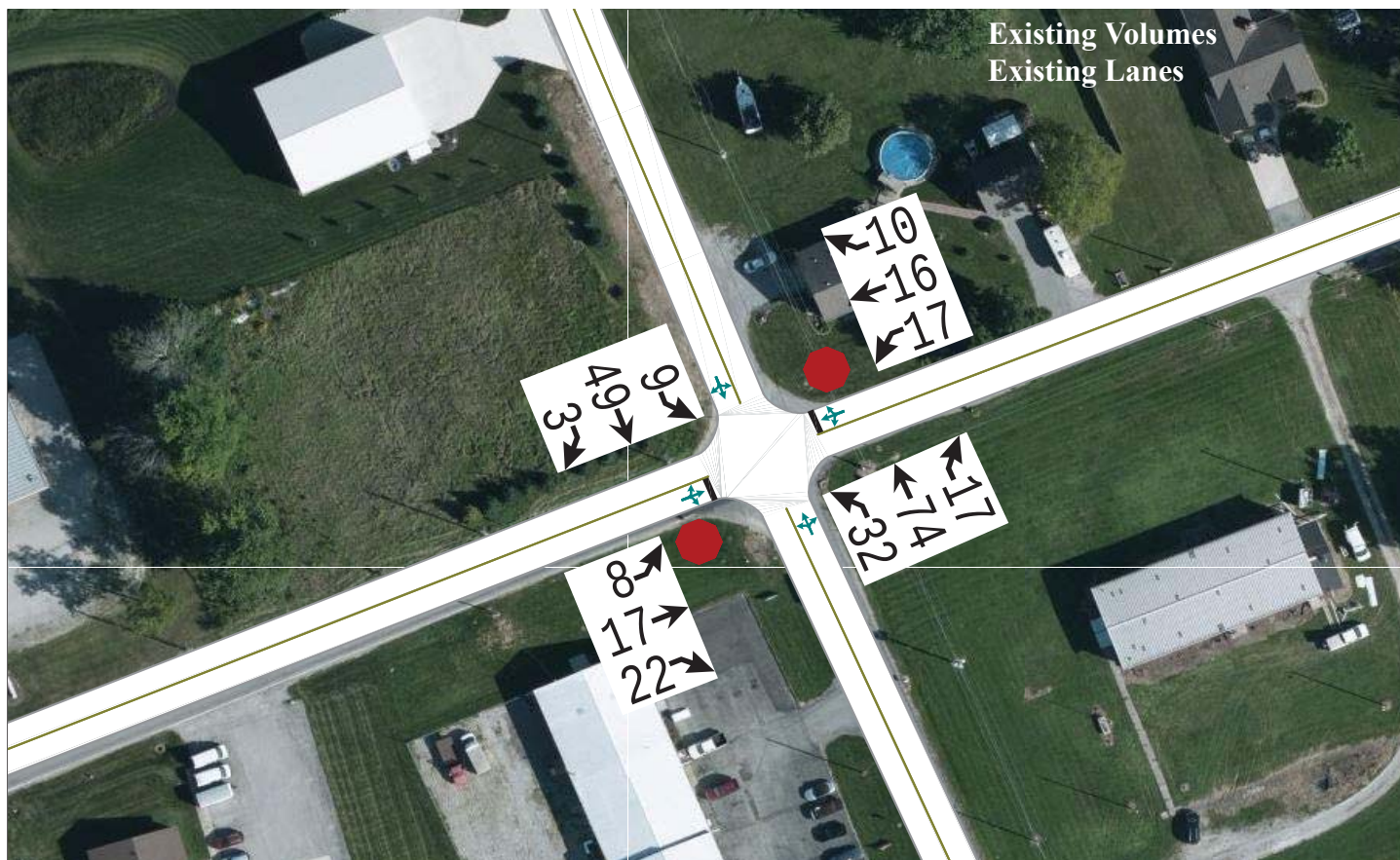
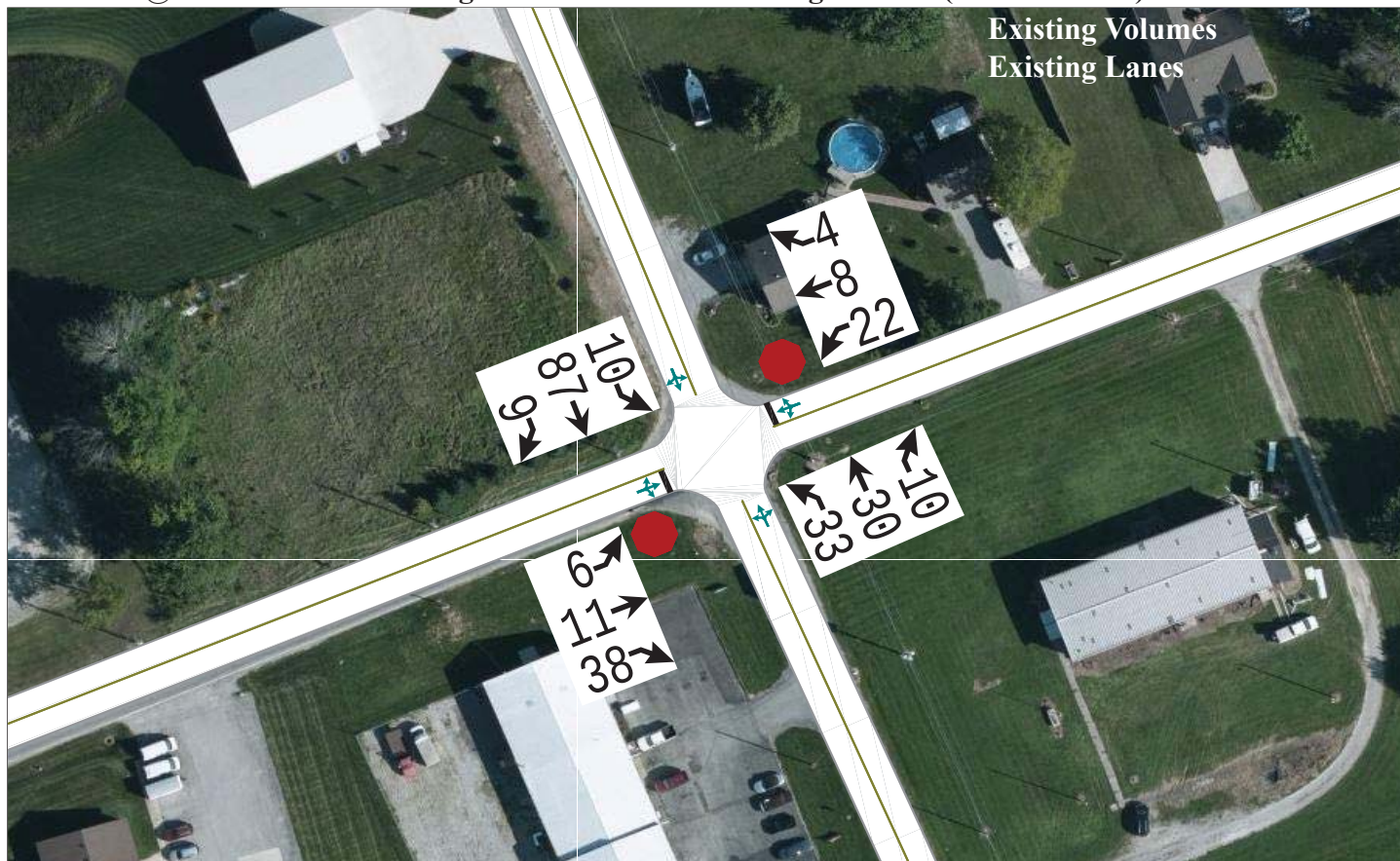


Figure 38

Shoaff Rd @ Old Lima Rd Phase I Volumes and Existing Lane Configurations (AM/PM Peak)



Figure 39

Shoaff Rd @ Old Lima Rd Phase II Volumes and Existing / Proposed Improvements (AM Peak)

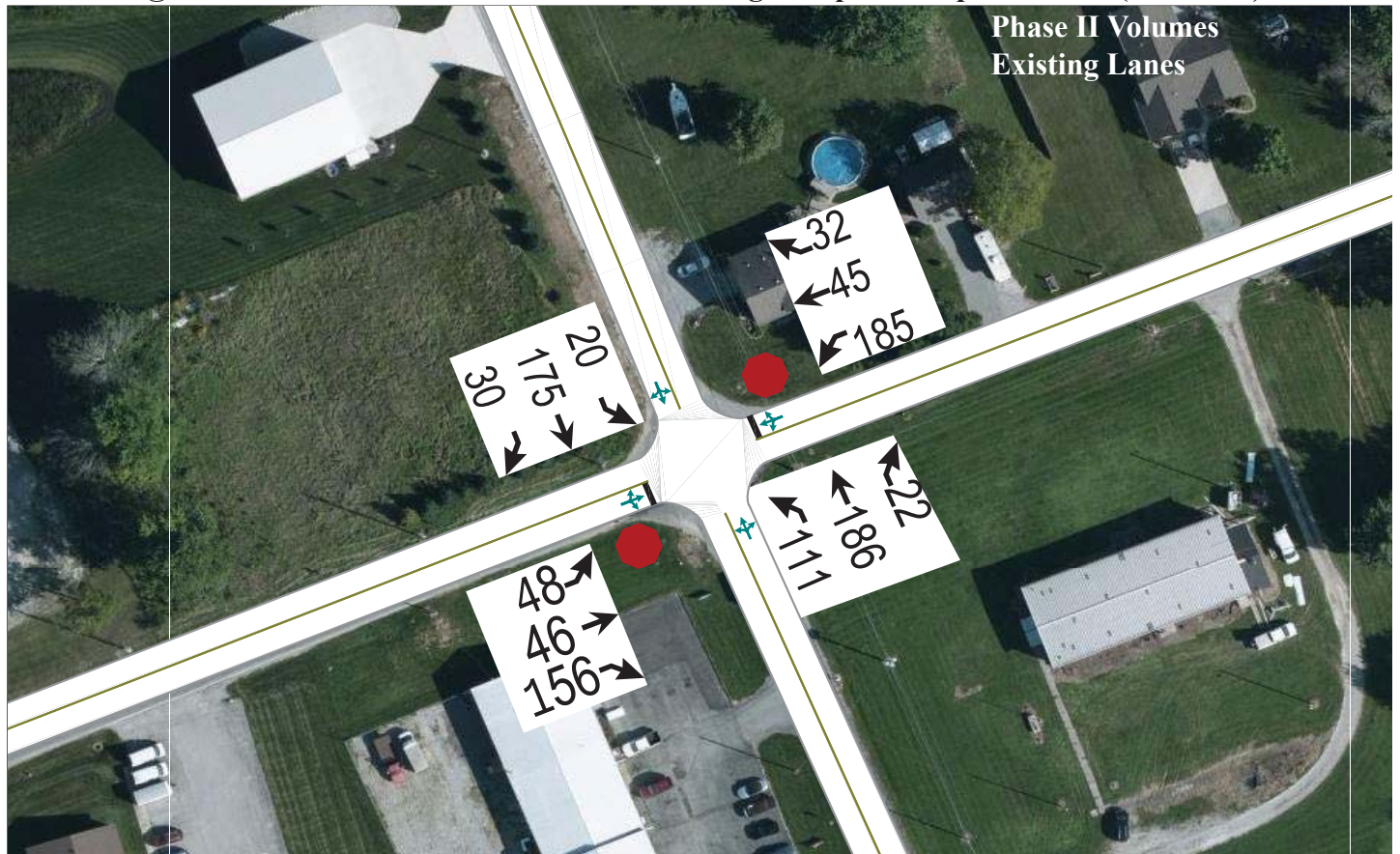
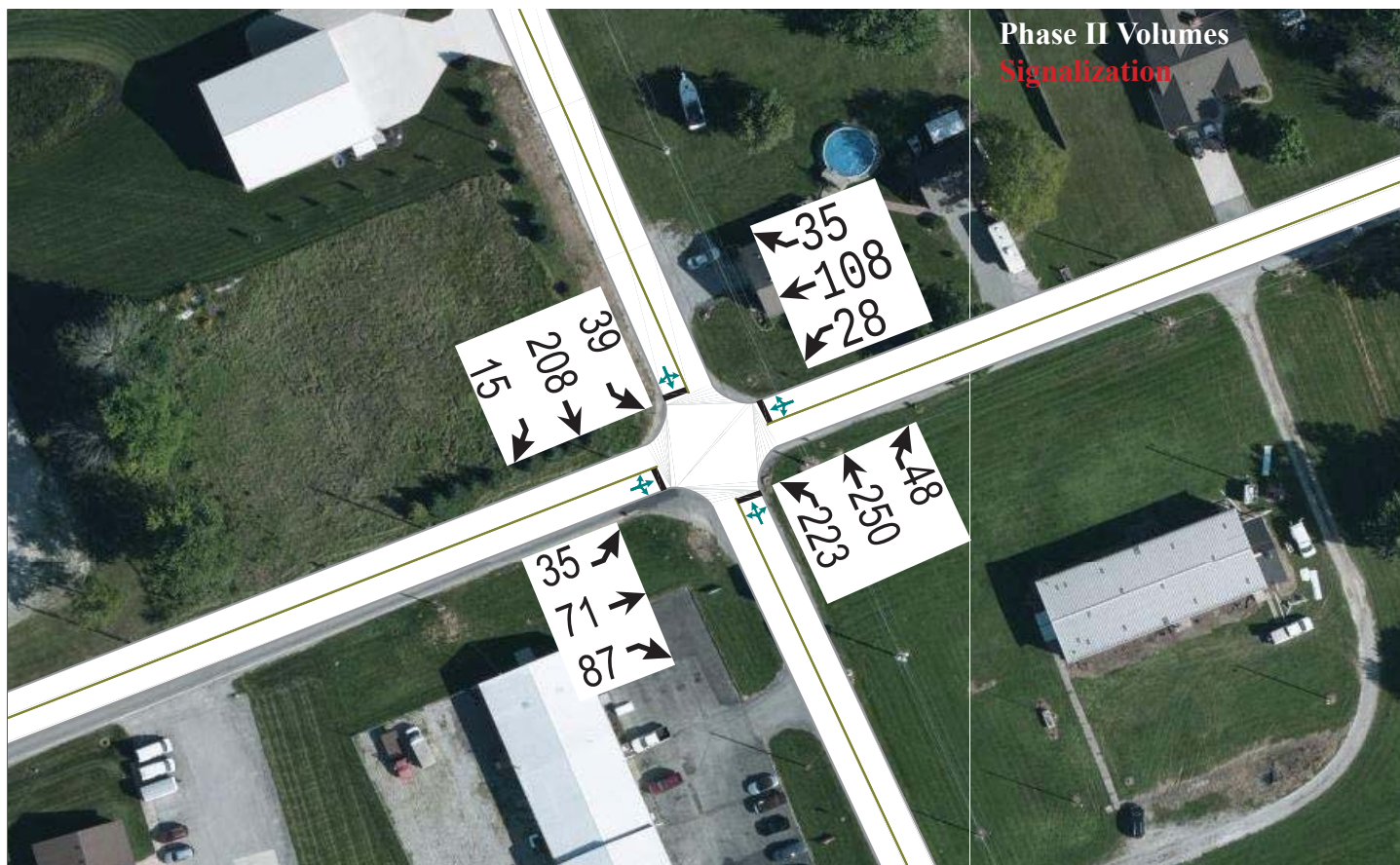
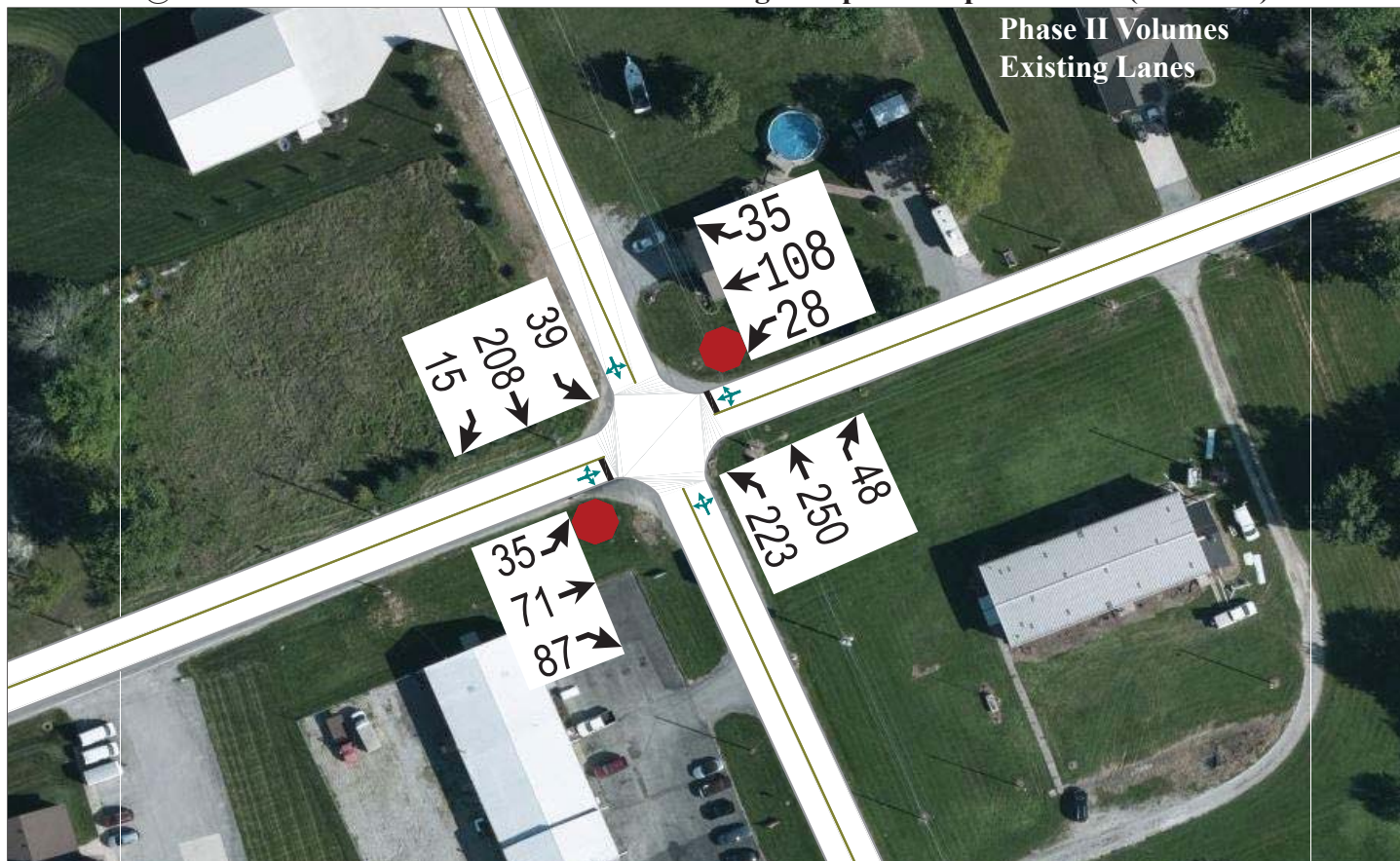


Figure 40

Shoaff Rd @ Old Lima Rd Phase II Volumes and Existing / Proposed Improvements (PM Peak)



## **Shoaff Road at State Road 3**

### **Scenario 1: - Existing Conditions**

State Road 3 is a 4-lane and Shoaff Road is a 2-lane facilities. Figure 41 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that this intersection is currently operating at a LOS “E” for a.m. and “D” p.m. peak hours for the eastbound / westbound movements.

### **Scenario 2: - Proposed Development Recommendations**

The analysis indicates the intersection will operate at a LOS “F” for a.m. and p.m. peak hours with the added trips of phase I during the peak hours for the eastbound / westbound movements. The intersection can be improved to a LOS “A” during the a.m. and p.m. peak hours with signalization. See Figures 42 and 43 for the a.m. and p.m. peak volumes, and LOS.

### **Scenario 3: - Potential Development Recommendations**

The analysis indicates the intersection will operate at a LOS “D” for a.m. and p.m. peak hours with the added trips of phase II during the peak hours. See Figure 44 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Shoaff Rd @ State Road 3</b> |            |            |            |            |                            |
|---------------------------------|------------|------------|------------|------------|----------------------------|
| <b>AM Peak</b>                  | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>               |
|                                 | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)/LOS</b> |
| Existing                        | A          | A          | E          | E          | 2.4                        |
| Phase I - Existing Lanes        | A          | A          | F          | F          | 109.6                      |
| Phase I - Modified              | A          | A          | B          | A          | A                          |
| Phase II - Phase I Lanes        | A          | A          | B          | B          | A                          |

| <b>PM Peak</b>           | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>WB</b>  | <b>Total</b>               |
|--------------------------|------------|------------|------------|------------|----------------------------|
|                          | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)/LOS</b> |
| Existing                 | A          | A          | D          | D          | 2.7                        |
| Phase I - Existing Lanes | A          | A          | F          | F          | 0.5                        |
| Phase I - Modified       | A          | A          | B          | B          | A                          |
| Phase II - Phase I Lanes | A          | A          | C          | C          | B                          |

Figure 41

Shoaff Rd @ State Road 3 Existing Volumes and Lane Configurations (AM/PM Peak)

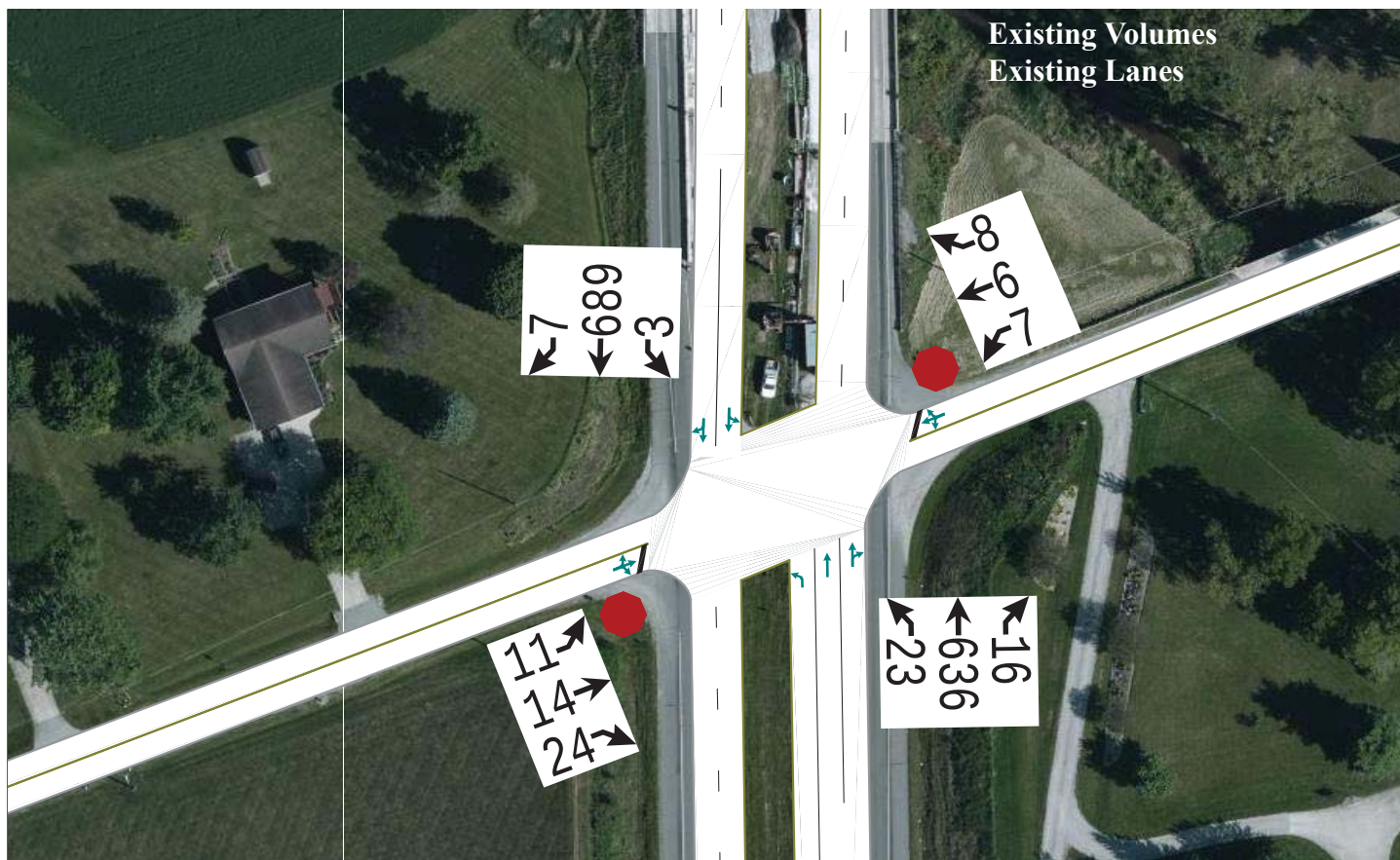
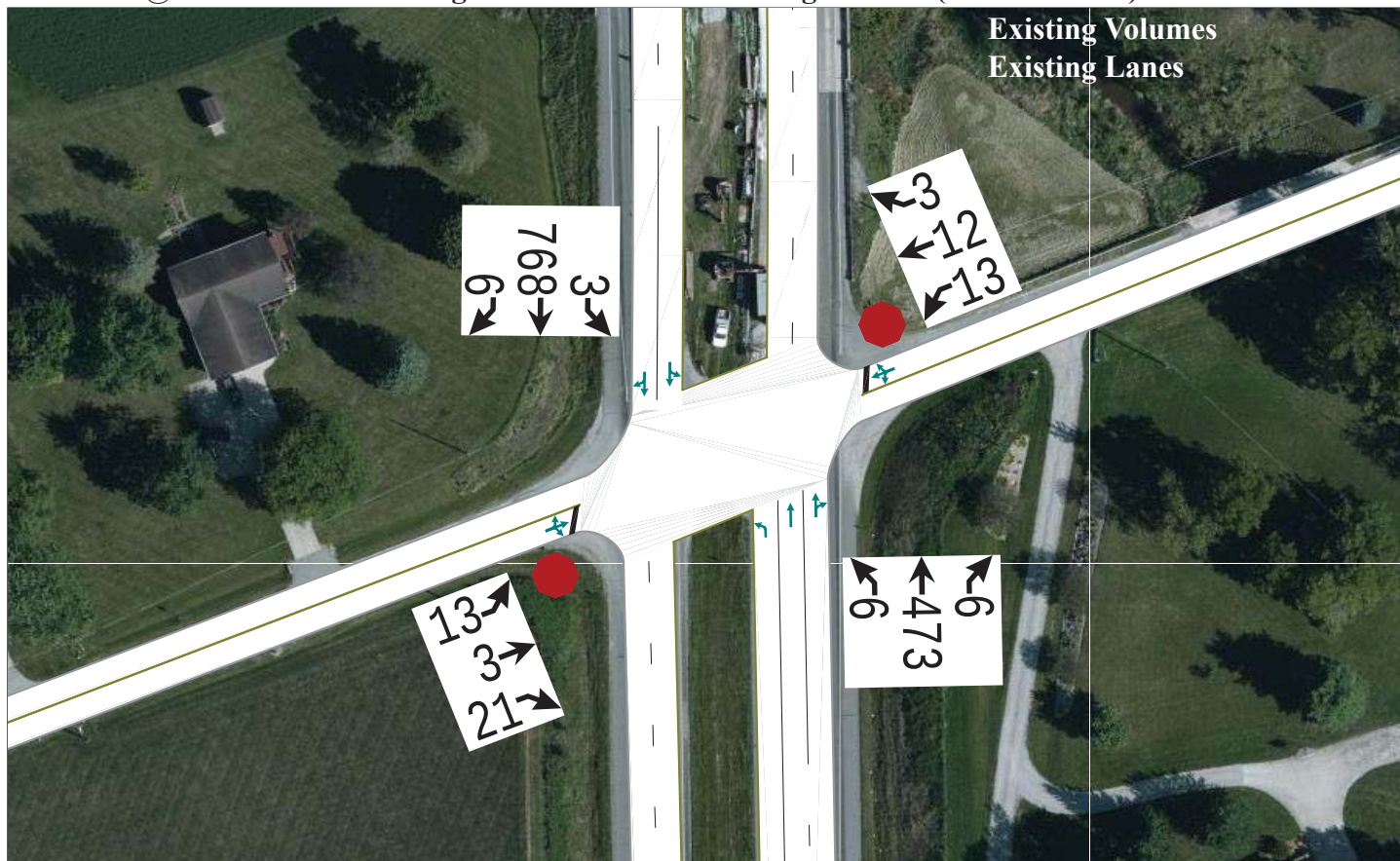


Figure 42

Shoaff Rd @ State Road 3 Phase I Volumes and Existing / Proposed Improvements (AM Peak)

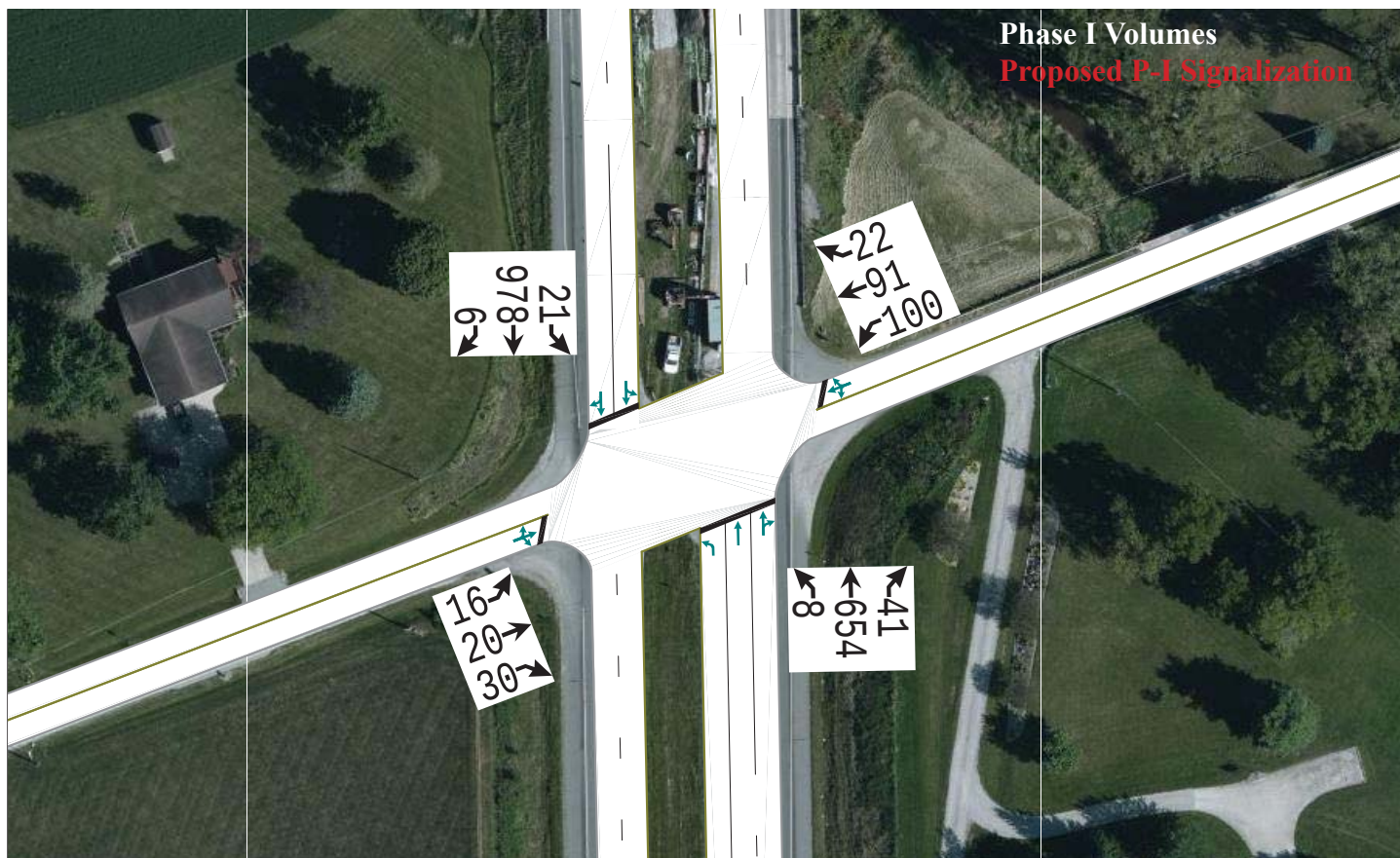
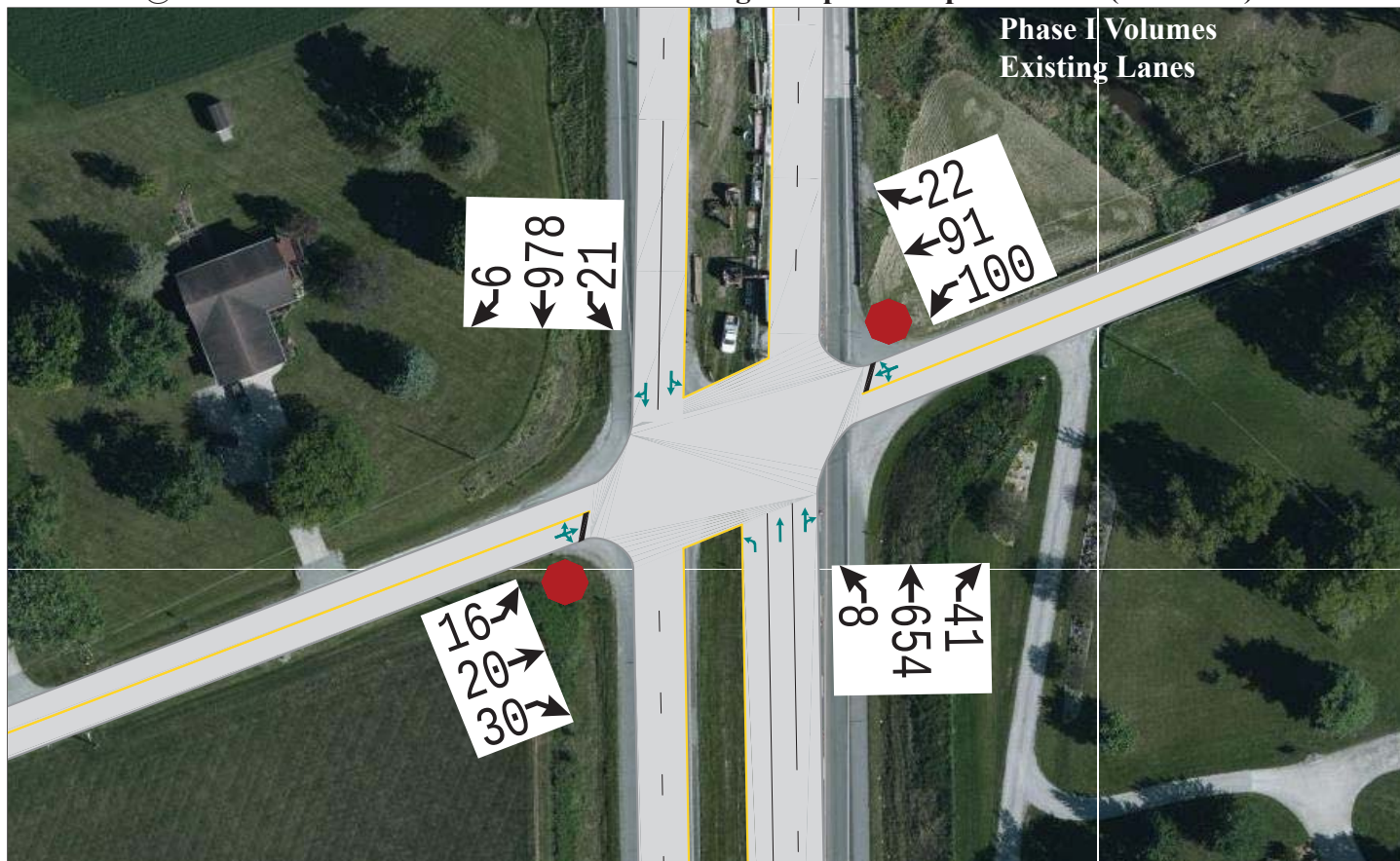


Figure 43

Shoaff Rd @ State Road 3 Phase I Volumes and Existing / Proposed Improvements (PM Peak)

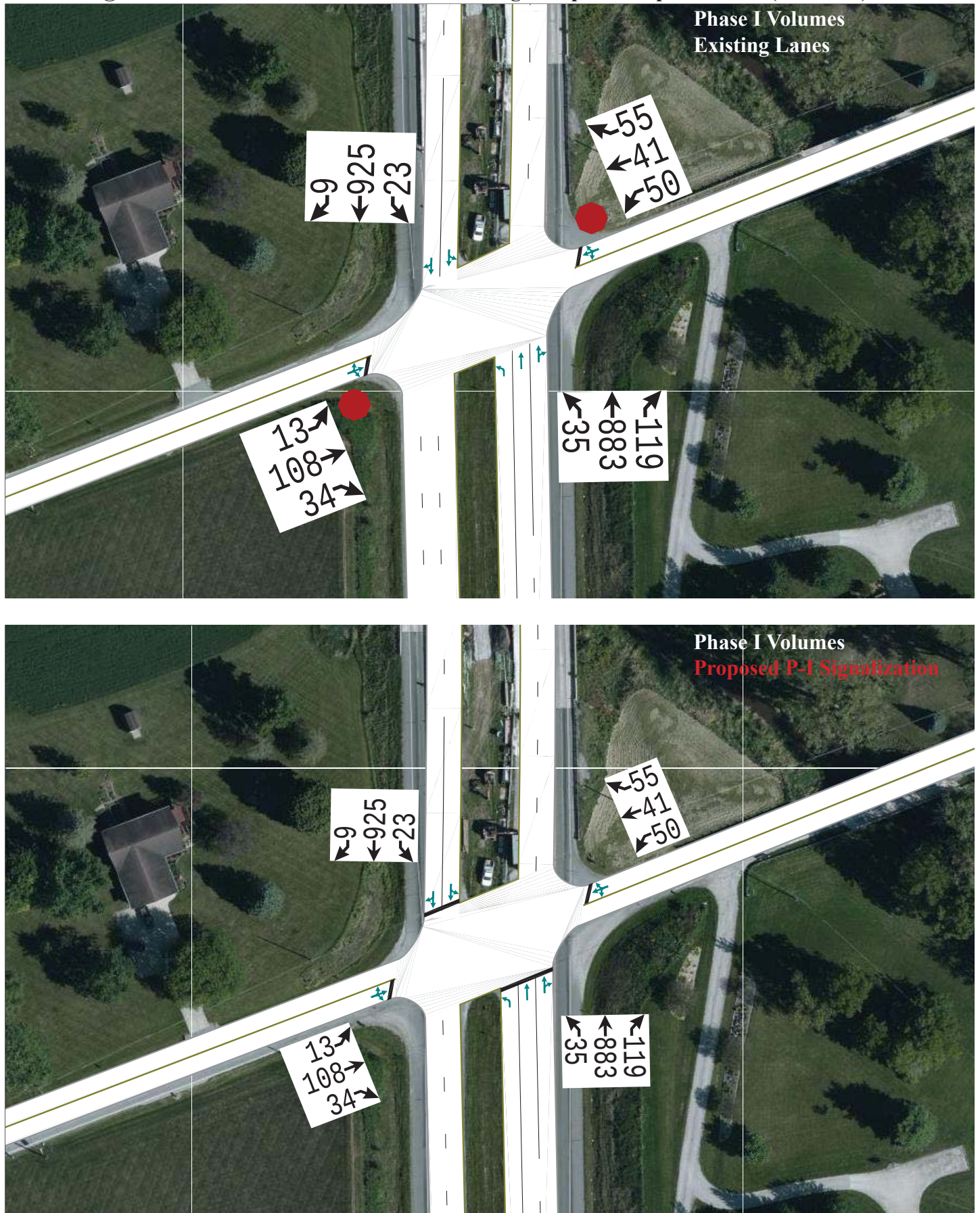
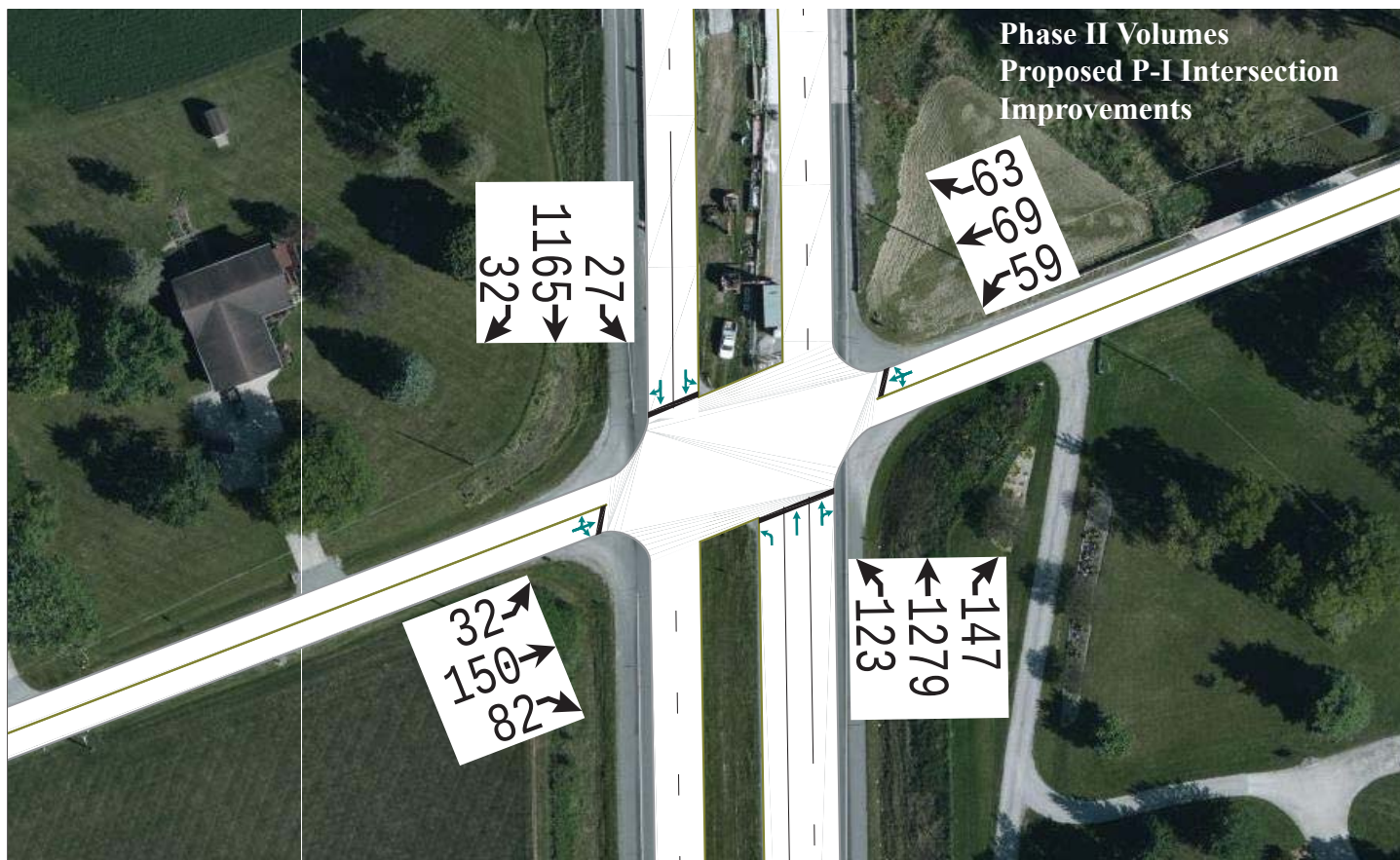
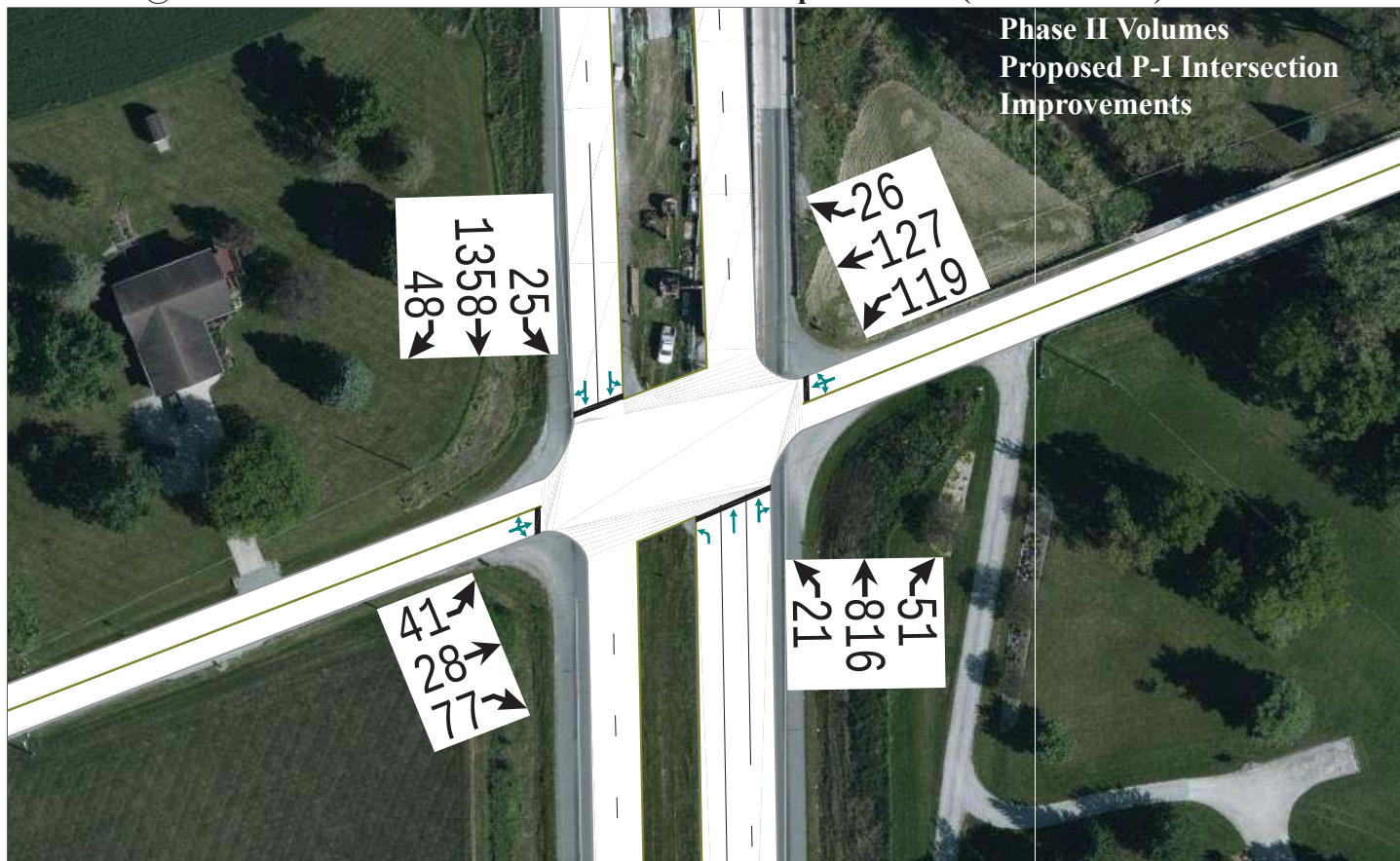


Figure 44

Shoaff Rd @ State Road 3 Phase II Volumes and Phase I Improvements (AM/PM Peak)



## Shoaff Road at Coldwater Road

### Scenario 1: - Existing Conditions

Shoaff Road and Coldwater Road are 2-lane facilities. Figure 45 shows the geometry at this intersection, along with the current a.m. and p.m. peak volumes, and LOS. The intersection analysis indicates that this intersection is currently operating at a LOS “B” for a.m. and p.m. peak hours for the eastbound movement.

### Scenario 2: - Proposed Development Recommendations

The analysis indicates the intersection will operate at a LOS “B” for a.m. and “C” for p.m. peak hours with the added trips of phase I during the peak hours for the eastbound movement. See Figure 46 for the a.m. and p.m. peak volumes, and LOS.

### Scenario 3: - Potential Development Recommendations

The analysis indicates the intersection will operate at a LOS “B” for a.m. and “C” for p.m. peak hours with the added trips of phase II during the peak hours for the eastbound movement. See Figure 47 for the a.m. and p.m. peak volumes, and LOS.

The table below shows the delay, and LOS by approach for the existing, the proposed phased I & II.

| <b>Shoaff Rd @ Coldwater Rd</b> |            |            |            |                                 |
|---------------------------------|------------|------------|------------|---------------------------------|
| <b>AM Peak</b>                  | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>Total</b>                    |
|                                 | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)/<br/>LOS</b> |
| Existing                        | A          | A          | B          | 1.5                             |
| Phase I - Existing Lanes        | A          | A          | B          | 3.1                             |
| Phase II - Existing Lanes       | A          | A          | B          | 3.4                             |

| <b>PM Peak</b>            | <b>NB</b>  | <b>SB</b>  | <b>EB</b>  | <b>Total</b>                    |
|---------------------------|------------|------------|------------|---------------------------------|
|                           | <b>LOS</b> | <b>LOS</b> | <b>LOS</b> | <b>Avg Delay (sec)/<br/>LOS</b> |
| Existing                  | A          | A          | B          | 1.5                             |
| Phase I - Existing Lanes  | A          | A          | C          | 3.2                             |
| Phase II - Existing Lanes | A          | A          | C          | 4.2                             |

Figure 45

Shoaff Rd @ Coldwater Rd Existing Volumes and Lane Configurations (AM/PM Peak)



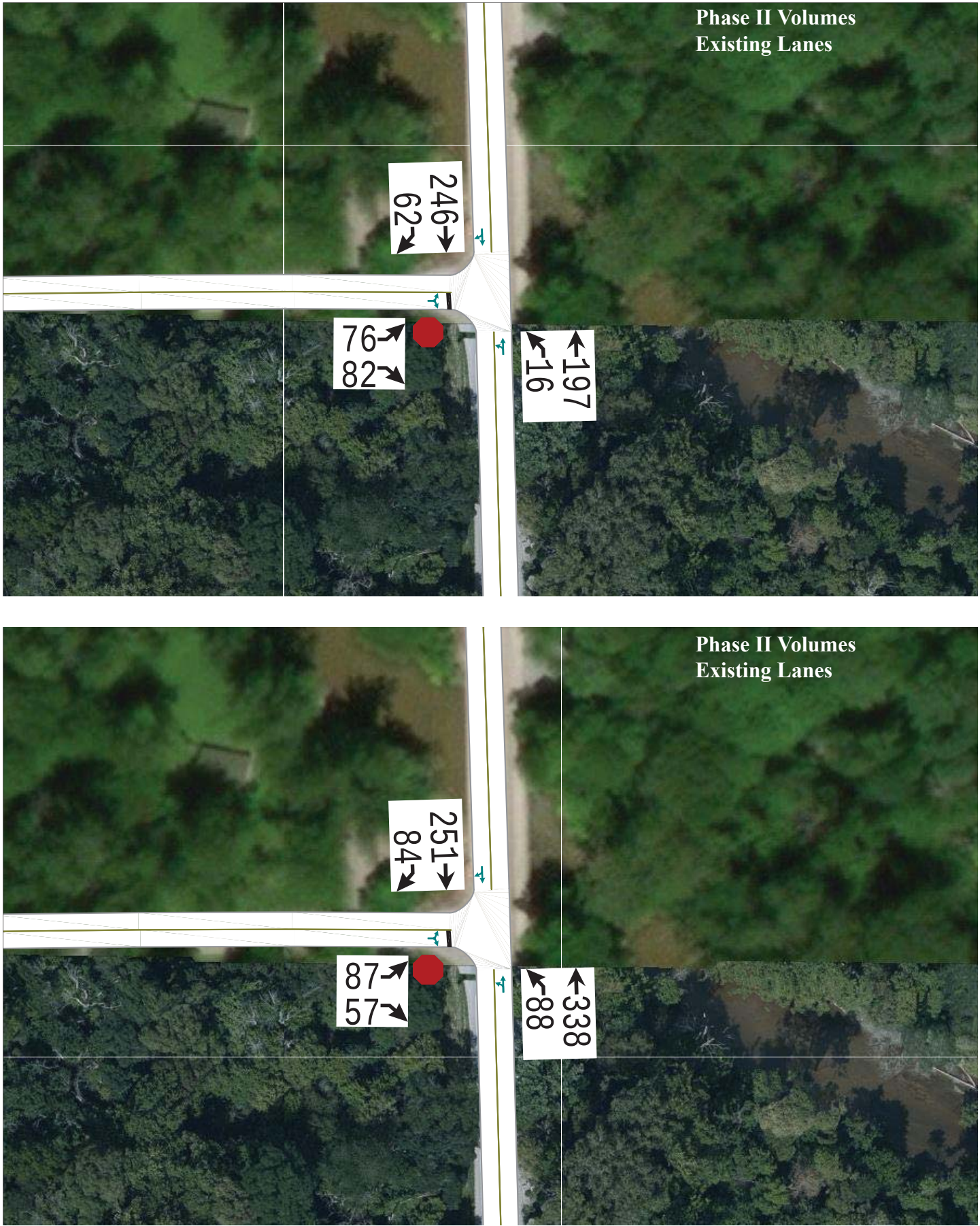
Figure 46

Shoaff Rd @ Coldwater Rd 3 Phase I Volumes and Existing Lane Configurations (AM/PM Peak)



Figure 47

Shoaff Rd @ Coldwater Rd 3 Phase II Volumes and Existing Lane Configurations (AM/PM Peak)



## **Conclusions:**

The Huntertown Sub-Area analysis included three corridors: Hathaway Road from Hand Road to Corbin Road, Cedar Canyons Road from Old Lima Road to Coldwater Road, and Shoaff Road from Hand Road to Coldwater Road. The analysis was initiated by NIRCC in FY19 due to the request from the town of Huntertown. The corridor and impact analysis estimates the number of new trips from anticipated developments that will be added to an existing facility to examine the changes in the level of service (LOS). LOS is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. LOS is based upon the average stopped delay per vehicle for various movements within the intersection. LOS “A” describes operations with very low delays, most vehicles do not stop at all. LOS “C” describes operations with longer delays, stopping vehicles are significant but many still pass without stopping. LOS “F” describes operations with delays unacceptable to most drivers, the intersection is exceeding capacity.

The intersections were analyzed using Synchro 10. The analyses were performed for three different levels of land use development including existing conditions, phase I developments, and phase II developments. Phase I focuses on proposed/approved land use developments and phase II focuses on potential developments on currently vacant land within the defined study area. Phase I has a one to five year horizon, while phase II has a five to ten year horizon. In phase II, vacant land is reviewed for development potential, and likely future developments are assessed. The analysis is based on the a.m. peak from 6:30-8:30am, and p.m. peak from 3:30-5:30pm.

The corridor and impact analysis indicates that the following improvements to efficiently accommodate the increase travel demand from planned and potential development along the three corridors.

**The recommended improvements are listed below based on Phase II traffic flow projections:**

### **Corridor 1 Hathaway Rd:**

- The Hathaway Rd / Hand Rd; intersection improvement; no recommendations at this time.
- The Hathaway Rd / Bethel Rd; intersection improvement; no recommendations at this time.
- The Hathaway Rd / State Road 3 intersection improvement; adding two exclusive left and a right on the eastbound, and exclusive left & right on the westbound approaches and an exclusive right turn lane on the northbound approach and an additional northbound/southbound through lane.
- The Hathaway Rd / Dunton Rd intersection improvement; with the planned addition of an exclusive eastbound left turn lane and a exclusive westbound right turn lane.

### **Corridor 2 Cedar Canyons Rd:**

- The Cedar Canyons Rd / Old Lima Rd intersection improvement; with addition of an exclusive westbound left turn lane..
- The Cedar Canyons Rd / State Road 3 intersection improvement; addition of exclusive right turn lanes on the north, south, and west approaches, along with an added exclusive left turn lane on the west approach.
- The Cedar Canyons Rd / Dunton Rd intersection improvement; no recommendations at this time.
- The Cedar Canyons Rd / Coldwater Rd intersection improvement; no recommendations at this time.

**Corridor 3 Shoaff Rd:**

- The Shoaff Rd / Hand Rd intersection improvement; no recommendations at this time.
- The Shoaff Rd / Old Lima Rd intersection improvement; signalization.
- The Shoaff Rd / State Road 3 intersection improvement; signalization.
- The Shoaff Rd / Coldwater Rd intersection improvement; no recommendations at this time.

# Appendix A

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**Corridor 1: Hathaway Road from Hand Road to Corbin Road  
Existing, Phase I, and Phase II Synchro 10 outputs**



**AM Existing**



# HCM 6th TWSC

## 1: Hand Rd & Hathaway Rd

04/19/2019

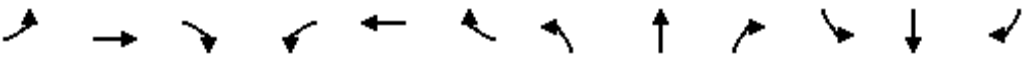
| Intersection              |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
|---------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh          | 3.4    |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Movement                  | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL  | SBT                                                                                 | SBR  |
| Lane Configurations       |        |  |        |       |  |       |        |  |      |      |  |      |
| Traffic Vol, veh/h        | 4      | 20                                                                                | 2      | 34    | 10                                                                                | 14    | 0      | 22                                                                                | 58   | 22   | 112                                                                                 | 4    |
| Future Vol, veh/h         | 4      | 20                                                                                | 2      | 34    | 10                                                                                | 14    | 0      | 22                                                                                | 58   | 22   | 112                                                                                 | 4    |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    |
| Sign Control              | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free | Free                                                                                | Free |
| RT Channelized            | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -    | -                                                                                   | None |
| Storage Length            | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Veh in Median Storage, #- | 0      | -                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Grade, %                  | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Peak Hour Factor          | 33     | 71                                                                                | 50     | 77    | 36                                                                                | 70    | 92     | 55                                                                                | 30   | 69   | 78                                                                                  | 33   |
| Heavy Vehicles, %         | 0      | 5                                                                                 | 0      | 6     | 0                                                                                 | 0     | 0      | 18                                                                                | 5    | 0    | 3                                                                                   | 0    |
| Mvmt Flow                 | 12     | 28                                                                                | 4      | 44    | 28                                                                                | 20    | 0      | 40                                                                                | 193  | 32   | 144                                                                                 | 12   |
|                           |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Major/Minor               | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |      |                                                                                     |      |
| Conflicting Flow All      | 375    | 447                                                                               | 150    | 367   | 357                                                                               | 137   | 156    | 0                                                                                 | 0    | 233  | 0                                                                                   | 0    |
| Stage 1                   | 214    | 214                                                                               | -      | 137   | 137                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                   | 161    | 233                                                                               | -      | 230   | 220                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Critical Hdwy             | 7.1    | 6.55                                                                              | 6.2    | 7.16  | 6.5                                                                               | 6.2   | 4.1    | -                                                                                 | -    | 4.1  | -                                                                                   | -    |
| Critical Hdwy Stg 1       | 6.1    | 5.55                                                                              | -      | 6.16  | 5.5                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Critical Hdwy Stg 2       | 6.1    | 5.55                                                                              | -      | 6.16  | 5.5                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Follow-up Hdwy            | 3.5    | 4.045                                                                             | 3.3    | 3.554 | 4                                                                                 | 3.3   | 2.2    | -                                                                                 | -    | 2.2  | -                                                                                   | -    |
| Pot Cap-1 Maneuver        | 586    | 502                                                                               | 902    | 582   | 572                                                                               | 917   | 1436   | -                                                                                 | -    | 1346 | -                                                                                   | -    |
| Stage 1                   | 793    | 720                                                                               | -      | 857   | 787                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                   | 846    | 706                                                                               | -      | 764   | 725                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Platoon blocked, %        |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |      | -                                                                                   | -    |
| Mov Cap-1 Maneuver        | 540    | 489                                                                               | 902    | 543   | 557                                                                               | 917   | 1436   | -                                                                                 | -    | 1346 | -                                                                                   | -    |
| Mov Cap-2 Maneuver        | 540    | 489                                                                               | -      | 543   | 557                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 1                   | 793    | 701                                                                               | -      | 857   | 787                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                   | 798    | 706                                                                               | -      | 711   | 706                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
|                           |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Approach                  | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |      |                                                                                     |      |
| HCM Control Delay, s      | 2.5    |                                                                                   | 12.1   |       | 0                                                                                 |       | 1.3    |                                                                                   |      |      |                                                                                     |      |
| HCM LOS                   | B      |                                                                                   | B      |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
|                           |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Minor Lane/Major Mvmt     | NBL    | NBT                                                                               | NBR    | EBLn  | WBLn                                                                              | 1     | SBL    | SBT                                                                               | SBR  |      |                                                                                     |      |
| Capacity (veh/h)          | 1436   | -                                                                                 | -      | 524   | 601                                                                               | 1346  | -      | -                                                                                 | -    |      |                                                                                     |      |
| HCM Lane V/C Ratio        | -      | -                                                                                 | -      | 0.085 | 0.153                                                                             | 0.024 | -      | -                                                                                 | -    |      |                                                                                     |      |
| HCM Control Delay (s)     | 0      | -                                                                                 | -      | 12.5  | 12.1                                                                              | 7.7   | 0      | -                                                                                 | -    |      |                                                                                     |      |
| HCM Lane LOS              | A      | -                                                                                 | -      | B     | B                                                                                 | A     | A      | -                                                                                 | -    |      |                                                                                     |      |
| HCM 95th %tile Q(veh)     | 0      | -                                                                                 | -      | 0.3   | 0.5                                                                               | 0.1   | -      | -                                                                                 | -    |      |                                                                                     |      |

| Intersection             |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|--------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Int Delay, s/veh         | 7.7                                                                               |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Movement                 | EBT                                                                               | EBR    | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                                |
| Lane Configurations      |  |        |  |  |  |  |
| Traffic Vol, veh/h       | 74                                                                                | 12     | 329                                                                               | 49                                                                                | 9                                                                                 | 107                                                                                |
| Future Vol, veh/h        | 74                                                                                | 12     | 329                                                                               | 49                                                                                | 9                                                                                 | 107                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Sign Control             | Free                                                                              | Free   | Free                                                                              | Free                                                                              | Stop                                                                              | Stop                                                                               |
| RT Channelized           | -                                                                                 | None   | -                                                                                 | None                                                                              | -                                                                                 | None                                                                               |
| Storage Length           | -                                                                                 | -      | 100                                                                               | -                                                                                 | 450                                                                               | 0                                                                                  |
| Veh in Median Storage, # | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                  |
| Grade, %                 | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                  |
| Peak Hour Factor         | 36                                                                                | 50     | 60                                                                                | 82                                                                                | 45                                                                                | 70                                                                                 |
| Heavy Vehicles, %        | 5                                                                                 | 0      | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                  |
| Mvmt Flow                | 206                                                                               | 24     | 548                                                                               | 60                                                                                | 20                                                                                | 153                                                                                |
|                          |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Major/Minor              | Major1                                                                            | Major2 |                                                                                   | Minor1                                                                            |                                                                                   |                                                                                    |
| Conflicting Flow All     | 0                                                                                 | 0      | 230                                                                               | 0                                                                                 | 1374                                                                              | 218                                                                                |
| Stage 1                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 218                                                                               | -                                                                                  |
| Stage 2                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 1156                                                                              | -                                                                                  |
| Critical Hdwy            | -                                                                                 | -      | 4.1                                                                               | -                                                                                 | 6.4                                                                               | 6.2                                                                                |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -                                                                                 | -                                                                                 | 5.4                                                                               | -                                                                                  |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -                                                                                 | -                                                                                 | 5.4                                                                               | -                                                                                  |
| Follow-up Hdwy           | -                                                                                 | -      | 2.2                                                                               | -                                                                                 | 3.5                                                                               | 3.3                                                                                |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1350                                                                              | -                                                                                 | 162                                                                               | 827                                                                                |
| Stage 1                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 823                                                                               | -                                                                                  |
| Stage 2                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 302                                                                               | -                                                                                  |
| Platoon blocked, %       | -                                                                                 | -      |                                                                                   | -                                                                                 |                                                                                   |                                                                                    |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1350                                                                              | -                                                                                 | 96                                                                                | 827                                                                                |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -                                                                                 | -                                                                                 | 96                                                                                | -                                                                                  |
| Stage 1                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 489                                                                               | -                                                                                  |
| Stage 2                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 302                                                                               | -                                                                                  |
|                          |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                          |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Approach                 | EB                                                                                | WB     |                                                                                   | NB                                                                                |                                                                                   |                                                                                    |
| HCM Control Delay, s     | 0                                                                                 | 8.5    |                                                                                   | 15.1                                                                              |                                                                                   |                                                                                    |
| HCM LOS                  | C                                                                                 |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                          |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                          |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | NBLn2  | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                                |
| Capacity (veh/h)         | 96                                                                                | 827    | -                                                                                 | -                                                                                 | 1350                                                                              | -                                                                                  |
| HCM Lane V/C Ratio       | 0.208                                                                             | 0.185  | -                                                                                 | -                                                                                 | 0.406                                                                             | -                                                                                  |
| HCM Control Delay (s)    | 52.1                                                                              | 10.3   | -                                                                                 | -                                                                                 | 9.5                                                                               | -                                                                                  |
| HCM Lane LOS             | F                                                                                 | B      | -                                                                                 | -                                                                                 | A                                                                                 | -                                                                                  |
| HCM 95th %tile Q(veh)    | 0.7                                                                               | 0.7    | -                                                                                 | -                                                                                 | 2                                                                                 | -                                                                                  |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

06/06/2019

|                              |  |      |      |       |       |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|-------|-------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |       | ↔     |      | ↔    | ↔    |      | ↔    | ↔    | ↔    |
| Traffic Volume (veh/h)       | 83                                                                                 | 52   | 40   | 69    | 111   | 54   | 47   | 508  | 19   | 36   | 1173 | 230  |
| Future Volume (veh/h)        | 83                                                                                 | 52   | 40   | 69    | 111   | 54   | 47   | 508  | 19   | 36   | 1173 | 230  |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00  |       | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |       | No    |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1544                                                                               | 1544 | 1544 | 1796  | 1796  | 1796 | 1707 | 1796 | 1796 | 1900 | 1856 | 1841 |
| Adj Flow Rate, veh/h         | 90                                                                                 | 57   | 43   | 75    | 121   | 59   | 51   | 552  | 21   | 39   | 1275 | 250  |
| 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 |
| Percent Heavy Veh, %         | 24                                                                                 | 24   | 24   | 7     | 7     | 7    | 13   | 7    | 7    | 0    | 3    | 4    |
| Cap, veh/h                   | 109                                                                                | 69   | 52   | 90    | 146   | 71   | 157  | 1440 | 55   | 395  | 1498 | 663  |
| Arrive On Green              | 0.16                                                                               | 0.16 | 0.16 | 0.18  | 0.18  | 0.18 | 0.04 | 0.43 | 0.43 | 0.04 | 0.43 | 0.43 |
| Sat Flow, veh/h              | 687                                                                                | 435  | 328  | 500   | 807   | 393  | 1626 | 3352 | 127  | 1810 | 3526 | 1560 |
| Grp Volume(v), veh/h         | 190                                                                                | 0    | 0    | 255   | 0     | 0    | 51   | 281  | 292  | 39   | 1275 | 250  |
| Grp Sat Flow(s),veh/h/ln     | 1451                                                                               | 0    | 0    | 1700  | 0     | 0    | 1626 | 1706 | 1773 | 1810 | 1763 | 1560 |
| Q Serve(g_s), s              | 15.4                                                                               | 0.0  | 0.0  | 17.5  | 0.0   | 0.0  | 2.1  | 13.6 | 13.6 | 1.4  | 39.4 | 13.3 |
| Cycle Q Clear(g_c), s        | 15.4                                                                               | 0.0  | 0.0  | 17.5  | 0.0   | 0.0  | 2.1  | 13.6 | 13.6 | 1.4  | 39.4 | 13.3 |
| Prop In Lane                 | 0.47                                                                               |      | 0.23 | 0.29  |       | 0.23 | 1.00 |      | 0.07 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h       | 229                                                                                | 0    | 0    | 307   | 0     | 0    | 157  | 733  | 762  | 395  | 1498 | 663  |
| V/C Ratio(X)                 | 0.83                                                                               | 0.00 | 0.00 | 0.83  | 0.00  | 0.00 | 0.33 | 0.38 | 0.38 | 0.10 | 0.85 | 0.38 |
| Avail Cap(c_a), veh/h        | 465                                                                                | 0    | 0    | 545   | 0     | 0    | 422  | 761  | 791  | 699  | 1572 | 696  |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00  | 0.00  | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 49.4                                                                               | 0.0  | 0.0  | 47.8  | 0.0   | 0.0  | 25.5 | 23.6 | 23.6 | 18.5 | 31.4 | 23.8 |
| Incr Delay (d2), s/veh       | 14.8                                                                               | 0.0  | 0.0  | 11.5  | 0.0   | 0.0  | 0.9  | 0.7  | 0.7  | 0.1  | 5.1  | 0.8  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 6.4                                                                                | 0.0  | 0.0  | 8.2   | 0.0   | 0.0  | 0.8  | 5.2  | 5.4  | 0.6  | 16.4 | 4.7  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |       |       |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 64.2                                                                               | 0.0  | 0.0  | 59.3  | 0.0   | 0.0  | 26.4 | 24.3 | 24.3 | 18.5 | 36.4 | 24.6 |
| LnGrp LOS                    | E                                                                                  | A    | A    | E     | A     | A    | C    | C    | C    | B    | D    | C    |
| Approach Vol, veh/h          |                                                                                    | 190  |      |       | 255   |      |      | 624  |      |      | 1564 |      |
| Approach Delay, s/veh        |                                                                                    | 64.2 |      |       | 59.3  |      |      | 24.5 |      |      | 34.1 |      |
| Approach LOS                 |                                                                                    | E    |      |       | E     |      |      | C    |      |      | C    |      |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4     | 5     | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 9.7                                                                                | 58.0 |      | 25.3  | 10.2  | 57.5 |      | 28.1 |      |      |      |      |
| Change Period (Y+Rc), s      | * 5.3                                                                              | 6.0  |      | * 6.2 | * 5.3 | 6.0  |      | 6.2  |      |      |      |      |
| Max Green Setting (Gmax), s* | 25                                                                                 | 54.0 |      | * 39  | * 25  | 54.0 |      | 38.8 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 3.4                                                                                | 15.6 |      | 17.4  | 4.1   | 41.4 |      | 19.5 |      |      |      |      |
| Green Ext Time (p_c), s      | 0.0                                                                                | 6.8  |      | 1.8   | 0.1   | 10.0 |      | 2.4  |      |      |      |      |

### Intersection Summary

HCM 6th Ctrl Delay 36.4

HCM 6th LOS D

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|---------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh          | 1.2    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                  | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations       |        |  |  |        |  |       |
| Traffic Vol, veh/h        | 8      | 161                                                                               | 131                                                                               | 8      | 10                                                                                | 13    |
| Future Vol, veh/h         | 8      | 161                                                                               | 131                                                                               | 8      | 10                                                                                | 13    |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0     |
| Sign Control              | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop  |
| RT Channelized            | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None  |
| Storage Length            | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -     |
| Veh in Median Storage, #- |        | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Grade, %                  | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Peak Hour Factor          | 50     | 79                                                                                | 70                                                                                | 33     | 50                                                                                | 65    |
| Heavy Vehicles, %         | 13     | 24                                                                                | 2                                                                                 | 0      | 0                                                                                 | 23    |
| Mvmt Flow                 | 16     | 204                                                                               | 187                                                                               | 24     | 20                                                                                | 20    |
|                           |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Major/Minor               | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All      | 211    | 0                                                                                 | -                                                                                 | 0      | 435                                                                               | 199   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 199                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 236                                                                               | -     |
| Critical Hdwy             | 4.23   | -                                                                                 | -                                                                                 | -      | 6.4                                                                               | 6.43  |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -     |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -     |
| Follow-up Hdwy            | 2.317  | -                                                                                 | -                                                                                 | -      | 3.5                                                                               | 3.507 |
| Pot Cap-1 Maneuver        | 1297   | -                                                                                 | -                                                                                 | -      | 582                                                                               | 791   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 839                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 808                                                                               | -     |
| Platoon blocked, %        |        | -                                                                                 | -                                                                                 | -      |                                                                                   |       |
| Mov Cap-1 Maneuver        | 1297   | -                                                                                 | -                                                                                 | -      | 574                                                                               | 791   |
| Mov Cap-2 Maneuver        | -      | -                                                                                 | -                                                                                 | -      | 574                                                                               | -     |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 827                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 808                                                                               | -     |
|                           |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|                           |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Approach                  | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s      | 0.6    | 0                                                                                 |                                                                                   | 10.8   |                                                                                   |       |
| HCM LOS                   | B      |                                                                                   |                                                                                   |        |                                                                                   |       |
|                           |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|                           |        |                                                                                   |                                                                                   |        |                                                                                   |       |
| Minor Lane/Major Mvmt     | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)          | 1297   | -                                                                                 | -                                                                                 | -      | -                                                                                 | 665   |
| HCM Lane V/C Ratio        | 0.012  | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.06  |
| HCM Control Delay (s)     | 7.8    | 0                                                                                 | -                                                                                 | -      | -                                                                                 | 10.8  |
| HCM Lane LOS              | A      | A                                                                                 | -                                                                                 | -      | -                                                                                 | B     |
| HCM 95th %tile Q(veh)     | 0      | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.2   |

**PM Existing**



| Intersection              |        |      |        |       |        |       |        |      |      |      |      |      |
|---------------------------|--------|------|--------|-------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 3.8    |      |        |       |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |       | ↕      |       |        | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 3      | 13   | 2      | 15    | 23     | 25    | 1      | 124  | 18   | 23   | 72   | 4    |
| Future Vol, veh/h         | 3      | 13   | 2      | 15    | 23     | 25    | 1      | 124  | 18   | 23   | 72   | 4    |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -     | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -    | -      | -     | -      | -     | -      | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 75     | 54   | 50     | 54    | 96     | 78    | 25     | 76   | 90   | 64   | 82   | 50   |
| Heavy Vehicles, %         | 0      | 0    | 0      | 7     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                 | 4      | 24   | 4      | 28    | 24     | 32    | 4      | 163  | 20   | 36   | 88   | 8    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |      | Minor1 |       | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 373    | 355  | 92     | 359   | 349    | 173   | 96     | 0    | 0    | 183  | 0    | 0    |
| Stage 1                   | 164    | 164  | -      | 181   | 181    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 209    | 191  | -      | 178   | 168    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.1    | 6.5  | 6.2    | 7.17  | 6.5    | 6.2   | 4.1    | -    | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.1    | 5.5  | -      | 6.17  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.1    | 5.5  | -      | 6.17  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.5    | 4    | 3.3    | 3.563 | 4      | 3.3   | 2.2    | -    | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 588    | 574  | 971    | 587   | 578    | 876   | 1510   | -    | -    | 1404 | -    | -    |
| Stage 1                   | 843    | 766  | -      | 809   | 754    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 798    | 746  | -      | 812   | 763    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |      |        |       |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 536    | 557  | 971    | 552   | 561    | 876   | 1510   | -    | -    | 1404 | -    | -    |
| Mov Cap-2 Maneuver        | 536    | 557  | -      | 552   | 561    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 840    | 745  | -      | 807   | 752    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 742    | 744  | -      | 761   | 742    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Approach                  | EB     |      | WB     |       | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 1.5    |      | 11.4   |       | 0.2    |       | 2.1    |      |      |      |      |      |
| HCM LOS                   | B      |      | B      |       |        |       |        |      |      |      |      |      |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn  | WBLn1  | SBL   | SBT    | SBR  |      |      |      |      |
| Capacity (veh/h)          | 1510   | -    | -      | 585   | 646    | 1404  | -      | -    |      |      |      |      |
| HCM Lane V/C Ratio        | 0.003  | -    | -      | 0.055 | 0.13   | 0.026 | -      | -    |      |      |      |      |
| HCM Control Delay (s)     | 7.4    | 0    | -      | 11.5  | 11.4   | 7.6   | 0      | -    |      |      |      |      |
| HCM Lane LOS              | A      | A    | -      | B     | B      | A     | A      | -    |      |      |      |      |
| HCM 95th %tile Q(veh)     | 0      | -    | -      | 0.2   | 0.4    | 0.1   | -      | -    |      |      |      |      |

| Intersection             |                                                                                   |       |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|--------------------------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Int Delay, s/veh         | 6.7                                                                               |       |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Movement                 | EBT                                                                               | EBR   | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                                |
| Lane Configurations      |  |       |  |  |  |  |
| Traffic Vol, veh/h       | 83                                                                                | 19    | 106                                                                               | 40                                                                                | 23                                                                                | 164                                                                                |
| Future Vol, veh/h        | 83                                                                                | 19    | 106                                                                               | 40                                                                                | 23                                                                                | 164                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Sign Control             | Free                                                                              | Free  | Free                                                                              | Free                                                                              | Stop                                                                              | Stop                                                                               |
| RT Channelized           | -                                                                                 | None  | -                                                                                 | None                                                                              | -                                                                                 | None                                                                               |
| Storage Length           | -                                                                                 | -     | 100                                                                               | -                                                                                 | 450                                                                               | 0                                                                                  |
| Veh in Median Storage, # | 0                                                                                 | -     | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                  |
| Grade, %                 | 0                                                                                 | -     | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                  |
| Peak Hour Factor         | 44                                                                                | 40    | 66                                                                                | 77                                                                                | 72                                                                                | 57                                                                                 |
| Heavy Vehicles, %        | 18                                                                                | 79    | 3                                                                                 | 0                                                                                 | 26                                                                                | 3                                                                                  |
| Mvmt Flow                | 189                                                                               | 48    | 161                                                                               | 52                                                                                | 32                                                                                | 288                                                                                |
|                          |                                                                                   |       |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Major/Minor              | Major1                                                                            |       | Major2                                                                            |                                                                                   | Minor1                                                                            |                                                                                    |
| Conflicting Flow All     | 0                                                                                 | 0     | 237                                                                               | 0                                                                                 | 587                                                                               | 213                                                                                |
| Stage 1                  | -                                                                                 | -     | -                                                                                 | -                                                                                 | 213                                                                               | -                                                                                  |
| Stage 2                  | -                                                                                 | -     | -                                                                                 | -                                                                                 | 374                                                                               | -                                                                                  |
| Critical Hdwy            | -                                                                                 | -     | 4.13                                                                              | -                                                                                 | 6.66                                                                              | 6.23                                                                               |
| Critical Hdwy Stg 1      | -                                                                                 | -     | -                                                                                 | -                                                                                 | 5.66                                                                              | -                                                                                  |
| Critical Hdwy Stg 2      | -                                                                                 | -     | -                                                                                 | -                                                                                 | 5.66                                                                              | -                                                                                  |
| Follow-up Hdwy           | -                                                                                 | -     | 2.227                                                                             | -                                                                                 | 3.734                                                                             | 3.327                                                                              |
| Pot Cap-1 Maneuver       | -                                                                                 | -     | 1324                                                                              | -                                                                                 | 435                                                                               | 825                                                                                |
| Stage 1                  | -                                                                                 | -     | -                                                                                 | -                                                                                 | 769                                                                               | -                                                                                  |
| Stage 2                  | -                                                                                 | -     | -                                                                                 | -                                                                                 | 646                                                                               | -                                                                                  |
| Platoon blocked, %       | -                                                                                 | -     |                                                                                   | -                                                                                 |                                                                                   |                                                                                    |
| Mov Cap-1 Maneuver       | -                                                                                 | -     | 1324                                                                              | -                                                                                 | 382                                                                               | 825                                                                                |
| Mov Cap-2 Maneuver       | -                                                                                 | -     | -                                                                                 | -                                                                                 | 382                                                                               | -                                                                                  |
| Stage 1                  | -                                                                                 | -     | -                                                                                 | -                                                                                 | 675                                                                               | -                                                                                  |
| Stage 2                  | -                                                                                 | -     | -                                                                                 | -                                                                                 | 646                                                                               | -                                                                                  |
|                          |                                                                                   |       |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                          |                                                                                   |       |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Approach                 | EB                                                                                |       | WB                                                                                |                                                                                   | NB                                                                                |                                                                                    |
| HCM Control Delay, s     | 0                                                                                 |       | 6.1                                                                               |                                                                                   | 12.1                                                                              |                                                                                    |
| HCM LOS                  | B                                                                                 |       |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                          |                                                                                   |       |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | NBLn2 | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                                |
| Capacity (veh/h)         | 382                                                                               | 825   | -                                                                                 | -                                                                                 | 1324                                                                              | -                                                                                  |
| HCM Lane V/C Ratio       | 0.084                                                                             | 0.349 | -                                                                                 | -                                                                                 | 0.121                                                                             | -                                                                                  |
| HCM Control Delay (s)    | 15.3                                                                              | 11.7  | -                                                                                 | -                                                                                 | 8.1                                                                               | -                                                                                  |
| HCM Lane LOS             | C                                                                                 | B     | -                                                                                 | -                                                                                 | A                                                                                 | -                                                                                  |
| HCM 95th %tile Q(veh)    | 0.3                                                                               | 1.6   | -                                                                                 | -                                                                                 | 0.4                                                                               | -                                                                                  |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

06/06/2019

|                              |  |      |      |       |       |      |      |       |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|-------|-------|------|------|-------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |       | ↔     |      | ↔    | ↕     | ↕    | ↔    | ↕    | ↕    |
| Traffic Volume (veh/h)       | 123                                                                                | 37   | 13   | 45    | 34    | 45   | 26   | 1100  | 61   | 52   | 861  | 70   |
| Future Volume (veh/h)        | 123                                                                                | 37   | 13   | 45    | 34    | 45   | 26   | 1100  | 61   | 52   | 861  | 70   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00  |       | 1.00 | 1.00 |       | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |       | No    |      |      | No    |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900  | 1900  | 1900 | 1870 | 1870  | 1870 | 1870 | 1870 | 1885 |
| Adj Flow Rate, veh/h         | 145                                                                                | 48   | 20   | 68    | 44    | 64   | 40   | 1170  | 72   | 76   | 990  | 111  |
| Peak Hour Factor             | 0.85                                                                               | 0.77 | 0.65 | 0.66  | 0.77  | 0.70 | 0.65 | 0.94  | 0.85 | 0.68 | 0.87 | 0.63 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0     | 0     | 0    | 2    | 2     | 2    | 2    | 2    | 1    |
| Cap, veh/h                   | 271                                                                                | 70   | 26   | 171   | 103   | 112  | 352  | 1618  | 100  | 326  | 1768 | 795  |
| Arrive On Green              | 0.18                                                                               | 0.18 | 0.18 | 0.18  | 0.18  | 0.18 | 0.05 | 0.48  | 0.48 | 0.07 | 0.50 | 0.50 |
| Sat Flow, veh/h              | 970                                                                                | 386  | 141  | 511   | 566   | 616  | 1781 | 3400  | 209  | 1781 | 3554 | 1598 |
| Grp Volume(v), veh/h         | 213                                                                                | 0    | 0    | 176   | 0     | 0    | 40   | 611   | 631  | 76   | 990  | 111  |
| Grp Sat Flow(s),veh/h/ln     | 1497                                                                               | 0    | 0    | 1693  | 0     | 0    | 1781 | 1777  | 1833 | 1781 | 1777 | 1598 |
| Q Serve(g_s), s              | 2.7                                                                                | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.7  | 17.6  | 17.7 | 1.3  | 12.5 | 2.4  |
| Cycle Q Clear(g_c), s        | 8.5                                                                                | 0.0  | 0.0  | 5.9   | 0.0   | 0.0  | 0.7  | 17.6  | 17.7 | 1.3  | 12.5 | 2.4  |
| Prop In Lane                 | 0.68                                                                               |      | 0.09 | 0.39  |       | 0.36 | 1.00 |       | 0.11 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h       | 367                                                                                | 0    | 0    | 386   | 0     | 0    | 352  | 846   | 872  | 326  | 1768 | 795  |
| V/C Ratio(X)                 | 0.58                                                                               | 0.00 | 0.00 | 0.46  | 0.00  | 0.00 | 0.11 | 0.72  | 0.72 | 0.23 | 0.56 | 0.14 |
| Avail Cap(c_a), veh/h        | 971                                                                                | 0    | 0    | 1043  | 0     | 0    | 953  | 1494  | 1541 | 887  | 2988 | 1343 |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00  | 0.00  | 0.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 24.9                                                                               | 0.0  | 0.0  | 23.9  | 0.0   | 0.0  | 8.1  | 13.4  | 13.5 | 9.9  | 11.2 | 8.7  |
| Incr Delay (d2), s/veh       | 1.5                                                                                | 0.0  | 0.0  | 0.8   | 0.0   | 0.0  | 0.1  | 1.2   | 1.2  | 0.4  | 0.3  | 0.1  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 2.9                                                                                | 0.0  | 0.0  | 2.2   | 0.0   | 0.0  | 0.2  | 6.3   | 6.5  | 0.4  | 4.2  | 0.7  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |       |       |      |      |       |      |      |      |      |
| LnGrp Delay(d),s/veh         | 26.3                                                                               | 0.0  | 0.0  | 24.7  | 0.0   | 0.0  | 8.2  | 14.6  | 14.6 | 10.2 | 11.5 | 8.8  |
| LnGrp LOS                    | C                                                                                  | A    | A    | C     | A     | A    | A    | B     | B    | B    | B    | A    |
| Approach Vol, veh/h          |                                                                                    | 213  |      |       | 176   |      |      | 1282  |      |      | 1177 |      |
| Approach Delay, s/veh        |                                                                                    | 26.3 |      |       | 24.7  |      |      | 14.4  |      |      | 11.2 |      |
| Approach LOS                 |                                                                                    | C    |      |       | C     |      |      | B     |      |      | B    |      |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4     | 5     | 6    |      | 8     |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 8.4                                                                                | 38.0 |      | 17.9  | 9.8   | 36.6 |      | 17.9  |      |      |      |      |
| Change Period (Y+Rc), s      | * 5.3                                                                              | 6.0  |      | * 6.2 | * 5.3 | 6.0  |      | * 6.2 |      |      |      |      |
| Max Green Setting (Gmax), s  | * 25                                                                               | 54.0 |      | * 39  | * 25  | 54.0 |      | * 39  |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 2.7                                                                                | 14.5 |      | 10.5  | 3.3   | 19.7 |      | 7.9   |      |      |      |      |
| Green Ext Time (p_c), s      | 0.1                                                                                | 9.5  |      | 1.2   | 0.2   | 10.9 |      | 0.9   |      |      |      |      |

### Intersection Summary

HCM 6th Ctrl Delay 14.6

HCM 6th LOS B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |        |                                                                                   |                                                                                   |        |                                                                                   |      |
|---------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh          | 1.1    |                                                                                   |                                                                                   |        |                                                                                   |      |
| Movement                  | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR  |
| Lane Configurations       |        |  |  |        |  |      |
| Traffic Vol, veh/h        | 12     | 116                                                                               | 163                                                                               | 7      | 6                                                                                 | 5    |
| Future Vol, veh/h         | 12     | 116                                                                               | 163                                                                               | 7      | 6                                                                                 | 5    |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0    |
| Sign Control              | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop |
| RT Channelized            | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None |
| Storage Length            | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -    |
| Veh in Median Storage, #- | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -    |
| Grade, %                  | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -    |
| Peak Hour Factor          | 50     | 88                                                                                | 89                                                                                | 58     | 75                                                                                | 42   |
| Heavy Vehicles, %         | 8      | 3                                                                                 | 4                                                                                 | 0      | 17                                                                                | 20   |
| Mvmt Flow                 | 24     | 132                                                                               | 183                                                                               | 12     | 8                                                                                 | 12   |
| Major/Minor               | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |      |
| Conflicting Flow All      | 195    | 0                                                                                 | -                                                                                 | 0      | 369                                                                               | 189  |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 189                                                                               | -    |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 180                                                                               | -    |
| Critical Hdwy             | 4.18   | -                                                                                 | -                                                                                 | -      | 6.57                                                                              | 6.4  |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -                                                                                 | -      | 5.57                                                                              | -    |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -                                                                                 | -      | 5.57                                                                              | -    |
| Follow-up Hdwy            | 2.272  | -                                                                                 | -                                                                                 | -      | 3.653                                                                             | 3.48 |
| Pot Cap-1 Maneuver        | 1343   | -                                                                                 | -                                                                                 | -      | 603                                                                               | 809  |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 808                                                                               | -    |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 816                                                                               | -    |
| Platoon blocked, %        | -      | -                                                                                 | -                                                                                 | -      | -                                                                                 | -    |
| Mov Cap-1 Maneuver        | 1343   | -                                                                                 | -                                                                                 | -      | 592                                                                               | 809  |
| Mov Cap-2 Maneuver        | -      | -                                                                                 | -                                                                                 | -      | 592                                                                               | -    |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 793                                                                               | -    |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 816                                                                               | -    |
| Approach                  | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s      | 1.2    | 0                                                                                 |                                                                                   | 10.3   |                                                                                   |      |
| HCM LOS                   |        |                                                                                   |                                                                                   | B      |                                                                                   |      |
| Minor Lane/Major Mvmt     | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |      |
| Capacity (veh/h)          | 1343   | -                                                                                 | -                                                                                 | -      | 705                                                                               |      |
| HCM Lane V/C Ratio        | 0.018  | -                                                                                 | -                                                                                 | -      | 0.028                                                                             |      |
| HCM Control Delay (s)     | 7.7    | 0                                                                                 | -                                                                                 | -      | 10.3                                                                              |      |
| HCM Lane LOS              | A      | A                                                                                 | -                                                                                 | -      | B                                                                                 |      |
| HCM 95th %tile Q(veh)     | 0.1    | -                                                                                 | -                                                                                 | -      | 0.1                                                                               |      |

# **AM Phase I**



# HCM 6th TWSC

## 1: Hand Rd & Hathaway Rd

04/19/2019

### Intersection

Int Delay, s/veh 3.8

| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 4    | 27   | 2    | 47   | 13   | 17   | 0    | 27   | 85   | 30   | 128  | 4    |
| Future Vol, veh/h         | 4    | 27   | 2    | 47   | 13   | 17   | 0    | 27   | 85   | 30   | 128  | 4    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0    | 5    | 0    | 6    | 0    | 0    | 0    | 18   | 5    | 0    | 3    | 0    |
| Mvmt Flow                 | 4    | 29   | 2    | 51   | 14   | 18   | 0    | 29   | 92   | 33   | 139  | 4    |

| Major/Minor          | Minor2 |       | Minor1 |       | Major1 |     |      | Major2 |   |      |   |   |
|----------------------|--------|-------|--------|-------|--------|-----|------|--------|---|------|---|---|
| Conflicting Flow All | 298    | 328   | 141    | 298   | 284    | 75  | 143  | 0      | 0 | 121  | 0 | 0 |
| Stage 1              | 207    | 207   | -      | 75    | 75     | -   | -    | -      | - | -    | - | - |
| Stage 2              | 91     | 121   | -      | 223   | 209    | -   | -    | -      | - | -    | - | - |
| Critical Hdwy        | 7.1    | 6.55  | 6.2    | 7.16  | 6.5    | 6.2 | 4.1  | -      | - | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.1    | 5.55  | -      | 6.16  | 5.5    | -   | -    | -      | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.1    | 5.55  | -      | 6.16  | 5.5    | -   | -    | -      | - | -    | - | - |
| Follow-up Hdwy       | 3.5    | 4.045 | 3.3    | 3.554 | 4      | 3.3 | 2.2  | -      | - | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 658    | 586   | 912    | 646   | 628    | 992 | 1452 | -      | - | 1479 | - | - |
| Stage 1              | 800    | 725   | -      | 924   | 836    | -   | -    | -      | - | -    | - | - |
| Stage 2              | 921    | 790   | -      | 771   | 733    | -   | -    | -      | - | -    | - | - |
| Platoon blocked, %   |        |       |        |       |        |     |      | -      | - |      | - | - |
| Mov Cap-1 Maneuver   | 623    | 572   | 912    | 608   | 613    | 992 | 1452 | -      | - | 1479 | - | - |
| Mov Cap-2 Maneuver   | 623    | 572   | -      | 608   | 613    | -   | -    | -      | - | -    | - | - |
| Stage 1              | 800    | 708   | -      | 924   | 836    | -   | -    | -      | - | -    | - | - |
| Stage 2              | 889    | 790   | -      | 720   | 715    | -   | -    | -      | - | -    | - | - |

| Approach             | EB  | WB   | NB | SB  |
|----------------------|-----|------|----|-----|
| HCM Control Delay, s | 1.5 | 11.2 | 0  | 1.4 |
| HCM LOS              | B   | B    |    |     |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn  | WBLn  | SBL   | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1452 | -   | -   | 591   | 666   | 1479  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.061 | 0.126 | 0.022 | -   | -   |
| HCM Control Delay (s) | 0    | -   | -   | 11.5  | 11.2  | 7.5   | 0   | -   |
| HCM Lane LOS          | A    | -   | -   | B     | B     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.2   | 0.4   | 0.1   | -   | -   |

| Intersection              |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|---------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Int Delay, s/veh          | 7.2                                                                               |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Movement                  | EBT                                                                               | EBR    | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                                |
| Lane Configurations       |  |        |  |  |  |  |
| Traffic Vol, veh/h        | 124                                                                               | 14     | 454                                                                               | 69                                                                                | 10                                                                                | 174                                                                                |
| Future Vol, veh/h         | 124                                                                               | 14     | 454                                                                               | 69                                                                                | 10                                                                                | 174                                                                                |
| Conflicting Peds, #/hr    | 0                                                                                 | 0      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Sign Control              | Free                                                                              | Free   | Free                                                                              | Free                                                                              | Stop                                                                              | Stop                                                                               |
| RT Channelized            | -                                                                                 | None   | -                                                                                 | None                                                                              | -                                                                                 | None                                                                               |
| Storage Length            | -                                                                                 | -      | 100                                                                               | -                                                                                 | 450                                                                               | 0                                                                                  |
| Veh in Median Storage, #0 | -                                                                                 | -      | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                  |
| Grade, %                  | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                  |
| Peak Hour Factor          | 92                                                                                | 92     | 92                                                                                | 92                                                                                | 92                                                                                | 92                                                                                 |
| Heavy Vehicles, %         | 5                                                                                 | 0      | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                  |
| Mvmt Flow                 | 135                                                                               | 15     | 493                                                                               | 75                                                                                | 11                                                                                | 189                                                                                |
| Major/Minor               | Major1                                                                            | Major2 |                                                                                   | Minor1                                                                            |                                                                                   |                                                                                    |
| Conflicting Flow All      | 0                                                                                 | 0      | 150                                                                               | 0                                                                                 | 1204                                                                              | 143                                                                                |
| Stage 1                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 143                                                                               | -                                                                                  |
| Stage 2                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 1061                                                                              | -                                                                                  |
| Critical Hdwy             | -                                                                                 | -      | 4.1                                                                               | -                                                                                 | 6.4                                                                               | 6.2                                                                                |
| Critical Hdwy Stg 1       | -                                                                                 | -      | -                                                                                 | -                                                                                 | 5.4                                                                               | -                                                                                  |
| Critical Hdwy Stg 2       | -                                                                                 | -      | -                                                                                 | -                                                                                 | 5.4                                                                               | -                                                                                  |
| Follow-up Hdwy            | -                                                                                 | -      | 2.2                                                                               | -                                                                                 | 3.5                                                                               | 3.3                                                                                |
| Pot Cap-1 Maneuver        | -                                                                                 | -      | 1444                                                                              | -                                                                                 | 205                                                                               | 910                                                                                |
| Stage 1                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 889                                                                               | -                                                                                  |
| Stage 2                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 336                                                                               | -                                                                                  |
| Platoon blocked, %        | -                                                                                 | -      | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                  |
| Mov Cap-1 Maneuver        | -                                                                                 | -      | 1444                                                                              | -                                                                                 | 135                                                                               | 910                                                                                |
| Mov Cap-2 Maneuver        | -                                                                                 | -      | -                                                                                 | -                                                                                 | 135                                                                               | -                                                                                  |
| Stage 1                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 586                                                                               | -                                                                                  |
| Stage 2                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 336                                                                               | -                                                                                  |
| Approach                  | EB                                                                                | WB     |                                                                                   | NB                                                                                |                                                                                   |                                                                                    |
| HCM Control Delay, s      | 0                                                                                 | 7.6    |                                                                                   | 11.3                                                                              |                                                                                   |                                                                                    |
| HCM LOS                   |                                                                                   |        |                                                                                   | B                                                                                 |                                                                                   |                                                                                    |
| Minor Lane/Major Mvmt     | NBLn1                                                                             | NBLn2  | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                                |
| Capacity (veh/h)          | 135                                                                               | 910    | -                                                                                 | -                                                                                 | 1444                                                                              | -                                                                                  |
| HCM Lane V/C Ratio        | 0.081                                                                             | 0.208  | -                                                                                 | -                                                                                 | 0.342                                                                             | -                                                                                  |
| HCM Control Delay (s)     | 34                                                                                | 10     | -                                                                                 | -                                                                                 | 8.8                                                                               | -                                                                                  |
| HCM Lane LOS              | D                                                                                 | B      | -                                                                                 | -                                                                                 | A                                                                                 | -                                                                                  |
| HCM 95th %tile Q(veh)     | 0.3                                                                               | 0.8    | -                                                                                 | -                                                                                 | 1.5                                                                               | -                                                                                  |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

04/19/2019

|                              |  |      |      |       |       |      |      |      |      |       |       |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|-------|-------|------|------|------|------|-------|-------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT   | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |       | ↔     |      | ↔    | ↔    |      | ↔     | ↔     | ↔    |
| Traffic Volume (veh/h)       | 172                                                                                | 139  | 73   | 127   | 284   | 161  | 88   | 675  | 34   | 71    | 1467  | 456  |
| Future Volume (veh/h)        | 172                                                                                | 139  | 73   | 127   | 284   | 161  | 88   | 675  | 34   | 71    | 1467  | 456  |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0     | 0     | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00  |       | 1.00 | 1.00 |      | 1.00 | 1.00  |       | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Work Zone On Approach        | No                                                                                 |      |      | No    |       |      | No   |      |      | No    |       |      |
| Adj Sat Flow, veh/h/ln       | 1544                                                                               | 1544 | 1544 | 1796  | 1796  | 1796 | 1707 | 1796 | 1796 | 1900  | 1856  | 1841 |
| Adj Flow Rate, veh/h         | 187                                                                                | 151  | 79   | 138   | 309   | 175  | 96   | 734  | 37   | 77    | 1595  | 496  |
| 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 |
| Percent Heavy Veh, %         | 24                                                                                 | 24   | 24   | 7     | 7     | 7    | 13   | 7    | 7    | 0     | 3     | 4    |
| Cap, veh/h                   | 121                                                                                | 98   | 51   | 97    | 217   | 123  | 113  | 1189 | 60   | 243   | 1262  | 558  |
| Arrive On Green              | 0.19                                                                               | 0.19 | 0.19 | 0.26  | 0.26  | 0.26 | 0.04 | 0.36 | 0.36 | 0.04  | 0.36  | 0.36 |
| Sat Flow, veh/h              | 655                                                                                | 529  | 277  | 375   | 840   | 476  | 1626 | 3306 | 167  | 1810  | 3526  | 1560 |
| Grp Volume(v), veh/h         | 417                                                                                | 0    | 0    | 622   | 0     | 0    | 96   | 379  | 392  | 77    | 1595  | 496  |
| Grp Sat Flow(s),veh/h/ln     | 1462                                                                               | 0    | 0    | 1692  | 0     | 0    | 1626 | 1706 | 1766 | 1810  | 1763  | 1560 |
| Q Serve(g_s), s              | 27.8                                                                               | 0.0  | 0.0  | 38.8  | 0.0   | 0.0  | 5.7  | 27.4 | 27.4 | 4.0   | 53.7  | 44.9 |
| Cycle Q Clear(g_c), s        | 27.8                                                                               | 0.0  | 0.0  | 38.8  | 0.0   | 0.0  | 5.7  | 27.4 | 27.4 | 4.0   | 53.7  | 44.9 |
| Prop In Lane                 | 0.45                                                                               |      | 0.19 | 0.22  |       | 0.28 | 1.00 |      | 0.09 | 1.00  |       | 1.00 |
| Lane Grp Cap(c), veh/h       | 271                                                                                | 0    | 0    | 438   | 0     | 0    | 113  | 613  | 635  | 243   | 1262  | 558  |
| V/C Ratio(X)                 | 1.54                                                                               | 0.00 | 0.00 | 1.42  | 0.00  | 0.00 | 0.85 | 0.62 | 0.62 | 0.32  | 1.26  | 0.89 |
| Avail Cap(c_a), veh/h        | 271                                                                                | 0    | 0    | 438   | 0     | 0    | 113  | 613  | 635  | 251   | 1262  | 558  |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00  | 0.00  | 0.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Uniform Delay (d), s/veh     | 61.1                                                                               | 0.0  | 0.0  | 55.6  | 0.0   | 0.0  | 38.5 | 39.5 | 39.6 | 31.2  | 48.2  | 45.3 |
| Incr Delay (d2), s/veh       | 260.4                                                                              | 0.0  | 0.0  | 202.6 | 0.0   | 0.0  | 41.5 | 2.7  | 2.7  | 0.4   | 125.2 | 16.9 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 29.7                                                                               | 0.0  | 0.0  | 40.7  | 0.0   | 0.0  | 3.4  | 11.5 | 11.9 | 1.7   | 44.3  | 19.1 |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |       |       |      |      |      |      |       |       |      |
| LnGrp Delay(d),s/veh         | 321.5                                                                              | 0.0  | 0.0  | 258.2 | 0.0   | 0.0  | 80.0 | 42.3 | 42.2 | 31.6  | 173.3 | 62.2 |
| LnGrp LOS                    | F                                                                                  | A    | A    | F     | A     | A    | F    | D    | D    | C     | F     | E    |
| Approach Vol, veh/h          | 417                                                                                |      |      | 622   |       |      | 867  |      |      | 2168  |       |      |
| Approach Delay, s/veh        | 321.5                                                                              |      |      | 258.2 |       |      | 46.4 |      |      | 142.9 |       |      |
| Approach LOS                 | F                                                                                  |      |      | F     |       |      | D    |      |      | F     |       |      |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4     | 5     | 6    |      | 8    |      |       |       |      |
| Phs Duration (G+Y+Rc), s     | 11.1                                                                               | 59.9 |      | 34.0  | 11.3  | 59.7 |      | 45.0 |      |       |       |      |
| Change Period (Y+Rc), s      | * 5.3                                                                              | 6.0  |      | * 6.2 | * 5.3 | 6.0  |      | 6.2  |      |       |       |      |
| Max Green Setting (Gmax), s  | * 6.4                                                                              | 53.3 |      | * 28  | * 6   | 53.7 |      | 38.8 |      |       |       |      |
| Max Q Clear Time (g_c+I1), s | 6.0                                                                                | 29.4 |      | 29.8  | 7.7   | 55.7 |      | 40.8 |      |       |       |      |
| Green Ext Time (p_c), s      | 0.0                                                                                | 8.3  |      | 0.0   | 0.0   | 0.0  |      | 0.0  |      |       |       |      |

### Intersection Summary

HCM 6th Ctrl Delay 158.2

HCM 6th LOS F

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|---------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh          | 2.1    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                  | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations       |        |  |  |        |  |       |
| Traffic Vol, veh/h        | 51     | 274                                                                               | 254                                                                               | 10     | 29                                                                                | 47    |
| Future Vol, veh/h         | 51     | 274                                                                               | 254                                                                               | 10     | 29                                                                                | 47    |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0     |
| Sign Control              | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop  |
| RT Channelized            | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None  |
| Storage Length            | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -     |
| Veh in Median Storage, #- | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Grade, %                  | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Peak Hour Factor          | 92     | 92                                                                                | 92                                                                                | 92     | 92                                                                                | 92    |
| Heavy Vehicles, %         | 13     | 24                                                                                | 2                                                                                 | 0      | 0                                                                                 | 23    |
| Mvmt Flow                 | 55     | 298                                                                               | 276                                                                               | 11     | 32                                                                                | 51    |
| Major/Minor               | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All      | 287    | 0                                                                                 | -                                                                                 | 0      | 690                                                                               | 282   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 282                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 408                                                                               | -     |
| Critical Hdwy             | 4.23   | -                                                                                 | -                                                                                 | -      | 6.4                                                                               | 6.43  |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -     |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -     |
| Follow-up Hdwy            | 2.317  | -                                                                                 | -                                                                                 | -      | 3.5                                                                               | 3.507 |
| Pot Cap-1 Maneuver        | 1215   | -                                                                                 | -                                                                                 | -      | 414                                                                               | 709   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 770                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 676                                                                               | -     |
| Platoon blocked, %        | -      | -                                                                                 | -                                                                                 | -      | -                                                                                 | -     |
| Mov Cap-1 Maneuver        | 1215   | -                                                                                 | -                                                                                 | -      | 392                                                                               | 709   |
| Mov Cap-2 Maneuver        | -      | -                                                                                 | -                                                                                 | -      | 392                                                                               | -     |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 728                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 676                                                                               | -     |
| Approach                  | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s      | 1.3    | 0                                                                                 |                                                                                   | 12.8   |                                                                                   |       |
| HCM LOS                   |        |                                                                                   |                                                                                   | B      |                                                                                   |       |
| Minor Lane/Major Mvmt     | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)          | 1215   | -                                                                                 | -                                                                                 | -      | 542                                                                               |       |
| HCM Lane V/C Ratio        | 0.046  | -                                                                                 | -                                                                                 | -      | 0.152                                                                             |       |
| HCM Control Delay (s)     | 8.1    | 0                                                                                 | -                                                                                 | -      | 12.8                                                                              |       |
| HCM Lane LOS              | A      | A                                                                                 | -                                                                                 | -      | B                                                                                 |       |
| HCM 95th %tile Q(veh)     | 0.1    | -                                                                                 | -                                                                                 | -      | 0.5                                                                               |       |

# **AM Phase I Modified**



# HCM 6th TWSC

## 1: Hand Rd & Hathaway Rd

04/19/2019

| Intersection              |        |       |        |       |        |       |        |      |      |      |      |      |
|---------------------------|--------|-------|--------|-------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 3.8    |       |        |       |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT   | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕     |        |       | ↕      |       |        | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 4      | 27    | 2      | 47    | 13     | 17    | 0      | 27   | 85   | 30   | 128  | 4    |
| Future Vol, veh/h         | 4      | 27    | 2      | 47    | 13     | 17    | 0      | 27   | 85   | 30   | 128  | 4    |
| Conflicting Peds, #/hr    | 0      | 0     | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop  | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -     | None   | -     | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -     | -      | -     | -      | -     | -      | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0     | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0     | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92     | 92    | 92     | 92    | 92     | 92    | 92     | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0      | 5     | 0      | 6     | 0      | 0     | 0      | 18   | 5    | 0    | 3    | 0    |
| Mvmt Flow                 | 4      | 29    | 2      | 51    | 14     | 18    | 0      | 29   | 92   | 33   | 139  | 4    |
|                           |        |       |        |       |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |       | Minor1 |       | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 298    | 328   | 141    | 298   | 284    | 75    | 143    | 0    | 0    | 121  | 0    | 0    |
| Stage 1                   | 207    | 207   | -      | 75    | 75     | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 91     | 121   | -      | 223   | 209    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.1    | 6.55  | 6.2    | 7.16  | 6.5    | 6.2   | 4.1    | -    | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.1    | 5.55  | -      | 6.16  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.1    | 5.55  | -      | 6.16  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.5    | 4.045 | 3.3    | 3.554 | 4      | 3.3   | 2.2    | -    | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 658    | 586   | 912    | 646   | 628    | 992   | 1452   | -    | -    | 1479 | -    | -    |
| Stage 1                   | 800    | 725   | -      | 924   | 836    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 921    | 790   | -      | 771   | 733    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |       |        |       |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 623    | 572   | 912    | 608   | 613    | 992   | 1452   | -    | -    | 1479 | -    | -    |
| Mov Cap-2 Maneuver        | 623    | 572   | -      | 608   | 613    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 800    | 708   | -      | 924   | 836    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 889    | 790   | -      | 720   | 715    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |       |        |       |        |       |        |      |      |      |      |      |
| Approach                  | EB     |       | WB     |       | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 1.5    |       | 11.2   |       | 0      |       | 1.4    |      |      |      |      |      |
| HCM LOS                   | B      |       | B      |       |        |       |        |      |      |      |      |      |
|                           |        |       |        |       |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT   | NBR    | EBLn  | WBLn1  | SBL   | SBT    | SBR  |      |      |      |      |
| Capacity (veh/h)          | 1452   | -     | -      | 591   | 666    | 1479  | -      | -    |      |      |      |      |
| HCM Lane V/C Ratio        | -      | -     | -      | 0.061 | 0.126  | 0.022 | -      | -    |      |      |      |      |
| HCM Control Delay (s)     | 0      | -     | -      | 11.5  | 11.2   | 7.5   | 0      | -    |      |      |      |      |
| HCM Lane LOS              | A      | -     | -      | B     | B      | A     | A      | -    |      |      |      |      |
| HCM 95th %tile Q(veh)     | 0      | -     | -      | 0.2   | 0.4    | 0.1   | -      | -    |      |      |      |      |

| Intersection             |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 7.2                                                                               |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Movement                 | EBT                                                                               | EBR    | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations      |  |        |  |  |  |  |
| Traffic Vol, veh/h       | 124                                                                               | 14     | 454                                                                               | 69                                                                                | 10                                                                                | 174                                                                               |
| Future Vol, veh/h        | 124                                                                               | 14     | 454                                                                               | 69                                                                                | 10                                                                                | 174                                                                               |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free   | Free                                                                              | Free                                                                              | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None   | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length           | -                                                                                 | -      | 100                                                                               | -                                                                                 | 450                                                                               | 0                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92     | 92                                                                                | 92                                                                                | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 5                                                                                 | 0      | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 |
| Mvmt Flow                | 135                                                                               | 15     | 493                                                                               | 75                                                                                | 11                                                                                | 189                                                                               |
|                          |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Major/Minor              | Major1                                                                            | Major2 |                                                                                   | Minor1                                                                            |                                                                                   |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0      | 150                                                                               | 0                                                                                 | 1204                                                                              | 143                                                                               |
| Stage 1                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 143                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 1061                                                                              | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -      | 4.1                                                                               | -                                                                                 | 6.4                                                                               | 6.2                                                                               |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -                                                                                 | -                                                                                 | 5.4                                                                               | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -                                                                                 | -                                                                                 | 5.4                                                                               | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -      | 2.2                                                                               | -                                                                                 | 3.5                                                                               | 3.3                                                                               |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1444                                                                              | -                                                                                 | 205                                                                               | 910                                                                               |
| Stage 1                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 889                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 336                                                                               | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -      |                                                                                   | -                                                                                 |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1444                                                                              | -                                                                                 | 135                                                                               | 910                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -                                                                                 | -                                                                                 | 135                                                                               | -                                                                                 |
| Stage 1                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 586                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -                                                                                 | -                                                                                 | 336                                                                               | -                                                                                 |
|                          |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach                 | EB                                                                                | WB     |                                                                                   | NB                                                                                |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 | 7.6    |                                                                                   | 11.3                                                                              |                                                                                   |                                                                                   |
| HCM LOS                  | B                                                                                 |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|                          |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | NBLn2  | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               |
| Capacity (veh/h)         | 135                                                                               | 910    | -                                                                                 | -                                                                                 | 1444                                                                              | -                                                                                 |
| HCM Lane V/C Ratio       | 0.081                                                                             | 0.208  | -                                                                                 | -                                                                                 | 0.342                                                                             | -                                                                                 |
| HCM Control Delay (s)    | 34                                                                                | 10     | -                                                                                 | -                                                                                 | 8.8                                                                               | -                                                                                 |
| HCM Lane LOS             | D                                                                                 | B      | -                                                                                 | -                                                                                 | A                                                                                 | -                                                                                 |
| HCM 95th %tile Q(veh)    | 0.3                                                                               | 0.8    | -                                                                                 | -                                                                                 | 1.5                                                                               | -                                                                                 |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

06/06/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 172                                                                               | 139                                                                               | 73                                                                                | 127                                                                               | 284                                                                               | 161                                                                               | 88                                                                                  | 675                                                                                 | 34                                                                                  | 71                                                                                  | 1467                                                                                | 456                                                                                 |
| Future Volume (veh/h)        | 172                                                                               | 139                                                                               | 73                                                                                | 127                                                                               | 284                                                                               | 161                                                                               | 88                                                                                  | 675                                                                                 | 34                                                                                  | 71                                                                                  | 1467                                                                                | 456                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1737                                                                              | 1544                                                                              | 1826                                                                              | 1900                                                                              | 1796                                                                              | 1722                                                                              | 1707                                                                                | 1796                                                                                | 1737                                                                                | 1900                                                                                | 1856                                                                                | 1841                                                                                |
| Adj Flow Rate, veh/h         | 187                                                                               | 151                                                                               | 79                                                                                | 138                                                                               | 309                                                                               | 175                                                                               | 96                                                                                  | 734                                                                                 | 37                                                                                  | 77                                                                                  | 1595                                                                                | 496                                                                                 |
| 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                                                                                |
| Percent Heavy Veh, %         | 11                                                                                | 24                                                                                | 5                                                                                 | 0                                                                                 | 7                                                                                 | 12                                                                                | 13                                                                                  | 7                                                                                   | 11                                                                                  | 0                                                                                   | 3                                                                                   | 4                                                                                   |
| Cap, veh/h                   | 209                                                                               | 271                                                                               | 272                                                                               | 319                                                                               | 316                                                                               | 256                                                                               | 163                                                                                 | 1545                                                                                | 667                                                                                 | 383                                                                                 | 1586                                                                                | 702                                                                                 |
| Arrive On Green              | 0.08                                                                              | 0.18                                                                              | 0.18                                                                              | 0.08                                                                              | 0.18                                                                              | 0.18                                                                              | 0.06                                                                                | 0.45                                                                                | 0.45                                                                                | 0.05                                                                                | 0.45                                                                                | 0.45                                                                                |
| Sat Flow, veh/h              | 1654                                                                              | 1544                                                                              | 1547                                                                              | 1810                                                                              | 1796                                                                              | 1459                                                                              | 1626                                                                                | 3413                                                                                | 1472                                                                                | 1810                                                                                | 3526                                                                                | 1560                                                                                |
| Grp Volume(v), veh/h         | 187                                                                               | 151                                                                               | 79                                                                                | 138                                                                               | 309                                                                               | 175                                                                               | 96                                                                                  | 734                                                                                 | 37                                                                                  | 77                                                                                  | 1595                                                                                | 496                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1654                                                                              | 1544                                                                              | 1547                                                                              | 1810                                                                              | 1796                                                                              | 1459                                                                              | 1626                                                                                | 1706                                                                                | 1472                                                                                | 1810                                                                                | 1763                                                                                | 1560                                                                                |
| Q Serve(g_s), s              | 8.0                                                                               | 8.9                                                                               | 4.4                                                                               | 6.1                                                                               | 17.1                                                                              | 11.2                                                                              | 3.1                                                                                 | 14.9                                                                                | 1.4                                                                                 | 2.2                                                                                 | 44.8                                                                                | 25.5                                                                                |
| Cycle Q Clear(g_c), s        | 8.0                                                                               | 8.9                                                                               | 4.4                                                                               | 6.1                                                                               | 17.1                                                                              | 11.2                                                                              | 3.1                                                                                 | 14.9                                                                                | 1.4                                                                                 | 2.2                                                                                 | 44.8                                                                                | 25.5                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 209                                                                               | 271                                                                               | 272                                                                               | 319                                                                               | 316                                                                               | 256                                                                               | 163                                                                                 | 1545                                                                                | 667                                                                                 | 383                                                                                 | 1586                                                                                | 702                                                                                 |
| V/C Ratio(X)                 | 0.89                                                                              | 0.56                                                                              | 0.29                                                                              | 0.43                                                                              | 0.98                                                                              | 0.68                                                                              | 0.59                                                                                | 0.47                                                                                | 0.06                                                                                | 0.20                                                                                | 1.01                                                                                | 0.71                                                                                |
| Avail Cap(c_a), veh/h        | 209                                                                               | 271                                                                               | 272                                                                               | 319                                                                               | 316                                                                               | 256                                                                               | 170                                                                                 | 1545                                                                                | 667                                                                                 | 398                                                                                 | 1586                                                                                | 702                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 34.5                                                                              | 37.5                                                                              | 35.6                                                                              | 30.3                                                                              | 40.9                                                                              | 38.4                                                                              | 23.0                                                                                | 19.0                                                                                | 15.3                                                                                | 13.9                                                                                | 27.4                                                                                | 22.1                                                                                |
| Incr Delay (d2), s/veh       | 36.6                                                                              | 4.3                                                                               | 1.2                                                                               | 2.0                                                                               | 45.0                                                                              | 9.3                                                                               | 4.1                                                                                 | 0.5                                                                                 | 0.1                                                                                 | 0.1                                                                                 | 24.0                                                                                | 4.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 5.7                                                                               | 3.5                                                                               | 1.7                                                                               | 2.7                                                                               | 11.1                                                                              | 4.5                                                                               | 1.2                                                                                 | 5.3                                                                                 | 0.5                                                                                 | 0.8                                                                                 | 21.4                                                                                | 9.3                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 71.1                                                                              | 41.8                                                                              | 36.9                                                                              | 32.3                                                                              | 85.9                                                                              | 47.8                                                                              | 27.1                                                                                | 19.5                                                                                | 15.4                                                                                | 14.1                                                                                | 51.3                                                                                | 26.2                                                                                |
| LnGrp LOS                    | E                                                                                 | D                                                                                 | D                                                                                 | C                                                                                 | F                                                                                 | D                                                                                 | C                                                                                   | B                                                                                   | B                                                                                   | B                                                                                   | F                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 417                                                                               |                                                                                   |                                                                                   | 622                                                                               |                                                                                   |                                                                                   | 867                                                                                 |                                                                                     |                                                                                     | 2168                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 54.0                                                                              |                                                                                   |                                                                                   | 63.3                                                                              |                                                                                   |                                                                                   | 20.1                                                                                |                                                                                     |                                                                                     | 44.3                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.6                                                                              | 51.1                                                                              | 14.2                                                                              | 23.7                                                                              | 10.9                                                                              | 50.8                                                                              | 14.2                                                                                | 23.7                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 5.3                                                                             | 6.0                                                                               | * 6.2                                                                             | * 6.2                                                                             | * 5.3                                                                             | 6.0                                                                               | * 6.2                                                                               | * 6.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.1                                                                               | 44.7                                                                              | * 8                                                                               | * 18                                                                              | * 6                                                                               | 44.8                                                                              | * 8                                                                                 | * 18                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 4.2                                                                               | 16.9                                                                              | 8.1                                                                               | 10.9                                                                              | 5.1                                                                               | 46.8                                                                              | 10.0                                                                                | 19.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 9.3                                                                               | 0.0                                                                               | 0.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 43.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection              |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|---------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh          | 2.1    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                  | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations       |        |  |  |        |  |       |
| Traffic Vol, veh/h        | 51     | 274                                                                               | 254                                                                               | 10     | 29                                                                                | 47    |
| Future Vol, veh/h         | 51     | 274                                                                               | 254                                                                               | 10     | 29                                                                                | 47    |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0     |
| Sign Control              | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop  |
| RT Channelized            | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None  |
| Storage Length            | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -     |
| Veh in Median Storage, #- | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Grade, %                  | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Peak Hour Factor          | 92     | 92                                                                                | 92                                                                                | 92     | 92                                                                                | 92    |
| Heavy Vehicles, %         | 13     | 24                                                                                | 2                                                                                 | 0      | 0                                                                                 | 23    |
| Mvmt Flow                 | 55     | 298                                                                               | 276                                                                               | 11     | 32                                                                                | 51    |
| Major/Minor               | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All      | 287    | 0                                                                                 | -                                                                                 | 0      | 690                                                                               | 282   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 282                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 408                                                                               | -     |
| Critical Hdwy             | 4.23   | -                                                                                 | -                                                                                 | -      | 6.4                                                                               | 6.43  |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -     |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -     |
| Follow-up Hdwy            | 2.317  | -                                                                                 | -                                                                                 | -      | 3.5                                                                               | 3.507 |
| Pot Cap-1 Maneuver        | 1215   | -                                                                                 | -                                                                                 | -      | 414                                                                               | 709   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 770                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 676                                                                               | -     |
| Platoon blocked, %        | -      | -                                                                                 | -                                                                                 | -      | -                                                                                 | -     |
| Mov Cap-1 Maneuver        | 1215   | -                                                                                 | -                                                                                 | -      | 392                                                                               | 709   |
| Mov Cap-2 Maneuver        | -      | -                                                                                 | -                                                                                 | -      | 392                                                                               | -     |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 728                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 676                                                                               | -     |
| Approach                  | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s      | 1.3    | 0                                                                                 |                                                                                   | 12.8   |                                                                                   |       |
| HCM LOS                   |        |                                                                                   |                                                                                   | B      |                                                                                   |       |
| Minor Lane/Major Mvmt     | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)          | 1215   | -                                                                                 | -                                                                                 | -      | 542                                                                               |       |
| HCM Lane V/C Ratio        | 0.046  | -                                                                                 | -                                                                                 | -      | 0.152                                                                             |       |
| HCM Control Delay (s)     | 8.1    | 0                                                                                 | -                                                                                 | -      | 12.8                                                                              |       |
| HCM Lane LOS              | A      | A                                                                                 | -                                                                                 | -      | B                                                                                 |       |
| HCM 95th %tile Q(veh)     | 0.1    | -                                                                                 | -                                                                                 | -      | 0.5                                                                               |       |

# PM Phase I



# HCM 6th TWSC

## 1: Hand Rd & Hathaway Rd

04/19/2019

| Intersection              |        |      |        |       |        |       |        |      |      |      |      |      |
|---------------------------|--------|------|--------|-------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 3.6    |      |        |       |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |       | ↕      |       |        | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 3      | 18   | 2      | 21    | 29     | 31    | 1      | 144  | 25   | 31   | 85   | 4    |
| Future Vol, veh/h         | 3      | 18   | 2      | 21    | 29     | 31    | 1      | 144  | 25   | 31   | 85   | 4    |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -     | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -    | -      | -     | -      | -     | -      | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92     | 92   | 92     | 92    | 92     | 92    | 92     | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0      | 0    | 0      | 7     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                 | 3      | 20   | 2      | 23    | 32     | 34    | 1      | 157  | 27   | 34   | 92   | 4    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |      | Minor1 |       | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 368    | 348  | 94     | 346   | 337    | 171   | 96     | 0    | 0    | 184  | 0    | 0    |
| Stage 1                   | 162    | 162  | -      | 173   | 173    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 206    | 186  | -      | 173   | 164    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.1    | 6.5  | 6.2    | 7.17  | 6.5    | 6.2   | 4.1    | -    | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.1    | 5.5  | -      | 6.17  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.1    | 5.5  | -      | 6.17  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.5    | 4    | 3.3    | 3.563 | 4      | 3.3   | 2.2    | -    | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 592    | 579  | 968    | 599   | 587    | 878   | 1510   | -    | -    | 1403 | -    | -    |
| Stage 1                   | 845    | 768  | -      | 817   | 760    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 801    | 750  | -      | 817   | 766    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |      |        |       |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 534    | 563  | 968    | 570   | 571    | 878   | 1510   | -    | -    | 1403 | -    | -    |
| Mov Cap-2 Maneuver        | 534    | 563  | -      | 570   | 571    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 844    | 748  | -      | 816   | 759    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 738    | 749  | -      | 773   | 746    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Approach                  | EB     |      | WB     |       | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 1.5    |      | 11.3   |       | 0      |       | 2      |      |      |      |      |      |
| HCM LOS                   | B      |      | B      |       |        |       |        |      |      |      |      |      |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn  | WBLn1  | SBL   | SBT    | SBR  |      |      |      |      |
| Capacity (veh/h)          | 1510   | -    | -      | 580   | 659    | 1403  | -      | -    |      |      |      |      |
| HCM Lane V/C Ratio        | 0.001  | -    | -      | 0.043 | 0.134  | 0.024 | -      | -    |      |      |      |      |
| HCM Control Delay (s)     | 7.4    | 0    | -      | 11.5  | 11.3   | 7.6   | 0      | -    |      |      |      |      |
| HCM Lane LOS              | A      | A    | -      | B     | B      | A     | A      | -    |      |      |      |      |
| HCM 95th %tile Q(veh)     | 0      | -    | -      | 0.1   | 0.5    | 0.1   | -      | -    |      |      |      |      |

| Intersection             |        |        |       |        |       |       |
|--------------------------|--------|--------|-------|--------|-------|-------|
| Int Delay, s/veh         | 6.6    |        |       |        |       |       |
| Movement                 | EBT    | EBR    | WBL   | WBT    | NBL   | NBR   |
| Lane Configurations      | ↰      |        | ↱     | ↰      | ↱     | ↱     |
| Traffic Vol, veh/h       | 108    | 22     | 171   | 61     | 27    | 218   |
| Future Vol, veh/h        | 108    | 22     | 171   | 61     | 27    | 218   |
| Conflicting Peds, #/hr   | 0      | 0      | 0     | 0      | 0     | 0     |
| Sign Control             | Free   | Free   | Free  | Free   | Stop  | Stop  |
| RT Channelized           | -      | None   | -     | None   | -     | None  |
| Storage Length           | -      | -      | 100   | -      | 450   | 0     |
| Veh in Median Storage, # | -      | -      | -     | 0      | 0     | -     |
| Grade, %                 | 0      | -      | -     | 0      | 0     | -     |
| Peak Hour Factor         | 92     | 92     | 92    | 92     | 92    | 92    |
| Heavy Vehicles, %        | 18     | 79     | 3     | 0      | 26    | 3     |
| Mvmt Flow                | 117    | 24     | 186   | 66     | 29    | 237   |
|                          |        |        |       |        |       |       |
| Major/Minor              | Major1 | Major2 |       | Minor1 |       |       |
| Conflicting Flow All     | 0      | 0      | 141   | 0      | 567   | 129   |
| Stage 1                  | -      | -      | -     | -      | 129   | -     |
| Stage 2                  | -      | -      | -     | -      | 438   | -     |
| Critical Hdwy            | -      | -      | 4.13  | -      | 6.66  | 6.23  |
| Critical Hdwy Stg 1      | -      | -      | -     | -      | 5.66  | -     |
| Critical Hdwy Stg 2      | -      | -      | -     | -      | 5.66  | -     |
| Follow-up Hdwy           | -      | -      | 2.227 | -      | 3.734 | 3.327 |
| Pot Cap-1 Maneuver       | -      | -      | 1436  | -      | 447   | 918   |
| Stage 1                  | -      | -      | -     | -      | 841   | -     |
| Stage 2                  | -      | -      | -     | -      | 603   | -     |
| Platoon blocked, %       | -      | -      |       | -      |       |       |
| Mov Cap-1 Maneuver       | -      | -      | 1436  | -      | 389   | 918   |
| Mov Cap-2 Maneuver       | -      | -      | -     | -      | 389   | -     |
| Stage 1                  | -      | -      | -     | -      | 732   | -     |
| Stage 2                  | -      | -      | -     | -      | 603   | -     |
|                          |        |        |       |        |       |       |
|                          |        |        |       |        |       |       |
| Approach                 | EB     | WB     |       | NB     |       |       |
| HCM Control Delay, s     | 0      | 5.8    |       | 10.8   |       |       |
| HCM LOS                  | B      |        |       |        |       |       |
|                          |        |        |       |        |       |       |
|                          |        |        |       |        |       |       |
| Minor Lane/Major Mvmt    | NBLn   | NBLn2  | EBT   | EBR    | WBL   | WBT   |
| Capacity (veh/h)         | 389    | 918    | -     | -      | 1436  | -     |
| HCM Lane V/C Ratio       | 0.075  | 0.258  | -     | -      | 0.129 | -     |
| HCM Control Delay (s)    | 15     | 10.3   | -     | -      | 7.9   | -     |
| HCM Lane LOS             | C      | B      | -     | -      | A     | -     |
| HCM 95th %tile Q(veh)    | 0.2    | 1      | -     | -      | 0.4   | -     |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

04/19/2019

|                              |  |      |      |       |       |      |      |       |       |       |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|-------|-------|------|------|-------|-------|-------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR   | SBL   | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |       | ↔     |      | ↔    | ↔     |       | ↔     | ↔    | ↔    |
| Traffic Volume (veh/h)       | 316                                                                                | 114  | 30   | 83    | 82    | 173  | 48   | 1457  | 116   | 114   | 1204 | 142  |
| Future Volume (veh/h)        | 316                                                                                | 114  | 30   | 83    | 82    | 173  | 48   | 1457  | 116   | 114   | 1204 | 142  |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0     | 0     | 0    | 0    | 0     | 0     | 0     | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00  |       | 1.00 | 1.00 |       | 1.00  | 1.00  |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |       | No    |      |      | No    |       |       | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900  | 1900  | 1900 | 1870 | 1870  | 1870  | 1870  | 1870 | 1885 |
| Adj Flow Rate, veh/h         | 343                                                                                | 124  | 33   | 90    | 89    | 188  | 52   | 1584  | 126   | 124   | 1309 | 154  |
| 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 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0     | 0     | 0    | 2    | 2     | 2     | 2     | 2    | 1    |
| Cap, veh/h                   | 344                                                                                | 109  | 29   | 187   | 190   | 362  | 150  | 1399  | 110   | 128   | 1510 | 679  |
| Arrive On Green              | 0.41                                                                               | 0.41 | 0.41 | 0.41  | 0.41  | 0.41 | 0.04 | 0.42  | 0.42  | 0.04  | 0.42 | 0.42 |
| Sat Flow, veh/h              | 729                                                                                | 263  | 70   | 374   | 460   | 877  | 1781 | 3336  | 263   | 1781  | 3554 | 1598 |
| Grp Volume(v), veh/h         | 500                                                                                | 0    | 0    | 367   | 0     | 0    | 52   | 838   | 872   | 124   | 1309 | 154  |
| Grp Sat Flow(s),veh/h/ln     | 1062                                                                               | 0    | 0    | 1712  | 0     | 0    | 1781 | 1777  | 1823  | 1781  | 1777 | 1598 |
| Q Serve(g_s), s              | 35.5                                                                               | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 2.3  | 58.7  | 58.7  | 5.7   | 46.9 | 8.6  |
| Cycle Q Clear(g_c), s        | 57.8                                                                               | 0.0  | 0.0  | 22.3  | 0.0   | 0.0  | 2.3  | 58.7  | 58.7  | 5.7   | 46.9 | 8.6  |
| Prop In Lane                 | 0.69                                                                               |      | 0.07 | 0.25  |       | 0.51 | 1.00 |       | 0.14  | 1.00  |      | 1.00 |
| Lane Grp Cap(c), veh/h       | 482                                                                                | 0    | 0    | 739   | 0     | 0    | 150  | 745   | 764   | 128   | 1510 | 679  |
| V/C Ratio(X)                 | 1.04                                                                               | 0.00 | 0.00 | 0.50  | 0.00  | 0.00 | 0.35 | 1.12  | 1.14  | 0.97  | 0.87 | 0.23 |
| Avail Cap(c_a), veh/h        | 482                                                                                | 0    | 0    | 739   | 0     | 0    | 162  | 745   | 764   | 128   | 1510 | 679  |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00  | 0.00  | 0.00 | 0.56 | 0.56  | 0.56  | 1.00  | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 46.9                                                                               | 0.0  | 0.0  | 30.7  | 0.0   | 0.0  | 30.0 | 40.7  | 40.7  | 34.4  | 36.6 | 25.6 |
| Incr Delay (d2), s/veh       | 51.1                                                                               | 0.0  | 0.0  | 0.5   | 0.0   | 0.0  | 0.8  | 66.4  | 72.8  | 70.3  | 7.0  | 0.8  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 23.8                                                                               | 0.0  | 0.0  | 9.1   | 0.0   | 0.0  | 1.0  | 39.0  | 41.4  | 4.9   | 21.7 | 3.5  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |       |       |      |      |       |       |       |      |      |
| LnGrp Delay(d),s/veh         | 98.0                                                                               | 0.0  | 0.0  | 31.2  | 0.0   | 0.0  | 30.8 | 107.0 | 113.5 | 104.7 | 43.6 | 26.4 |
| LnGrp LOS                    | F                                                                                  | A    | A    | C     | A     | A    | C    | F     | F     | F     | D    | C    |
| Approach Vol, veh/h          |                                                                                    | 500  |      |       | 367   |      |      | 1762  |       |       | 1587 |      |
| Approach Delay, s/veh        |                                                                                    | 98.0 |      |       | 31.2  |      |      | 108.0 |       |       | 46.7 |      |
| Approach LOS                 |                                                                                    | F    |      |       | C     |      |      | F     |       |       | D    |      |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4     | 5     | 6    |      | 8     |       |       |      |      |
| Phs Duration (G+Y+Rc), s     | 10.5                                                                               | 65.5 |      | 64.0  | 11.3  | 64.7 |      | 64.0  |       |       |      |      |
| Change Period (Y+Rc), s      | * 5.3                                                                              | 6.0  |      | * 6.2 | * 5.3 | 6.0  |      | * 6.2 |       |       |      |      |
| Max Green Setting (Gmax), s  | 6.1                                                                                | 58.6 |      | * 58  | * 6   | 58.7 |      | * 58  |       |       |      |      |
| Max Q Clear Time (g_c+I1), s | 4.3                                                                                | 48.9 |      | 59.8  | 7.7   | 60.7 |      | 24.3  |       |       |      |      |
| Green Ext Time (p_c), s      | 0.0                                                                                | 6.4  |      | 0.0   | 0.0   | 0.0  |      | 2.3   |       |       |      |      |

### Intersection Summary

HCM 6th Ctrl Delay 77.0

HCM 6th LOS E

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |        |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
|---------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh          | 1.5    |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
| Movement                  | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR                                                                               |
| Lane Configurations       |        |  |  |        |  |  |
| Traffic Vol, veh/h        | 59     | 240                                                                               | 338                                                                               | 45     | 21                                                                                | 21                                                                                |
| Future Vol, veh/h         | 59     | 240                                                                               | 338                                                                               | 45     | 21                                                                                | 21                                                                                |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0                                                                                 |
| Sign Control              | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop                                                                              |
| RT Channelized            | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None                                                                              |
| Storage Length            | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -                                                                                 |
| Veh in Median Storage, #- | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -                                                                                 |
| Grade, %                  | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -                                                                                 |
| Peak Hour Factor          | 92     | 92                                                                                | 89                                                                                | 58     | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %         | 8      | 3                                                                                 | 4                                                                                 | 0      | 17                                                                                | 20                                                                                |
| Mvmt Flow                 | 64     | 261                                                                               | 380                                                                               | 78     | 23                                                                                | 23                                                                                |
| Major/Minor               | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |                                                                                   |
| Conflicting Flow All      | 458    | 0                                                                                 | -                                                                                 | 0      | 808                                                                               | 419                                                                               |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 419                                                                               | -                                                                                 |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 389                                                                               | -                                                                                 |
| Critical Hdwy             | 4.18   | -                                                                                 | -                                                                                 | -      | 6.57                                                                              | 6.4                                                                               |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -                                                                                 | -      | 5.57                                                                              | -                                                                                 |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -                                                                                 | -      | 5.57                                                                              | -                                                                                 |
| Follow-up Hdwy            | 2.272  | -                                                                                 | -                                                                                 | -      | 3.653                                                                             | 3.48                                                                              |
| Pot Cap-1 Maneuver        | 1072   | -                                                                                 | -                                                                                 | -      | 331                                                                               | 597                                                                               |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 633                                                                               | -                                                                                 |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 653                                                                               | -                                                                                 |
| Platoon blocked, %        | -      | -                                                                                 | -                                                                                 | -      | -                                                                                 | -                                                                                 |
| Mov Cap-1 Maneuver        | 1072   | -                                                                                 | -                                                                                 | -      | 308                                                                               | 597                                                                               |
| Mov Cap-2 Maneuver        | -      | -                                                                                 | -                                                                                 | -      | 308                                                                               | -                                                                                 |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 589                                                                               | -                                                                                 |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 653                                                                               | -                                                                                 |
| Approach                  | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |                                                                                   |
| HCM Control Delay, s      | 1.7    | 0                                                                                 |                                                                                   | 15     |                                                                                   |                                                                                   |
| HCM LOS                   |        |                                                                                   |                                                                                   | C      |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt     | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |                                                                                   |
| Capacity (veh/h)          | 1072   | -                                                                                 | -                                                                                 | -      | -                                                                                 | 406                                                                               |
| HCM Lane V/C Ratio        | 0.06   | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.112                                                                             |
| HCM Control Delay (s)     | 8.6    | 0                                                                                 | -                                                                                 | -      | -                                                                                 | 15                                                                                |
| HCM Lane LOS              | A      | A                                                                                 | -                                                                                 | -      | -                                                                                 | C                                                                                 |
| HCM 95th %tile Q(veh)     | 0.2    | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.4                                                                               |

# **PM Phase I Modified**



# HCM 6th TWSC

## 1: Hand Rd & Hathaway Rd

04/19/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 3.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 3    | 18   | 2    | 21   | 29   | 31   | 1    | 144  | 25   | 31   | 85   | 4    |
| Future Vol, veh/h         | 3    | 18   | 2    | 21   | 29   | 31   | 1    | 144  | 25   | 31   | 85   | 4    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                 | 3    | 20   | 2    | 23   | 32   | 34   | 1    | 157  | 27   | 34   | 92   | 4    |

| Major/Minor          | Minor2 |     | Minor1 |       | Major1 |     | Major2 |   |   |      |   |   |
|----------------------|--------|-----|--------|-------|--------|-----|--------|---|---|------|---|---|
| Conflicting Flow All | 368    | 348 | 94     | 346   | 337    | 171 | 96     | 0 | 0 | 184  | 0 | 0 |
| Stage 1              | 162    | 162 | -      | 173   | 173    | -   | -      | - | - | -    | - | - |
| Stage 2              | 206    | 186 | -      | 173   | 164    | -   | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.1    | 6.5 | 6.2    | 7.17  | 6.5    | 6.2 | 4.1    | - | - | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.1    | 5.5 | -      | 6.17  | 5.5    | -   | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.1    | 5.5 | -      | 6.17  | 5.5    | -   | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.5    | 4   | 3.3    | 3.563 | 4      | 3.3 | 2.2    | - | - | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 592    | 579 | 968    | 599   | 587    | 878 | 1510   | - | - | 1403 | - | - |
| Stage 1              | 845    | 768 | -      | 817   | 760    | -   | -      | - | - | -    | - | - |
| Stage 2              | 801    | 750 | -      | 817   | 766    | -   | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |     |        |       |        |     |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 534    | 563 | 968    | 570   | 571    | 878 | 1510   | - | - | 1403 | - | - |
| Mov Cap-2 Maneuver   | 534    | 563 | -      | 570   | 571    | -   | -      | - | - | -    | - | - |
| Stage 1              | 844    | 748 | -      | 816   | 759    | -   | -      | - | - | -    | - | - |
| Stage 2              | 738    | 749 | -      | 773   | 746    | -   | -      | - | - | -    | - | - |

| Approach             | EB  | WB   | NB | SB |
|----------------------|-----|------|----|----|
| HCM Control Delay, s | 1.5 | 11.3 | 0  | 2  |
| HCM LOS              | B   | B    |    |    |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn  | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1510  | -   | -   | 580   | 659   | 1403  | -   | -   |
| HCM Lane V/C Ratio    | 0.001 | -   | -   | 0.043 | 0.134 | 0.024 | -   | -   |
| HCM Control Delay (s) | 7.4   | 0   | -   | 11.5  | 11.3  | 7.6   | 0   | -   |
| HCM Lane LOS          | A     | A   | -   | B     | B     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0     | -   | -   | 0.1   | 0.5   | 0.1   | -   | -   |

| Intersection             |        |        |       |        |       |       |
|--------------------------|--------|--------|-------|--------|-------|-------|
| Int Delay, s/veh         | 6.6    |        |       |        |       |       |
| Movement                 | EBT    | EBR    | WBL   | WBT    | NBL   | NBR   |
| Lane Configurations      | ↰      |        | ↱     | ↰      | ↱     | ↱     |
| Traffic Vol, veh/h       | 108    | 22     | 171   | 61     | 27    | 218   |
| Future Vol, veh/h        | 108    | 22     | 171   | 61     | 27    | 218   |
| Conflicting Peds, #/hr   | 0      | 0      | 0     | 0      | 0     | 0     |
| Sign Control             | Free   | Free   | Free  | Free   | Stop  | Stop  |
| RT Channelized           | -      | None   | -     | None   | -     | None  |
| Storage Length           | -      | -      | 100   | -      | 450   | 0     |
| Veh in Median Storage, # | -      | -      | -     | 0      | 0     | -     |
| Grade, %                 | 0      | -      | -     | 0      | 0     | -     |
| Peak Hour Factor         | 92     | 92     | 92    | 92     | 92    | 92    |
| Heavy Vehicles, %        | 18     | 79     | 3     | 0      | 26    | 3     |
| Mvmt Flow                | 117    | 24     | 186   | 66     | 29    | 237   |
|                          |        |        |       |        |       |       |
| Major/Minor              | Major1 | Major2 |       | Minor1 |       |       |
| Conflicting Flow All     | 0      | 0      | 141   | 0      | 567   | 129   |
| Stage 1                  | -      | -      | -     | -      | 129   | -     |
| Stage 2                  | -      | -      | -     | -      | 438   | -     |
| Critical Hdwy            | -      | -      | 4.13  | -      | 6.66  | 6.23  |
| Critical Hdwy Stg 1      | -      | -      | -     | -      | 5.66  | -     |
| Critical Hdwy Stg 2      | -      | -      | -     | -      | 5.66  | -     |
| Follow-up Hdwy           | -      | -      | 2.227 | -      | 3.734 | 3.327 |
| Pot Cap-1 Maneuver       | -      | -      | 1436  | -      | 447   | 918   |
| Stage 1                  | -      | -      | -     | -      | 841   | -     |
| Stage 2                  | -      | -      | -     | -      | 603   | -     |
| Platoon blocked, %       | -      | -      |       | -      |       |       |
| Mov Cap-1 Maneuver       | -      | -      | 1436  | -      | 389   | 918   |
| Mov Cap-2 Maneuver       | -      | -      | -     | -      | 389   | -     |
| Stage 1                  | -      | -      | -     | -      | 732   | -     |
| Stage 2                  | -      | -      | -     | -      | 603   | -     |
|                          |        |        |       |        |       |       |
|                          |        |        |       |        |       |       |
| Approach                 | EB     | WB     |       | NB     |       |       |
| HCM Control Delay, s     | 0      | 5.8    |       | 10.8   |       |       |
| HCM LOS                  | B      |        |       |        |       |       |
|                          |        |        |       |        |       |       |
|                          |        |        |       |        |       |       |
| Minor Lane/Major Mvmt    | NBLn   | NBLn2  | EBT   | EBR    | WBL   | WBT   |
| Capacity (veh/h)         | 389    | 918    | -     | -      | 1436  | -     |
| HCM Lane V/C Ratio       | 0.075  | 0.258  | -     | -      | 0.129 | -     |
| HCM Control Delay (s)    | 15     | 10.3   | -     | -      | 7.9   | -     |
| HCM Lane LOS             | C      | B      | -     | -      | A     | -     |
| HCM 95th %tile Q(veh)    | 0.2    | 1      | -     | -      | 0.4   | -     |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

04/19/2019

|                              |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                                | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |   |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 316                                                                                | 114                                                                               | 30                                                                                | 83                                                                                | 82                                                                                | 173                                                                               | 48                                                                                | 1457                                                                                | 116                                                                                 | 114                                                                                 | 1204                                                                                | 142                                                                                 |
| Future Volume (veh/h)        | 316                                                                                | 114                                                                               | 30                                                                                | 83                                                                                | 82                                                                                | 173                                                                               | 48                                                                                | 1457                                                                                | 116                                                                                 | 114                                                                                 | 1204                                                                                | 142                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                               | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                 |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1870                                                                              | 1870                                                                                | 1870                                                                                | 1870                                                                                | 1870                                                                                | 1885                                                                                |
| Adj Flow Rate, veh/h         | 343                                                                                | 124                                                                               | 33                                                                                | 90                                                                                | 89                                                                                | 188                                                                               | 52                                                                                | 1584                                                                                | 126                                                                                 | 124                                                                                 | 1309                                                                                | 154                                                                                 |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2                                                                                 | 2                                                                                   | 2                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   |
| Cap, veh/h                   | 349                                                                                | 524                                                                               | 444                                                                               | 361                                                                               | 524                                                                               | 444                                                                               | 231                                                                               | 1657                                                                                | 739                                                                                 | 204                                                                                 | 1711                                                                                | 769                                                                                 |
| Arrive On Green              | 0.28                                                                               | 0.28                                                                              | 0.28                                                                              | 0.28                                                                              | 0.28                                                                              | 0.28                                                                              | 0.05                                                                              | 0.47                                                                                | 0.47                                                                                | 0.06                                                                                | 0.48                                                                                | 0.48                                                                                |
| Sat Flow, veh/h              | 1120                                                                               | 1900                                                                              | 1610                                                                              | 1249                                                                              | 1900                                                                              | 1610                                                                              | 1781                                                                              | 3554                                                                                | 1585                                                                                | 1781                                                                                | 3554                                                                                | 1598                                                                                |
| Grp Volume(v), veh/h         | 343                                                                                | 124                                                                               | 33                                                                                | 90                                                                                | 89                                                                                | 188                                                                               | 52                                                                                | 1584                                                                                | 126                                                                                 | 124                                                                                 | 1309                                                                                | 154                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1120                                                                               | 1900                                                                              | 1610                                                                              | 1249                                                                              | 1900                                                                              | 1610                                                                              | 1781                                                                              | 1777                                                                                | 1585                                                                                | 1781                                                                                | 1777                                                                                | 1598                                                                                |
| Q Serve(g_s), s              | 21.6                                                                               | 4.6                                                                               | 1.4                                                                               | 5.4                                                                               | 3.2                                                                               | 8.6                                                                               | 1.3                                                                               | 38.6                                                                                | 4.1                                                                                 | 3.2                                                                                 | 27.2                                                                                | 5.0                                                                                 |
| Cycle Q Clear(g_c), s        | 24.8                                                                               | 4.6                                                                               | 1.4                                                                               | 10.0                                                                              | 3.2                                                                               | 8.6                                                                               | 1.3                                                                               | 38.6                                                                                | 4.1                                                                                 | 3.2                                                                                 | 27.2                                                                                | 5.0                                                                                 |
| Prop In Lane                 | 1.00                                                                               |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 349                                                                                | 524                                                                               | 444                                                                               | 361                                                                               | 524                                                                               | 444                                                                               | 231                                                                               | 1657                                                                                | 739                                                                                 | 204                                                                                 | 1711                                                                                | 769                                                                                 |
| V/C Ratio(X)                 | 0.98                                                                               | 0.24                                                                              | 0.07                                                                              | 0.25                                                                              | 0.17                                                                              | 0.42                                                                              | 0.22                                                                              | 0.96                                                                                | 0.17                                                                                | 0.61                                                                                | 0.77                                                                                | 0.20                                                                                |
| Avail Cap(c_a), veh/h        | 349                                                                                | 524                                                                               | 444                                                                               | 361                                                                               | 524                                                                               | 444                                                                               | 264                                                                               | 1657                                                                                | 739                                                                                 | 209                                                                                 | 1711                                                                                | 769                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                               | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.56                                                                              | 0.56                                                                                | 0.56                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 36.5                                                                               | 25.3                                                                              | 24.1                                                                              | 29.1                                                                              | 24.8                                                                              | 26.7                                                                              | 15.0                                                                              | 23.1                                                                                | 13.9                                                                                | 20.3                                                                                | 19.2                                                                                | 13.4                                                                                |
| Incr Delay (d2), s/veh       | 43.7                                                                               | 0.2                                                                               | 0.1                                                                               | 0.4                                                                               | 0.2                                                                               | 0.6                                                                               | 0.3                                                                               | 9.0                                                                                 | 0.3                                                                                 | 4.8                                                                                 | 3.3                                                                                 | 0.6                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 11.6                                                                               | 2.0                                                                               | 0.5                                                                               | 1.6                                                                               | 1.4                                                                               | 3.2                                                                               | 0.5                                                                               | 17.0                                                                                | 1.5                                                                                 | 1.4                                                                                 | 11.2                                                                                | 1.8                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 80.2                                                                               | 25.5                                                                              | 24.2                                                                              | 29.5                                                                              | 24.9                                                                              | 27.4                                                                              | 15.3                                                                              | 32.2                                                                                | 14.2                                                                                | 25.1                                                                                | 22.5                                                                                | 14.0                                                                                |
| LnGrp LOS                    | F                                                                                  | C                                                                                 | C                                                                                 | C                                                                                 | C                                                                                 | C                                                                                 | B                                                                                 | C                                                                                   | B                                                                                   | C                                                                                   | C                                                                                   | B                                                                                   |
| Approach Vol, veh/h          | 500                                                                                |                                                                                   |                                                                                   | 367                                                                               |                                                                                   |                                                                                   | 1762                                                                              |                                                                                     |                                                                                     | 1587                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 62.9                                                                               |                                                                                   |                                                                                   | 27.3                                                                              |                                                                                   |                                                                                   | 30.4                                                                              |                                                                                     |                                                                                     | 21.9                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | E                                                                                  |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                  | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 9.7                                                                                | 49.3                                                                              |                                                                                   | 31.0                                                                              | 11.0                                                                              | 48.0                                                                              |                                                                                   | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 5.3                                                                              | 6.0                                                                               |                                                                                   | * 6.2                                                                             | * 5.3                                                                             | 6.0                                                                               |                                                                                   | * 6.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 6                                                                                | 41.7                                                                              |                                                                                   | * 25                                                                              | * 6                                                                               | 41.7                                                                              |                                                                                   | * 25                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.3                                                                                | 29.2                                                                              |                                                                                   | 26.8                                                                              | 5.2                                                                               | 40.6                                                                              |                                                                                   | 12.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                                | 7.8                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.9                                                                               |                                                                                   | 1.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 30.8

HCM 6th LOS C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|---------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh          | 1.5    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                  | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations       |        |  |  |        |  |       |
| Traffic Vol, veh/h        | 59     | 240                                                                               | 338                                                                               | 45     | 21                                                                                | 21    |
| Future Vol, veh/h         | 59     | 240                                                                               | 338                                                                               | 45     | 21                                                                                | 21    |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0     |
| Sign Control              | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop  |
| RT Channelized            | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None  |
| Storage Length            | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -     |
| Veh in Median Storage, #- | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Grade, %                  | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Peak Hour Factor          | 92     | 92                                                                                | 89                                                                                | 58     | 92                                                                                | 92    |
| Heavy Vehicles, %         | 8      | 3                                                                                 | 4                                                                                 | 0      | 17                                                                                | 20    |
| Mvmt Flow                 | 64     | 261                                                                               | 380                                                                               | 78     | 23                                                                                | 23    |
| Major/Minor               | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All      | 458    | 0                                                                                 | -                                                                                 | 0      | 808                                                                               | 419   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 419                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 389                                                                               | -     |
| Critical Hdwy             | 4.18   | -                                                                                 | -                                                                                 | -      | 6.57                                                                              | 6.4   |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -                                                                                 | -      | 5.57                                                                              | -     |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -                                                                                 | -      | 5.57                                                                              | -     |
| Follow-up Hdwy            | 2.272  | -                                                                                 | -                                                                                 | -      | 3.653                                                                             | 3.48  |
| Pot Cap-1 Maneuver        | 1072   | -                                                                                 | -                                                                                 | -      | 331                                                                               | 597   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 633                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 653                                                                               | -     |
| Platoon blocked, %        | -      | -                                                                                 | -                                                                                 | -      | -                                                                                 | -     |
| Mov Cap-1 Maneuver        | 1072   | -                                                                                 | -                                                                                 | -      | 308                                                                               | 597   |
| Mov Cap-2 Maneuver        | -      | -                                                                                 | -                                                                                 | -      | 308                                                                               | -     |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 589                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 653                                                                               | -     |
| Approach                  | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s      | 1.7    | 0                                                                                 |                                                                                   | 15     |                                                                                   |       |
| HCM LOS                   |        |                                                                                   |                                                                                   | C      |                                                                                   |       |
| Minor Lane/Major Mvmt     | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)          | 1072   | -                                                                                 | -                                                                                 | -      | -                                                                                 | 406   |
| HCM Lane V/C Ratio        | 0.06   | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.112 |
| HCM Control Delay (s)     | 8.6    | 0                                                                                 | -                                                                                 | -      | -                                                                                 | 15    |
| HCM Lane LOS              | A      | A                                                                                 | -                                                                                 | -      | -                                                                                 | C     |
| HCM 95th %tile Q(veh)     | 0.2    | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.4   |

## **AM Phase II**



# HCM 6th TWSC

## 1: Hand Rd & Hathaway Rd

08/22/2019

| Intersection              |        |       |      |        |       |       |        |      |      |        |      |      |  |
|---------------------------|--------|-------|------|--------|-------|-------|--------|------|------|--------|------|------|--|
| Int Delay, s/veh          | 4.6    |       |      |        |       |       |        |      |      |        |      |      |  |
| Movement                  | EBL    | EBT   | EBR  | WBL    | WBT   | WBR   | NBL    | NBT  | NBR  | SBL    | SBT  | SBR  |  |
| Lane Configurations       |        | ↕     |      |        | ↕     |       |        | ↕    |      |        | ↕    |      |  |
| Traffic Vol, veh/h        | 7      | 35    | 2    | 72     | 19    | 32    | 0      | 46   | 120  | 55     | 236  | 8    |  |
| Future Vol, veh/h         | 7      | 35    | 2    | 72     | 19    | 32    | 0      | 46   | 120  | 55     | 236  | 8    |  |
| Conflicting Peds, #/hr    | 0      | 0     | 0    | 0      | 0     | 0     | 0      | 0    | 0    | 0      | 0    | 0    |  |
| Sign Control              | Stop   | Stop  | Stop | Stop   | Stop  | Stop  | Free   | Free | Free | Free   | Free | Free |  |
| RT Channelized            | -      | -     | None | -      | -     | None  | -      | -    | None | -      | -    | None |  |
| Storage Length            | -      | -     | -    | -      | -     | -     | -      | -    | -    | -      | -    | -    |  |
| Veh in Median Storage, #- | 0      | -     | -    | 0      | -     | -     | 0      | -    | -    | 0      | -    | -    |  |
| Grade, %                  | -      | 0     | -    | -      | 0     | -     | -      | 0    | -    | -      | 0    | -    |  |
| Peak Hour Factor          | 92     | 92    | 92   | 92     | 92    | 92    | 92     | 92   | 92   | 92     | 92   | 92   |  |
| Heavy Vehicles, %         | 0      | 5     | 0    | 6      | 0     | 0     | 0      | 18   | 5    | 0      | 3    | 0    |  |
| Mvmt Flow                 | 8      | 38    | 2    | 78     | 21    | 35    | 0      | 50   | 130  | 60     | 257  | 9    |  |
| Major/Minor               | Minor2 |       |      | Minor1 |       |       | Major1 |      |      | Major2 |      |      |  |
| Conflicting Flow All      | 525    | 562   | 262  | 517    | 501   | 115   | 266    | 0    | 0    | 180    | 0    | 0    |  |
| Stage 1                   | 382    | 382   | -    | 115    | 115   | -     | -      | -    | -    | -      | -    | -    |  |
| Stage 2                   | 143    | 180   | -    | 402    | 386   | -     | -      | -    | -    | -      | -    | -    |  |
| Critical Hdwy             | 7.1    | 6.55  | 6.2  | 7.16   | 6.5   | 6.2   | 4.1    | -    | -    | 4.1    | -    | -    |  |
| Critical Hdwy Stg 1       | 6.1    | 5.55  | -    | 6.16   | 5.5   | -     | -      | -    | -    | -      | -    | -    |  |
| Critical Hdwy Stg 2       | 6.1    | 5.55  | -    | 6.16   | 5.5   | -     | -      | -    | -    | -      | -    | -    |  |
| Follow-up Hdwy            | 3.5    | 4.045 | 3.3  | 3.554  | 4     | 3.3   | 2.2    | -    | -    | 2.2    | -    | -    |  |
| Pot Cap-1 Maneuver        | 466    | 432   | 782  | 463    | 475   | 943   | 1310   | -    | -    | 1408   | -    | -    |  |
| Stage 1                   | 645    | 607   | -    | 880    | 804   | -     | -      | -    | -    | -      | -    | -    |  |
| Stage 2                   | 865    | 745   | -    | 617    | 614   | -     | -      | -    | -    | -      | -    | -    |  |
| Platoon blocked, %        |        |       |      |        |       |       |        | -    | -    | -      | -    | -    |  |
| Mov Cap-1 Maneuver        | 417    | 410   | 782  | 413    | 451   | 943   | 1310   | -    | -    | 1408   | -    | -    |  |
| Mov Cap-2 Maneuver        | 417    | 410   | -    | 413    | 451   | -     | -      | -    | -    | -      | -    | -    |  |
| Stage 1                   | 645    | 577   | -    | 880    | 804   | -     | -      | -    | -    | -      | -    | -    |  |
| Stage 2                   | 812    | 745   | -    | 546    | 583   | -     | -      | -    | -    | -      | -    | -    |  |
| Approach                  | EB     |       |      | WB     |       |       | NB     |      |      | SB     |      |      |  |
| HCM Control Delay, s      | 4.7    |       |      | 15.1   |       |       | 0      |      |      | 1.4    |      |      |  |
| HCM LOS                   | B      |       |      | C      |       |       |        |      |      |        |      |      |  |
| Minor Lane/Major Mvmt     | NBL    | NBT   | NBR  | EBLn   | WBLn  | 1     | SBL    | SBT  | SBR  |        |      |      |  |
| Capacity (veh/h)          | 1310   | -     | -    | 420    | 491   | 1408  | -      | -    | -    |        |      |      |  |
| HCM Lane V/C Ratio        | -      | -     | -    | 0.114  | 0.272 | 0.042 | -      | -    | -    |        |      |      |  |
| HCM Control Delay (s)     | 0      | -     | -    | 14.7   | 15.1  | 7.7   | 0      | -    | -    |        |      |      |  |
| HCM Lane LOS              | A      | -     | -    | B      | C     | A     | A      | -    | -    |        |      |      |  |
| HCM 95th %tile Q(veh)     | 0      | -     | -    | 0.4    | 1.1   | 0.1   | -      | -    | -    |        |      |      |  |

| Intersection              |        |        |      |        |       |      |
|---------------------------|--------|--------|------|--------|-------|------|
| Int Delay, s/veh          | 9      |        |      |        |       |      |
| Movement                  | EBT    | EBR    | WBL  | WBT    | NBL   | NBR  |
| Lane Configurations       | ↰      |        | ↱    | ↰      | ↱     | ↱    |
| Traffic Vol, veh/h        | 217    | 27     | 592  | 107    | 18    | 239  |
| Future Vol, veh/h         | 217    | 27     | 592  | 107    | 18    | 239  |
| Conflicting Peds, #/hr    | 0      | 0      | 0    | 0      | 0     | 0    |
| Sign Control              | Free   | Free   | Free | Free   | Stop  | Stop |
| RT Channelized            | -      | None   | -    | None   | -     | None |
| Storage Length            | -      | -      | 100  | -      | 450   | 0    |
| Veh in Median Storage, #0 | -      | -      | -    | 0      | 0     | -    |
| Grade, %                  | 0      | -      | -    | 0      | 0     | -    |
| Peak Hour Factor          | 92     | 92     | 92   | 92     | 92    | 92   |
| Heavy Vehicles, %         | 5      | 0      | 0    | 4      | 0     | 0    |
| Mvmt Flow                 | 236    | 29     | 643  | 116    | 20    | 260  |
|                           |        |        |      |        |       |      |
| Major/Minor               | Major1 | Major2 |      | Minor1 |       |      |
| Conflicting Flow All      | 0      | 0      | 265  | 0      | 1653  | 251  |
| Stage 1                   | -      | -      | -    | -      | 251   | -    |
| Stage 2                   | -      | -      | -    | -      | 1402  | -    |
| Critical Hdwy             | -      | -      | 4.1  | -      | 6.4   | 6.2  |
| Critical Hdwy Stg 1       | -      | -      | -    | -      | 5.4   | -    |
| Critical Hdwy Stg 2       | -      | -      | -    | -      | 5.4   | -    |
| Follow-up Hdwy            | -      | -      | 2.2  | -      | 3.5   | 3.3  |
| Pot Cap-1 Maneuver        | -      | -      | 1311 | -      | 109   | 793  |
| Stage 1                   | -      | -      | -    | -      | 795   | -    |
| Stage 2                   | -      | -      | -    | -      | 230   | -    |
| Platoon blocked, %        | -      | -      |      | -      |       |      |
| Mov Cap-1 Maneuver        | -      | -      | 1311 | -      | 56    | 793  |
| Mov Cap-2 Maneuver        | -      | -      | -    | -      | 56    | -    |
| Stage 1                   | -      | -      | -    | -      | 405   | -    |
| Stage 2                   | -      | -      | -    | -      | 230   | -    |
|                           |        |        |      |        |       |      |
|                           |        |        |      |        |       |      |
| Approach                  | EB     | WB     |      | NB     |       |      |
| HCM Control Delay, s      | 0      | 8.8    |      | 17.9   |       |      |
| HCM LOS                   | C      |        |      |        |       |      |
|                           |        |        |      |        |       |      |
|                           |        |        |      |        |       |      |
| Minor Lane/Major Mvmt     | NBLn   | NBLn2  | EBT  | EBR    | WBL   | WBT  |
| Capacity (veh/h)          | 56     | 793    | -    | -      | 1311  | -    |
| HCM Lane V/C Ratio        | 0.349  | 0.328  | -    | -      | 0.491 | -    |
| HCM Control Delay (s)     | 100.5  | 11.7   | -    | -      | 10.4  | -    |
| HCM Lane LOS              | F      | B      | -    | -      | B     | -    |
| HCM 95th %tile Q(veh)     | 1.3    | 1.4    | -    | -      | 2.8   | -    |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

08/22/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 378                                                                               | 254                                                                               | 164                                                                               | 406                                                                               | 405                                                                               | 205                                                                               | 133                                                                                 | 1126                                                                                | 47                                                                                  | 95                                                                                  | 2317                                                                                | 697                                                                                 |
| Future Volume (veh/h)        | 378                                                                               | 254                                                                               | 164                                                                               | 406                                                                               | 405                                                                               | 205                                                                               | 133                                                                                 | 1126                                                                                | 47                                                                                  | 95                                                                                  | 2317                                                                                | 697                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1737                                                                              | 1544                                                                              | 1826                                                                              | 1900                                                                              | 1796                                                                              | 1722                                                                              | 1707                                                                                | 1796                                                                                | 1737                                                                                | 1900                                                                                | 1856                                                                                | 1841                                                                                |
| Adj Flow Rate, veh/h         | 411                                                                               | 276                                                                               | 178                                                                               | 441                                                                               | 440                                                                               | 223                                                                               | 145                                                                                 | 1224                                                                                | 51                                                                                  | 103                                                                                 | 2518                                                                                | 758                                                                                 |
| 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                                                                                |
| Percent Heavy Veh, %         | 11                                                                                | 24                                                                                | 5                                                                                 | 0                                                                                 | 7                                                                                 | 12                                                                                | 13                                                                                  | 7                                                                                   | 11                                                                                  | 0                                                                                   | 3                                                                                   | 4                                                                                   |
| Cap, veh/h                   | 274                                                                               | 362                                                                               | 363                                                                               | 247                                                                               | 309                                                                               | 310                                                                               | 121                                                                                 | 1721                                                                                | 742                                                                                 | 221                                                                                 | 1763                                                                                | 993                                                                                 |
| Arrive On Green              | 0.14                                                                              | 0.23                                                                              | 0.23                                                                              | 0.07                                                                              | 0.17                                                                              | 0.17                                                                              | 0.04                                                                                | 0.50                                                                                | 0.50                                                                                | 0.04                                                                                | 0.50                                                                                | 0.50                                                                                |
| Sat Flow, veh/h              | 1654                                                                              | 1544                                                                              | 1547                                                                              | 1810                                                                              | 1796                                                                              | 1459                                                                              | 1626                                                                                | 3413                                                                                | 1472                                                                                | 1810                                                                                | 3526                                                                                | 1560                                                                                |
| Grp Volume(v), veh/h         | 411                                                                               | 276                                                                               | 178                                                                               | 441                                                                               | 440                                                                               | 223                                                                               | 145                                                                                 | 1224                                                                                | 51                                                                                  | 103                                                                                 | 2518                                                                                | 758                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1654                                                                              | 1544                                                                              | 1547                                                                              | 1810                                                                              | 1796                                                                              | 1459                                                                              | 1626                                                                                | 1706                                                                                | 1472                                                                                | 1810                                                                                | 1763                                                                                | 1560                                                                                |
| Q Serve(g_s), s              | 20.5                                                                              | 25.0                                                                              | 14.9                                                                              | 11.1                                                                              | 25.8                                                                              | 21.3                                                                              | 6.7                                                                                 | 41.6                                                                                | 2.7                                                                                 | 4.1                                                                                 | 75.0                                                                                | 51.5                                                                                |
| Cycle Q Clear(g_c), s        | 20.5                                                                              | 25.0                                                                              | 14.9                                                                              | 11.1                                                                              | 25.8                                                                              | 21.3                                                                              | 6.7                                                                                 | 41.6                                                                                | 2.7                                                                                 | 4.1                                                                                 | 75.0                                                                                | 51.5                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 274                                                                               | 362                                                                               | 363                                                                               | 247                                                                               | 309                                                                               | 310                                                                               | 121                                                                                 | 1721                                                                                | 742                                                                                 | 221                                                                                 | 1763                                                                                | 993                                                                                 |
| V/C Ratio(X)                 | 1.50                                                                              | 0.76                                                                              | 0.49                                                                              | 1.79                                                                              | 1.42                                                                              | 0.72                                                                              | 1.20                                                                                | 0.71                                                                                | 0.07                                                                                | 0.47                                                                                | 1.43                                                                                | 0.76                                                                                |
| Avail Cap(c_a), veh/h        | 274                                                                               | 362                                                                               | 363                                                                               | 247                                                                               | 309                                                                               | 310                                                                               | 121                                                                                 | 1721                                                                                | 742                                                                                 | 261                                                                                 | 1763                                                                                | 993                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 45.3                                                                              | 53.5                                                                              | 49.6                                                                              | 51.5                                                                              | 62.1                                                                              | 54.9                                                                              | 43.1                                                                                | 28.7                                                                                | 19.1                                                                                | 24.0                                                                                | 37.5                                                                                | 19.3                                                                                |
| Incr Delay (d2), s/veh       | 243.0                                                                             | 10.7                                                                              | 2.2                                                                               | 370.1                                                                             | 208.8                                                                             | 9.6                                                                               | 146.1                                                                               | 1.8                                                                                 | 0.1                                                                                 | 0.8                                                                                 | 196.1                                                                               | 4.2                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 26.8                                                                              | 10.6                                                                              | 5.9                                                                               | 29.2                                                                              | 29.4                                                                              | 8.5                                                                               | 6.9                                                                                 | 16.3                                                                                | 0.9                                                                                 | 1.7                                                                                 | 77.7                                                                                | 18.2                                                                                |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 288.3                                                                             | 64.2                                                                              | 51.8                                                                              | 421.7                                                                             | 270.9                                                                             | 64.5                                                                              | 189.3                                                                               | 30.5                                                                                | 19.2                                                                                | 24.8                                                                                | 233.6                                                                               | 23.4                                                                                |
| LnGrp LOS                    | F                                                                                 | E                                                                                 | D                                                                                 | F                                                                                 | F                                                                                 | E                                                                                 | F                                                                                   | C                                                                                   | B                                                                                   | C                                                                                   | F                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 865                                                                               |                                                                                   |                                                                                   | 1104                                                                              |                                                                                   |                                                                                   | 1420                                                                                |                                                                                     |                                                                                     | 3379                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 168.1                                                                             |                                                                                   |                                                                                   | 289.4                                                                             |                                                                                   |                                                                                   | 46.3                                                                                |                                                                                     |                                                                                     | 180.1                                                                               |                                                                                     |                                                                                     |
| Approach LOS                 | F                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | D                                                                                   |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.4                                                                              | 81.6                                                                              | 15.6                                                                              | 41.4                                                                              | 12.0                                                                              | 81.0                                                                              | 25.0                                                                                | 32.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 5.3                                                                             | 6.0                                                                               | 4.5                                                                               | * 6.2                                                                             | * 5.3                                                                             | 6.0                                                                               | 4.5                                                                                 | * 6.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 9.4                                                                               | 72.3                                                                              | 11.1                                                                              | * 35                                                                              | * 6.7                                                                             | 75.0                                                                              | 20.5                                                                                | * 26                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 6.1                                                                               | 43.6                                                                              | 13.1                                                                              | 27.0                                                                              | 8.7                                                                               | 77.0                                                                              | 22.5                                                                                | 27.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 16.9                                                                              | 0.0                                                                               | 2.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 168.3

HCM 6th LOS F

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|---------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh          | 5.2    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                  | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations       |        |  |  |        |  |       |
| Traffic Vol, veh/h        | 77     | 410                                                                               | 432                                                                               | 43     | 71                                                                                | 101   |
| Future Vol, veh/h         | 77     | 410                                                                               | 432                                                                               | 43     | 71                                                                                | 101   |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0     |
| Sign Control              | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop  |
| RT Channelized            | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None  |
| Storage Length            | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -     |
| Veh in Median Storage, #- | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Grade, %                  | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Peak Hour Factor          | 92     | 92                                                                                | 92                                                                                | 92     | 92                                                                                | 92    |
| Heavy Vehicles, %         | 13     | 24                                                                                | 2                                                                                 | 0      | 0                                                                                 | 23    |
| Mvmt Flow                 | 84     | 446                                                                               | 470                                                                               | 47     | 77                                                                                | 110   |
| Major/Minor               | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All      | 517    | 0                                                                                 | -                                                                                 | 0      | 1108                                                                              | 494   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 494                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 614                                                                               | -     |
| Critical Hdwy             | 4.23   | -                                                                                 | -                                                                                 | -      | 6.4                                                                               | 6.43  |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -     |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -     |
| Follow-up Hdwy            | 2.317  | -                                                                                 | -                                                                                 | -      | 3.5                                                                               | 3.507 |
| Pot Cap-1 Maneuver        | 995    | -                                                                                 | -                                                                                 | -      | 234                                                                               | 535   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 617                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 544                                                                               | -     |
| Platoon blocked, %        | -      | -                                                                                 | -                                                                                 | -      | -                                                                                 | -     |
| Mov Cap-1 Maneuver        | 995    | -                                                                                 | -                                                                                 | -      | 208                                                                               | 535   |
| Mov Cap-2 Maneuver        | -      | -                                                                                 | -                                                                                 | -      | 208                                                                               | -     |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 548                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 544                                                                               | -     |
| Approach                  | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s 1.4  |        | 0                                                                                 |                                                                                   | 30.2   |                                                                                   |       |
| HCM LOS                   |        |                                                                                   |                                                                                   | D      |                                                                                   |       |
| Minor Lane/Major Mvmt     | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)          | 995    | -                                                                                 | -                                                                                 | -      | 324                                                                               |       |
| HCM Lane V/C Ratio        | 0.084  | -                                                                                 | -                                                                                 | -      | 0.577                                                                             |       |
| HCM Control Delay (s)     | 9      | 0                                                                                 | -                                                                                 | -      | 30.2                                                                              |       |
| HCM Lane LOS              | A      | A                                                                                 | -                                                                                 | -      | D                                                                                 |       |
| HCM 95th %tile Q(veh)     | 0.3    | -                                                                                 | -                                                                                 | -      | 3.4                                                                               |       |

# **AM Phase II Modified**



# HCM 6th TWSC

## 1: Hand Rd & Hathaway Rd

08/22/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 4.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 7    | 35   | 2    | 72   | 19   | 32   | 0    | 46   | 120  | 55   | 236  | 8    |
| Future Vol, veh/h         | 7    | 35   | 2    | 72   | 19   | 32   | 0    | 46   | 120  | 55   | 236  | 8    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0    | 5    | 0    | 6    | 0    | 0    | 0    | 18   | 5    | 0    | 3    | 0    |
| Mvmt Flow                 | 8    | 38   | 2    | 78   | 21   | 35   | 0    | 50   | 130  | 60   | 257  | 9    |

| Major/Minor          | Minor2 |       | Minor1 |       | Major1 |     | Major2 |   |   |      |   |   |
|----------------------|--------|-------|--------|-------|--------|-----|--------|---|---|------|---|---|
| Conflicting Flow All | 525    | 562   | 262    | 517   | 501    | 115 | 266    | 0 | 0 | 180  | 0 | 0 |
| Stage 1              | 382    | 382   | -      | 115   | 115    | -   | -      | - | - | -    | - | - |
| Stage 2              | 143    | 180   | -      | 402   | 386    | -   | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.1    | 6.55  | 6.2    | 7.16  | 6.5    | 6.2 | 4.1    | - | - | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.1    | 5.55  | -      | 6.16  | 5.5    | -   | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.1    | 5.55  | -      | 6.16  | 5.5    | -   | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.5    | 4.045 | 3.3    | 3.554 | 4      | 3.3 | 2.2    | - | - | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 466    | 432   | 782    | 463   | 475    | 943 | 1310   | - | - | 1408 | - | - |
| Stage 1              | 645    | 607   | -      | 880   | 804    | -   | -      | - | - | -    | - | - |
| Stage 2              | 865    | 745   | -      | 617   | 614    | -   | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |       |        |       |        |     |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 417    | 410   | 782    | 413   | 451    | 943 | 1310   | - | - | 1408 | - | - |
| Mov Cap-2 Maneuver   | 417    | 410   | -      | 413   | 451    | -   | -      | - | - | -    | - | - |
| Stage 1              | 645    | 577   | -      | 880   | 804    | -   | -      | - | - | -    | - | - |
| Stage 2              | 812    | 745   | -      | 546   | 583    | -   | -      | - | - | -    | - | - |

| Approach             | EB  | WB   | NB | SB  |
|----------------------|-----|------|----|-----|
| HCM Control Delay, s | 4.7 | 15.1 | 0  | 1.4 |
| HCM LOS              | B   | C    |    |     |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn  | WBLn  | SBL   | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1310 | -   | -   | 420   | 491   | 1408  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.114 | 0.272 | 0.042 | -   | -   |
| HCM Control Delay (s) | 0    | -   | -   | 14.7  | 15.1  | 7.7   | 0   | -   |
| HCM Lane LOS          | A    | -   | -   | B     | C     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.4   | 1.1   | 0.1   | -   | -   |

# HCM 6th TWSC

## 2: Bethel Rd & Hathaway Rd

08/22/2019

| Intersection             |        |        |      |        |       |      |
|--------------------------|--------|--------|------|--------|-------|------|
| Int Delay, s/veh         | 9      |        |      |        |       |      |
| Movement                 | EBT    | EBR    | WBL  | WBT    | NBL   | NBR  |
| Lane Configurations      | ↰      |        | ↰    | ↰      | ↰     | ↰    |
| Traffic Vol, veh/h       | 217    | 27     | 592  | 107    | 18    | 239  |
| Future Vol, veh/h        | 217    | 27     | 592  | 107    | 18    | 239  |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0     | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop  | Stop |
| RT Channelized           | -      | None   | -    | None   | -     | None |
| Storage Length           | -      | -      | 100  | -      | 450   | 0    |
| Veh in Median Storage, # | -      | -      | -    | 0      | 0     | -    |
| Grade, %                 | 0      | -      | -    | 0      | 0     | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92    | 92   |
| Heavy Vehicles, %        | 5      | 0      | 0    | 4      | 0     | 0    |
| Mvmt Flow                | 236    | 29     | 643  | 116    | 20    | 260  |
|                          |        |        |      |        |       |      |
| Major/Minor              | Major1 | Major2 |      | Minor1 |       |      |
| Conflicting Flow All     | 0      | 0      | 265  | 0      | 1653  | 251  |
| Stage 1                  | -      | -      | -    | -      | 251   | -    |
| Stage 2                  | -      | -      | -    | -      | 1402  | -    |
| Critical Hdwy            | -      | -      | 4.1  | -      | 6.4   | 6.2  |
| Critical Hdwy Stg 1      | -      | -      | -    | -      | 5.4   | -    |
| Critical Hdwy Stg 2      | -      | -      | -    | -      | 5.4   | -    |
| Follow-up Hdwy           | -      | -      | 2.2  | -      | 3.5   | 3.3  |
| Pot Cap-1 Maneuver       | -      | -      | 1311 | -      | 109   | 793  |
| Stage 1                  | -      | -      | -    | -      | 795   | -    |
| Stage 2                  | -      | -      | -    | -      | 230   | -    |
| Platoon blocked, %       | -      | -      |      | -      |       |      |
| Mov Cap-1 Maneuver       | -      | -      | 1311 | -      | 56    | 793  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | 56    | -    |
| Stage 1                  | -      | -      | -    | -      | 405   | -    |
| Stage 2                  | -      | -      | -    | -      | 230   | -    |
|                          |        |        |      |        |       |      |
|                          |        |        |      |        |       |      |
| Approach                 | EB     | WB     |      | NB     |       |      |
| HCM Control Delay, s     | 0      | 8.8    |      | 17.9   |       |      |
| HCM LOS                  | C      |        |      |        |       |      |
|                          |        |        |      |        |       |      |
|                          |        |        |      |        |       |      |
| Minor Lane/Major Mvmt    | NBLn   | NBLn2  | EBT  | EBR    | WBL   | WBT  |
| Capacity (veh/h)         | 56     | 793    | -    | -      | 1311  | -    |
| HCM Lane V/C Ratio       | 0.349  | 0.328  | -    | -      | 0.491 | -    |
| HCM Control Delay (s)    | 100.5  | 11.7   | -    | -      | 10.4  | -    |
| HCM Lane LOS             | F      | B      | -    | -      | B     | -    |
| HCM 95th %tile Q(veh)    | 1.3    | 1.4    | -    | -      | 2.8   | -    |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

08/22/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 378                                                                               | 254                                                                               | 164                                                                               | 187                                                                               | 406                                                                               | 205                                                                               | 133                                                                                 | 1126                                                                                | 47                                                                                  | 95                                                                                  | 2317                                                                                | 697                                                                                 |
| Future Volume (veh/h)        | 378                                                                               | 254                                                                               | 164                                                                               | 187                                                                               | 406                                                                               | 205                                                                               | 133                                                                                 | 1126                                                                                | 47                                                                                  | 95                                                                                  | 2317                                                                                | 697                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1737                                                                              | 1544                                                                              | 1826                                                                              | 1900                                                                              | 1796                                                                              | 1722                                                                              | 1707                                                                                | 1796                                                                                | 1737                                                                                | 1900                                                                                | 1856                                                                                | 1841                                                                                |
| Adj Flow Rate, veh/h         | 411                                                                               | 276                                                                               | 178                                                                               | 203                                                                               | 441                                                                               | 223                                                                               | 145                                                                                 | 1224                                                                                | 51                                                                                  | 103                                                                                 | 2518                                                                                | 758                                                                                 |
| 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                                                                                |
| Percent Heavy Veh, %         | 11                                                                                | 24                                                                                | 5                                                                                 | 0                                                                                 | 7                                                                                 | 12                                                                                | 13                                                                                  | 7                                                                                   | 11                                                                                  | 0                                                                                   | 3                                                                                   | 4                                                                                   |
| Cap, veh/h                   | 419                                                                               | 378                                                                               | 458                                                                               | 250                                                                               | 384                                                                               | 378                                                                               | 139                                                                                 | 2333                                                                                | 700                                                                                 | 270                                                                                 | 2377                                                                                | 882                                                                                 |
| Arrive On Green              | 0.10                                                                              | 0.24                                                                              | 0.24                                                                              | 0.07                                                                              | 0.21                                                                              | 0.21                                                                              | 0.05                                                                                | 0.48                                                                                | 0.48                                                                                | 0.05                                                                                | 0.47                                                                                | 0.47                                                                                |
| Sat Flow, veh/h              | 3209                                                                              | 1544                                                                              | 1547                                                                              | 1810                                                                              | 1796                                                                              | 1459                                                                              | 1626                                                                                | 4904                                                                                | 1472                                                                                | 1810                                                                                | 5066                                                                                | 1560                                                                                |
| Grp Volume(v), veh/h         | 411                                                                               | 276                                                                               | 178                                                                               | 203                                                                               | 441                                                                               | 223                                                                               | 145                                                                                 | 1224                                                                                | 51                                                                                  | 103                                                                                 | 2518                                                                                | 758                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1605                                                                              | 1544                                                                              | 1547                                                                              | 1810                                                                              | 1796                                                                              | 1459                                                                              | 1626                                                                                | 1635                                                                                | 1472                                                                                | 1810                                                                                | 1689                                                                                | 1560                                                                                |
| Q Serve(g_s), s              | 12.5                                                                              | 21.4                                                                              | 11.9                                                                              | 8.5                                                                               | 27.8                                                                              | 17.4                                                                              | 6.7                                                                                 | 22.7                                                                                | 2.4                                                                                 | 3.8                                                                                 | 61.0                                                                                | 53.4                                                                                |
| Cycle Q Clear(g_c), s        | 12.5                                                                              | 21.4                                                                              | 11.9                                                                              | 8.5                                                                               | 27.8                                                                              | 17.4                                                                              | 6.7                                                                                 | 22.7                                                                                | 2.4                                                                                 | 3.8                                                                                 | 61.0                                                                                | 53.4                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 419                                                                               | 378                                                                               | 458                                                                               | 250                                                                               | 384                                                                               | 378                                                                               | 139                                                                                 | 2333                                                                                | 700                                                                                 | 270                                                                                 | 2377                                                                                | 882                                                                                 |
| V/C Ratio(X)                 | 0.98                                                                              | 0.73                                                                              | 0.39                                                                              | 0.81                                                                              | 1.15                                                                              | 0.59                                                                              | 1.04                                                                                | 0.52                                                                                | 0.07                                                                                | 0.38                                                                                | 1.06                                                                                | 0.86                                                                                |
| Avail Cap(c_a), veh/h        | 419                                                                               | 378                                                                               | 458                                                                               | 250                                                                               | 384                                                                               | 378                                                                               | 139                                                                                 | 2333                                                                                | 700                                                                                 | 348                                                                                 | 2377                                                                                | 882                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 39.4                                                                              | 45.2                                                                              | 36.4                                                                              | 42.0                                                                              | 51.1                                                                              | 42.1                                                                              | 35.5                                                                                | 23.8                                                                                | 18.5                                                                                | 18.4                                                                                | 34.5                                                                                | 23.9                                                                                |
| Incr Delay (d2), s/veh       | 38.6                                                                              | 8.6                                                                               | 1.1                                                                               | 18.0                                                                              | 92.7                                                                              | 3.8                                                                               | 87.8                                                                                | 0.4                                                                                 | 0.1                                                                                 | 0.5                                                                                 | 36.6                                                                                | 9.2                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 7.3                                                                               | 8.9                                                                               | 4.5                                                                               | 3.5                                                                               | 22.0                                                                              | 6.5                                                                               | 5.4                                                                                 | 8.2                                                                                 | 0.8                                                                                 | 1.5                                                                                 | 30.7                                                                                | 20.2                                                                                |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 78.0                                                                              | 53.7                                                                              | 37.5                                                                              | 60.1                                                                              | 143.8                                                                             | 45.9                                                                              | 123.3                                                                               | 24.2                                                                                | 18.6                                                                                | 18.9                                                                                | 71.1                                                                                | 33.1                                                                                |
| LnGrp LOS                    | E                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | F                                                                                 | D                                                                                 | F                                                                                   | C                                                                                   | B                                                                                   | B                                                                                   | F                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 865                                                                               |                                                                                   |                                                                                   | 867                                                                               |                                                                                   |                                                                                   | 1420                                                                                |                                                                                     |                                                                                     | 3379                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 61.9                                                                              |                                                                                   |                                                                                   | 99.0                                                                              |                                                                                   |                                                                                   | 34.1                                                                                |                                                                                     |                                                                                     | 61.0                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | E                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | C                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.2                                                                              | 67.8                                                                              | 13.0                                                                              | 38.0                                                                              | 12.0                                                                              | 67.0                                                                              | 17.0                                                                                | 34.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 5.3                                                                             | 6.0                                                                               | 4.5                                                                               | * 6.2                                                                             | * 5.3                                                                             | 6.0                                                                               | 4.5                                                                                 | * 6.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s* | 12                                                                                | 56.2                                                                              | 8.5                                                                               | * 32                                                                              | * 6.7                                                                             | 61.0                                                                              | 12.5                                                                                | * 28                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.8                                                                               | 24.7                                                                              | 10.5                                                                              | 23.4                                                                              | 8.7                                                                               | 63.0                                                                              | 14.5                                                                                | 29.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.1                                                                               | 17.3                                                                              | 0.0                                                                               | 2.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 60.3

HCM 6th LOS E

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh          | 2.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Movement                  | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations       |  |  |  |  |  |  |
| Traffic Vol, veh/h        | 77                                                                                | 410                                                                               | 432                                                                               | 43                                                                                | 71                                                                                | 101                                                                               |
| Future Vol, veh/h         | 77                                                                                | 410                                                                               | 432                                                                               | 43                                                                                | 71                                                                                | 101                                                                               |
| Conflicting Peds, #/hr    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Stop                                                                              | Stop                                                                              |
| RT Channelized            | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length            | 200                                                                               | -                                                                                 | -                                                                                 | 200                                                                               | 0                                                                                 | -                                                                                 |
| Veh in Median Storage, #- |                                                                                   | 0                                                                                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                  | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor          | 92                                                                                | 92                                                                                | 92                                                                                | 92                                                                                | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %         | 13                                                                                | 24                                                                                | 2                                                                                 | 0                                                                                 | 0                                                                                 | 23                                                                                |
| Mvmt Flow                 | 84                                                                                | 446                                                                               | 470                                                                               | 47                                                                                | 77                                                                                | 110                                                                               |
|                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Major/Minor               | Major1                                                                            | Major2                                                                            |                                                                                   | Minor2                                                                            |                                                                                   |                                                                                   |
| Conflicting Flow All      | 517                                                                               | 0                                                                                 | -                                                                                 | 0                                                                                 | 1084                                                                              | 470                                                                               |
| Stage 1                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 470                                                                               | -                                                                                 |
| Stage 2                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 614                                                                               | -                                                                                 |
| Critical Hdwy             | 4.23                                                                              | -                                                                                 | -                                                                                 | -                                                                                 | 4.4                                                                               | 4.4                                                                               |
| Critical Hdwy Stg 1       | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 5.4                                                                               | -                                                                                 |
| Critical Hdwy Stg 2       | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 5.4                                                                               | -                                                                                 |
| Follow-up Hdwy            | 2.317                                                                             | -                                                                                 | -                                                                                 | -                                                                                 | 3.5                                                                               | 3.507                                                                             |
| Pot Cap-1 Maneuver        | 995                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | 442                                                                               | 720                                                                               |
| Stage 1                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 633                                                                               | -                                                                                 |
| Stage 2                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 544                                                                               | -                                                                                 |
| Platoon blocked, %        |                                                                                   | -                                                                                 | -                                                                                 | -                                                                                 |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver        | 995                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | 405                                                                               | 720                                                                               |
| Mov Cap-2 Maneuver        | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 405                                                                               | -                                                                                 |
| Stage 1                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 580                                                                               | -                                                                                 |
| Stage 2                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 544                                                                               | -                                                                                 |
|                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach                  | EB                                                                                | WB                                                                                |                                                                                   | SB                                                                                |                                                                                   |                                                                                   |
| HCM Control Delay, s      | 1.4                                                                               | 0                                                                                 |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |
| HCM LOS                   |                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |
|                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt     | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBLn1                                                                             |                                                                                   |
| Capacity (veh/h)          | 995                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | 545                                                                               |                                                                                   |
| HCM Lane V/C Ratio        | 0.084                                                                             | -                                                                                 | -                                                                                 | -                                                                                 | 0.343                                                                             |                                                                                   |
| HCM Control Delay (s)     | 9                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 15                                                                                |                                                                                   |
| HCM Lane LOS              | A                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | C                                                                                 |                                                                                   |
| HCM 95th %tile Q(veh)     | 0.3                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | 1.5                                                                               |                                                                                   |

## **PM Phase II**



| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 4.3  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 5    | 29   | 2    | 30   | 38   | 56   | 1    | 272  | 43   | 54   | 128  | 6    |
| Future Vol, veh/h         | 5    | 29   | 2    | 30   | 38   | 56   | 1    | 272  | 43   | 54   | 128  | 6    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                 | 5    | 32   | 2    | 33   | 41   | 61   | 1    | 296  | 47   | 59   | 139  | 7    |

| Major/Minor          | Minor2 |     | Minor1 |       | Major1 |     | Major2 |   |   |      |   |   |
|----------------------|--------|-----|--------|-------|--------|-----|--------|---|---|------|---|---|
| Conflicting Flow All | 634    | 606 | 143    | 600   | 586    | 320 | 146    | 0 | 0 | 343  | 0 | 0 |
| Stage 1              | 261    | 261 | -      | 322   | 322    | -   | -      | - | - | -    | - | - |
| Stage 2              | 373    | 345 | -      | 278   | 264    | -   | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.1    | 6.5 | 6.2    | 7.17  | 6.5    | 6.2 | 4.1    | - | - | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.1    | 5.5 | -      | 6.17  | 5.5    | -   | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.1    | 5.5 | -      | 6.17  | 5.5    | -   | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.5    | 4   | 3.3    | 3.563 | 4      | 3.3 | 2.2    | - | - | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 395    | 414 | 910    | 406   | 425    | 725 | 1448   | - | - | 1227 | - | - |
| Stage 1              | 748    | 696 | -      | 679   | 655    | -   | -      | - | - | -    | - | - |
| Stage 2              | 652    | 640 | -      | 718   | 694    | -   | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |     |        |       |        |     |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 320    | 392 | 910    | 365   | 402    | 725 | 1448   | - | - | 1227 | - | - |
| Mov Cap-2 Maneuver   | 320    | 392 | -      | 365   | 402    | -   | -      | - | - | -    | - | - |
| Stage 1              | 747    | 660 | -      | 678   | 654    | -   | -      | - | - | -    | - | - |
| Stage 2              | 559    | 639 | -      | 647   | 658    | -   | -      | - | - | -    | - | - |

| Approach             | EB  | WB   | NB | SB  |
|----------------------|-----|------|----|-----|
| HCM Control Delay, s | 5.2 | 15.2 | 0  | 2.3 |
| HCM LOS              | C   | C    |    |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn | WBLn  | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1448  | -   | -   | 392  | 488   | 1227  | -   | -   |
| HCM Lane V/C Ratio    | 0.001 | -   | -   | 0.1  | 0.276 | 0.048 | -   | -   |
| HCM Control Delay (s) | 7.5   | 0   | -   | 15.2 | 15.2  | 8.1   | 0   | -   |
| HCM Lane LOS          | A     | A   | -   | C    | C     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0     | -   | -   | 0.3  | 1.1   | 0.2   | -   | -   |

| Intersection              |        |        |       |        |       |       |
|---------------------------|--------|--------|-------|--------|-------|-------|
| Int Delay, s/veh          | 7      |        |       |        |       |       |
| Movement                  | EBT    | EBR    | WBL   | WBT    | NBL   | NBR   |
| Lane Configurations       | ↰      |        | ↰     | ↰      | ↰     | ↰     |
| Traffic Vol, veh/h        | 169    | 29     | 220   | 118    | 37    | 290   |
| Future Vol, veh/h         | 169    | 29     | 220   | 118    | 37    | 290   |
| Conflicting Peds, #/hr    | 0      | 0      | 0     | 0      | 0     | 0     |
| Sign Control              | Free   | Free   | Free  | Free   | Stop  | Stop  |
| RT Channelized            | -      | None   | -     | None   | -     | None  |
| Storage Length            | -      | -      | 100   | -      | 450   | 0     |
| Veh in Median Storage, #0 | -      | -      | -     | 0      | 0     | -     |
| Grade, %                  | 0      | -      | -     | 0      | 0     | -     |
| Peak Hour Factor          | 92     | 92     | 92    | 92     | 92    | 92    |
| Heavy Vehicles, %         | 18     | 79     | 3     | 0      | 26    | 3     |
| Mvmt Flow                 | 184    | 32     | 239   | 128    | 40    | 315   |
|                           |        |        |       |        |       |       |
| Major/Minor               | Major1 | Major2 |       | Minor1 |       |       |
| Conflicting Flow All      | 0      | 0      | 216   | 0      | 806   | 200   |
| Stage 1                   | -      | -      | -     | -      | 200   | -     |
| Stage 2                   | -      | -      | -     | -      | 606   | -     |
| Critical Hdwy             | -      | -      | 4.13  | -      | 6.66  | 6.23  |
| Critical Hdwy Stg 1       | -      | -      | -     | -      | 5.66  | -     |
| Critical Hdwy Stg 2       | -      | -      | -     | -      | 5.66  | -     |
| Follow-up Hdwy            | -      | -      | 2.227 | -      | 3.734 | 3.327 |
| Pot Cap-1 Maneuver        | -      | -      | 1348  | -      | 320   | 838   |
| Stage 1                   | -      | -      | -     | -      | 780   | -     |
| Stage 2                   | -      | -      | -     | -      | 501   | -     |
| Platoon blocked, %        | -      | -      |       | -      |       |       |
| Mov Cap-1 Maneuver        | -      | -      | 1348  | -      | 263   | 838   |
| Mov Cap-2 Maneuver        | -      | -      | -     | -      | 263   | -     |
| Stage 1                   | -      | -      | -     | -      | 642   | -     |
| Stage 2                   | -      | -      | -     | -      | 501   | -     |
|                           |        |        |       |        |       |       |
|                           |        |        |       |        |       |       |
| Approach                  | EB     | WB     |       | NB     |       |       |
| HCM Control Delay, s      | 0      | 5.4    |       | 12.9   |       |       |
| HCM LOS                   | B      |        |       |        |       |       |
|                           |        |        |       |        |       |       |
|                           |        |        |       |        |       |       |
| Minor Lane/Major Mvmt     | NBLn1  | NBLn2  | EBT   | EBR    | WBL   | WBT   |
| Capacity (veh/h)          | 263    | 838    | -     | -      | 1348  | -     |
| HCM Lane V/C Ratio        | 0.153  | 0.376  | -     | -      | 0.177 | -     |
| HCM Control Delay (s)     | 21.1   | 11.9   | -     | -      | 8.2   | -     |
| HCM Lane LOS              | C      | B      | -     | -      | A     | -     |
| HCM 95th %tile Q(veh)     | 0.5    | 1.8    | -     | -      | 0.6   | -     |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

08/22/2019

|                              |  |  |  |  |  |  |    |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 643                                                                               | 229                                                                               | 63                                                                                | 112                                                                               | 203                                                                               | 208                                                                               | 140                                                                                 | 2209                                                                                | 190                                                                                 | 185                                                                                 | 1812                                                                                | 402                                                                                 |
| Future Volume (veh/h)        | 643                                                                               | 229                                                                               | 63                                                                                | 112                                                                               | 203                                                                               | 208                                                                               | 140                                                                                 | 2209                                                                                | 190                                                                                 | 185                                                                                 | 1812                                                                                | 402                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1870                                                                                | 1870                                                                                | 1870                                                                                | 1870                                                                                | 1870                                                                                | 1885                                                                                |
| Adj Flow Rate, veh/h         | 699                                                                               | 249                                                                               | 68                                                                                | 122                                                                               | 221                                                                               | 226                                                                               | 152                                                                                 | 2401                                                                                | 207                                                                                 | 201                                                                                 | 1970                                                                                | 437                                                                                 |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2                                                                                   | 2                                                                                   | 2                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   |
| Cap, veh/h                   | 456                                                                               | 486                                                                               | 412                                                                               | 314                                                                               | 175                                                                               | 242                                                                               | 128                                                                                 | 1658                                                                                | 740                                                                                 | 151                                                                                 | 1706                                                                                | 1127                                                                                |
| Arrive On Green              | 0.23                                                                              | 0.26                                                                              | 0.26                                                                              | 0.06                                                                              | 0.09                                                                              | 0.09                                                                              | 0.04                                                                                | 0.47                                                                                | 0.47                                                                                | 0.06                                                                                | 0.48                                                                                | 0.48                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 1900                                                                              | 1610                                                                              | 1810                                                                              | 1900                                                                              | 1610                                                                              | 1781                                                                                | 3554                                                                                | 1585                                                                                | 1781                                                                                | 3554                                                                                | 1598                                                                                |
| Grp Volume(v), veh/h         | 699                                                                               | 249                                                                               | 68                                                                                | 122                                                                               | 221                                                                               | 226                                                                               | 152                                                                                 | 2401                                                                                | 207                                                                                 | 201                                                                                 | 1970                                                                                | 437                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                              | 1610                                                                              | 1810                                                                              | 1900                                                                              | 1610                                                                              | 1781                                                                                | 1777                                                                                | 1585                                                                                | 1781                                                                                | 1777                                                                                | 1598                                                                                |
| Q Serve(g_s), s              | 33.8                                                                              | 16.8                                                                              | 4.9                                                                               | 7.4                                                                               | 13.8                                                                              | 13.8                                                                              | 6.7                                                                                 | 70.0                                                                                | 12.0                                                                                | 8.7                                                                                 | 72.0                                                                                | 16.6                                                                                |
| Cycle Q Clear(g_c), s        | 33.8                                                                              | 16.8                                                                              | 4.9                                                                               | 7.4                                                                               | 13.8                                                                              | 13.8                                                                              | 6.7                                                                                 | 70.0                                                                                | 12.0                                                                                | 8.7                                                                                 | 72.0                                                                                | 16.6                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 456                                                                               | 486                                                                               | 412                                                                               | 314                                                                               | 175                                                                               | 242                                                                               | 128                                                                                 | 1658                                                                                | 740                                                                                 | 151                                                                                 | 1706                                                                                | 1127                                                                                |
| V/C Ratio(X)                 | 1.53                                                                              | 0.51                                                                              | 0.16                                                                              | 0.39                                                                              | 1.26                                                                              | 0.94                                                                              | 1.19                                                                                | 1.45                                                                                | 0.28                                                                                | 1.33                                                                                | 1.15                                                                                | 0.39                                                                                |
| Avail Cap(c_a), veh/h        | 456                                                                               | 486                                                                               | 412                                                                               | 314                                                                               | 175                                                                               | 242                                                                               | 128                                                                                 | 1658                                                                                | 740                                                                                 | 151                                                                                 | 1706                                                                                | 1127                                                                                |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.56                                                                                | 0.56                                                                                | 0.56                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 47.5                                                                              | 47.8                                                                              | 43.3                                                                              | 38.5                                                                              | 68.1                                                                              | 63.0                                                                              | 43.6                                                                                | 40.0                                                                                | 24.5                                                                                | 46.7                                                                                | 39.0                                                                                | 9.0                                                                                 |
| Incr Delay (d2), s/veh       | 251.0                                                                             | 0.9                                                                               | 0.2                                                                               | 0.8                                                                               | 156.4                                                                             | 40.6                                                                              | 121.2                                                                               | 203.5                                                                               | 0.5                                                                                 | 186.0                                                                               | 76.8                                                                                | 1.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 46.9                                                                              | 8.0                                                                               | 2.0                                                                               | 3.3                                                                               | 14.2                                                                              | 11.1                                                                              | 6.6                                                                                 | 76.9                                                                                | 4.5                                                                                 | 10.6                                                                                | 49.0                                                                                | 5.6                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 298.6                                                                             | 48.7                                                                              | 43.5                                                                              | 39.3                                                                              | 224.5                                                                             | 103.6                                                                             | 164.7                                                                               | 243.5                                                                               | 25.1                                                                                | 232.6                                                                               | 115.8                                                                               | 10.0                                                                                |
| LnGrp LOS                    | F                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | F                                                                                 | F                                                                                 | F                                                                                   | F                                                                                   | C                                                                                   | F                                                                                   | F                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1016                                                                              |                                                                                   |                                                                                   |                                                                                   | 569                                                                               |                                                                                   | 2760                                                                                |                                                                                     |                                                                                     |                                                                                     | 2608                                                                                |                                                                                     |
| Approach Delay, s/veh        | 220.3                                                                             |                                                                                   |                                                                                   |                                                                                   | 136.8                                                                             |                                                                                   | 222.7                                                                               |                                                                                     |                                                                                     |                                                                                     | 107.1                                                                               |                                                                                     |
| Approach LOS                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   | F                                                                                 |                                                                                   | F                                                                                   |                                                                                     |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 12.0                                                                              | 78.0                                                                              | 15.4                                                                              | 44.6                                                                              | 14.0                                                                              | 76.0                                                                              | 40.0                                                                                | 20.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 5.3                                                                             | 6.0                                                                               | * 6.2                                                                             | * 6.2                                                                             | * 5.3                                                                             | 6.0                                                                               | * 6.2                                                                               | * 6.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.7                                                                               | 72.0                                                                              | * 9.2                                                                             | * 38                                                                              | * 8.7                                                                             | 70.0                                                                              | * 34                                                                                | * 14                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 8.7                                                                               | 74.0                                                                              | 9.4                                                                               | 18.8                                                                              | 10.7                                                                              | 72.0                                                                              | 35.8                                                                                | 15.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 172.0

HCM 6th LOS F

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|---------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh          | 6.8    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                  | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations       |        |  |  |        |  |       |
| Traffic Vol, veh/h        | 142    | 428                                                                               | 501                                                                               | 92     | 59                                                                                | 51    |
| Future Vol, veh/h         | 142    | 428                                                                               | 501                                                                               | 92     | 59                                                                                | 51    |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0     |
| Sign Control              | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop  |
| RT Channelized            | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None  |
| Storage Length            | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -     |
| Veh in Median Storage, #- | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Grade, %                  | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -     |
| Peak Hour Factor          | 92     | 92                                                                                | 89                                                                                | 58     | 92                                                                                | 92    |
| Heavy Vehicles, %         | 8      | 3                                                                                 | 4                                                                                 | 0      | 17                                                                                | 20    |
| Mvmt Flow                 | 154    | 465                                                                               | 563                                                                               | 159    | 64                                                                                | 55    |
| Major/Minor               | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All      | 722    | 0                                                                                 | -                                                                                 | 0      | 1416                                                                              | 643   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 643                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 773                                                                               | -     |
| Critical Hdwy             | 4.18   | -                                                                                 | -                                                                                 | -      | 6.57                                                                              | 6.4   |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -                                                                                 | -      | 5.57                                                                              | -     |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -                                                                                 | -      | 5.57                                                                              | -     |
| Follow-up Hdwy            | 2.272  | -                                                                                 | -                                                                                 | -      | 3.653                                                                             | 3.48  |
| Pot Cap-1 Maneuver        | 853    | -                                                                                 | -                                                                                 | -      | 140                                                                               | 443   |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 496                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 430                                                                               | -     |
| Platoon blocked, %        | -      | -                                                                                 | -                                                                                 | -      | -                                                                                 | -     |
| Mov Cap-1 Maneuver        | 853    | -                                                                                 | -                                                                                 | -      | 106                                                                               | 443   |
| Mov Cap-2 Maneuver        | -      | -                                                                                 | -                                                                                 | -      | 106                                                                               | -     |
| Stage 1                   | -      | -                                                                                 | -                                                                                 | -      | 375                                                                               | -     |
| Stage 2                   | -      | -                                                                                 | -                                                                                 | -      | 430                                                                               | -     |
| Approach                  | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s      | 2.5    | 0                                                                                 |                                                                                   | 70.5   |                                                                                   |       |
| HCM LOS                   |        |                                                                                   |                                                                                   | F      |                                                                                   |       |
| Minor Lane/Major Mvmt     | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)          | 853    | -                                                                                 | -                                                                                 | -      | -                                                                                 | 164   |
| HCM Lane V/C Ratio        | 0.181  | -                                                                                 | -                                                                                 | -      | -                                                                                 | 0.729 |
| HCM Control Delay (s)     | 10.2   | 0                                                                                 | -                                                                                 | -      | -                                                                                 | 70.5  |
| HCM Lane LOS              | B      | A                                                                                 | -                                                                                 | -      | -                                                                                 | F     |
| HCM 95th %tile Q(veh)     | 0.7    | -                                                                                 | -                                                                                 | -      | -                                                                                 | 4.5   |

## **PM Phase II Modified**



| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 4.3  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 5    | 29   | 2    | 30   | 38   | 56   | 1    | 272  | 43   | 54   | 128  | 6    |
| Future Vol, veh/h         | 5    | 29   | 2    | 30   | 38   | 56   | 1    | 272  | 43   | 54   | 128  | 6    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                 | 5    | 32   | 2    | 33   | 41   | 61   | 1    | 296  | 47   | 59   | 139  | 7    |

| Major/Minor          | Minor2 |     | Minor1 |       | Major1 |     | Major2 |   |   |      |   |   |
|----------------------|--------|-----|--------|-------|--------|-----|--------|---|---|------|---|---|
| Conflicting Flow All | 634    | 606 | 143    | 600   | 586    | 320 | 146    | 0 | 0 | 343  | 0 | 0 |
| Stage 1              | 261    | 261 | -      | 322   | 322    | -   | -      | - | - | -    | - | - |
| Stage 2              | 373    | 345 | -      | 278   | 264    | -   | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.1    | 6.5 | 6.2    | 7.17  | 6.5    | 6.2 | 4.1    | - | - | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.1    | 5.5 | -      | 6.17  | 5.5    | -   | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.1    | 5.5 | -      | 6.17  | 5.5    | -   | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.5    | 4   | 3.3    | 3.563 | 4      | 3.3 | 2.2    | - | - | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 395    | 414 | 910    | 406   | 425    | 725 | 1448   | - | - | 1227 | - | - |
| Stage 1              | 748    | 696 | -      | 679   | 655    | -   | -      | - | - | -    | - | - |
| Stage 2              | 652    | 640 | -      | 718   | 694    | -   | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |     |        |       |        |     |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 320    | 392 | 910    | 365   | 402    | 725 | 1448   | - | - | 1227 | - | - |
| Mov Cap-2 Maneuver   | 320    | 392 | -      | 365   | 402    | -   | -      | - | - | -    | - | - |
| Stage 1              | 747    | 660 | -      | 678   | 654    | -   | -      | - | - | -    | - | - |
| Stage 2              | 559    | 639 | -      | 647   | 658    | -   | -      | - | - | -    | - | - |

| Approach             | EB  | WB   | NB | SB  |
|----------------------|-----|------|----|-----|
| HCM Control Delay, s | 5.2 | 15.2 | 0  | 2.3 |
| HCM LOS              | C   | C    |    |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn | WBLn  | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1448  | -   | -   | 392  | 488   | 1227  | -   | -   |
| HCM Lane V/C Ratio    | 0.001 | -   | -   | 0.1  | 0.276 | 0.048 | -   | -   |
| HCM Control Delay (s) | 7.5   | 0   | -   | 15.2 | 15.2  | 8.1   | 0   | -   |
| HCM Lane LOS          | A     | A   | -   | C    | C     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0     | -   | -   | 0.3  | 1.1   | 0.2   | -   | -   |

| Intersection              |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|---------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Int Delay, s/veh          | 7                                                                                 |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Movement                  | EBT                                                                               | EBR    | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                                |
| Lane Configurations       |  |        |  |  |  |  |
| Traffic Vol, veh/h        | 169                                                                               | 29     | 220                                                                               | 118                                                                               | 37                                                                                | 290                                                                                |
| Future Vol, veh/h         | 169                                                                               | 29     | 220                                                                               | 118                                                                               | 37                                                                                | 290                                                                                |
| Conflicting Peds, #/hr    | 0                                                                                 | 0      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Sign Control              | Free                                                                              | Free   | Free                                                                              | Free                                                                              | Stop                                                                              | Stop                                                                               |
| RT Channelized            | -                                                                                 | None   | -                                                                                 | None                                                                              | -                                                                                 | None                                                                               |
| Storage Length            | -                                                                                 | -      | 100                                                                               | -                                                                                 | 450                                                                               | 0                                                                                  |
| Veh in Median Storage, #0 | -                                                                                 | -      | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                  |
| Grade, %                  | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                  |
| Peak Hour Factor          | 92                                                                                | 92     | 92                                                                                | 92                                                                                | 92                                                                                | 92                                                                                 |
| Heavy Vehicles, %         | 18                                                                                | 79     | 3                                                                                 | 0                                                                                 | 26                                                                                | 3                                                                                  |
| Mvmt Flow                 | 184                                                                               | 32     | 239                                                                               | 128                                                                               | 40                                                                                | 315                                                                                |
|                           |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Major/Minor               | Major1                                                                            | Major2 |                                                                                   | Minor1                                                                            |                                                                                   |                                                                                    |
| Conflicting Flow All      | 0                                                                                 | 0      | 216                                                                               | 0                                                                                 | 806                                                                               | 200                                                                                |
| Stage 1                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 200                                                                               | -                                                                                  |
| Stage 2                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 606                                                                               | -                                                                                  |
| Critical Hdwy             | -                                                                                 | -      | 4.13                                                                              | -                                                                                 | 6.66                                                                              | 6.23                                                                               |
| Critical Hdwy Stg 1       | -                                                                                 | -      | -                                                                                 | -                                                                                 | 5.66                                                                              | -                                                                                  |
| Critical Hdwy Stg 2       | -                                                                                 | -      | -                                                                                 | -                                                                                 | 5.66                                                                              | -                                                                                  |
| Follow-up Hdwy            | -                                                                                 | -      | 2.227                                                                             | -                                                                                 | 3.734                                                                             | 3.327                                                                              |
| Pot Cap-1 Maneuver        | -                                                                                 | -      | 1348                                                                              | -                                                                                 | 320                                                                               | 838                                                                                |
| Stage 1                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 780                                                                               | -                                                                                  |
| Stage 2                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 501                                                                               | -                                                                                  |
| Platoon blocked, %        | -                                                                                 | -      |                                                                                   | -                                                                                 |                                                                                   |                                                                                    |
| Mov Cap-1 Maneuver        | -                                                                                 | -      | 1348                                                                              | -                                                                                 | 263                                                                               | 838                                                                                |
| Mov Cap-2 Maneuver        | -                                                                                 | -      | -                                                                                 | -                                                                                 | 263                                                                               | -                                                                                  |
| Stage 1                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 642                                                                               | -                                                                                  |
| Stage 2                   | -                                                                                 | -      | -                                                                                 | -                                                                                 | 501                                                                               | -                                                                                  |
|                           |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                           |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Approach                  | EB                                                                                | WB     |                                                                                   | NB                                                                                |                                                                                   |                                                                                    |
| HCM Control Delay, s      | 0                                                                                 | 5.4    |                                                                                   | 12.9                                                                              |                                                                                   |                                                                                    |
| HCM LOS                   | B                                                                                 |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                           |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                           |                                                                                   |        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Minor Lane/Major Mvmt     | NBLn1                                                                             | NBLn2  | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                                |
| Capacity (veh/h)          | 263                                                                               | 838    | -                                                                                 | -                                                                                 | 1348                                                                              | -                                                                                  |
| HCM Lane V/C Ratio        | 0.153                                                                             | 0.376  | -                                                                                 | -                                                                                 | 0.177                                                                             | -                                                                                  |
| HCM Control Delay (s)     | 21.1                                                                              | 11.9   | -                                                                                 | -                                                                                 | 8.2                                                                               | -                                                                                  |
| HCM Lane LOS              | C                                                                                 | B      | -                                                                                 | -                                                                                 | A                                                                                 | -                                                                                  |
| HCM 95th %tile Q(veh)     | 0.5                                                                               | 1.8    | -                                                                                 | -                                                                                 | 0.6                                                                               | -                                                                                  |

# HCM 6th Signalized Intersection Summary

## 3: State Road 1 & Hathaway Rd

08/22/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 643                                                                               | 229                                                                               | 63                                                                                | 112                                                                               | 203                                                                               | 208                                                                               | 140                                                                                 | 2209                                                                                | 190                                                                                 | 185                                                                                 | 1812                                                                                | 402                                                                                 |
| Future Volume (veh/h)        | 643                                                                               | 229                                                                               | 63                                                                                | 112                                                                               | 203                                                                               | 208                                                                               | 140                                                                                 | 2209                                                                                | 190                                                                                 | 185                                                                                 | 1812                                                                                | 402                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1870                                                                                | 1870                                                                                | 1870                                                                                | 1870                                                                                | 1870                                                                                | 1885                                                                                |
| Adj Flow Rate, veh/h         | 699                                                                               | 249                                                                               | 68                                                                                | 122                                                                               | 221                                                                               | 226                                                                               | 152                                                                                 | 2401                                                                                | 207                                                                                 | 201                                                                                 | 1970                                                                                | 437                                                                                 |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2                                                                                   | 2                                                                                   | 2                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   |
| Cap, veh/h                   | 672                                                                               | 396                                                                               | 430                                                                               | 273                                                                               | 219                                                                               | 318                                                                               | 183                                                                                 | 2349                                                                                | 835                                                                                 | 202                                                                                 | 2469                                                                                | 1028                                                                                |
| Arrive On Green              | 0.16                                                                              | 0.21                                                                              | 0.21                                                                              | 0.07                                                                              | 0.12                                                                              | 0.12                                                                              | 0.06                                                                                | 0.46                                                                                | 0.46                                                                                | 0.08                                                                                | 0.48                                                                                | 0.48                                                                                |
| Sat Flow, veh/h              | 3510                                                                              | 1900                                                                              | 1610                                                                              | 1810                                                                              | 1900                                                                              | 1610                                                                              | 1781                                                                                | 5106                                                                                | 1585                                                                                | 1781                                                                                | 5106                                                                                | 1598                                                                                |
| Grp Volume(v), veh/h         | 699                                                                               | 249                                                                               | 68                                                                                | 122                                                                               | 221                                                                               | 226                                                                               | 152                                                                                 | 2401                                                                                | 207                                                                                 | 201                                                                                 | 1970                                                                                | 437                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1755                                                                              | 1900                                                                              | 1610                                                                              | 1810                                                                              | 1900                                                                              | 1610                                                                              | 1781                                                                                | 1702                                                                                | 1585                                                                                | 1781                                                                                | 1702                                                                                | 1598                                                                                |
| Q Serve(g_s), s              | 20.8                                                                              | 15.5                                                                              | 4.2                                                                               | 6.8                                                                               | 15.0                                                                              | 15.0                                                                              | 5.6                                                                                 | 59.8                                                                                | 9.2                                                                                 | 10.6                                                                                | 42.2                                                                                | 17.4                                                                                |
| Cycle Q Clear(g_c), s        | 20.8                                                                              | 15.5                                                                              | 4.2                                                                               | 6.8                                                                               | 15.0                                                                              | 15.0                                                                              | 5.6                                                                                 | 59.8                                                                                | 9.2                                                                                 | 10.6                                                                                | 42.2                                                                                | 17.4                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 672                                                                               | 396                                                                               | 430                                                                               | 273                                                                               | 219                                                                               | 318                                                                               | 183                                                                                 | 2349                                                                                | 835                                                                                 | 202                                                                                 | 2469                                                                                | 1028                                                                                |
| V/C Ratio(X)                 | 1.04                                                                              | 0.63                                                                              | 0.16                                                                              | 0.45                                                                              | 1.01                                                                              | 0.71                                                                              | 0.83                                                                                | 1.02                                                                                | 0.25                                                                                | 1.00                                                                                | 0.80                                                                                | 0.43                                                                                |
| Avail Cap(c_a), veh/h        | 672                                                                               | 396                                                                               | 430                                                                               | 273                                                                               | 219                                                                               | 318                                                                               | 230                                                                                 | 2349                                                                                | 835                                                                                 | 202                                                                                 | 2469                                                                                | 1028                                                                                |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.56                                                                                | 0.56                                                                                | 0.56                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 43.8                                                                              | 46.9                                                                              | 36.4                                                                              | 37.6                                                                              | 57.5                                                                              | 48.7                                                                              | 28.5                                                                                | 35.1                                                                                | 16.7                                                                                | 41.8                                                                                | 28.2                                                                                | 11.4                                                                                |
| Incr Delay (d2), s/veh       | 45.4                                                                              | 3.2                                                                               | 0.2                                                                               | 1.1                                                                               | 62.9                                                                              | 7.2                                                                               | 11.0                                                                                | 19.9                                                                                | 0.4                                                                                 | 61.8                                                                                | 2.8                                                                                 | 1.3                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 13.6                                                                              | 7.5                                                                               | 1.6                                                                               | 3.0                                                                               | 10.9                                                                              | 7.3                                                                               | 2.8                                                                                 | 28.4                                                                                | 3.3                                                                                 | 10.1                                                                                | 17.5                                                                                | 6.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 89.2                                                                              | 50.0                                                                              | 36.6                                                                              | 38.8                                                                              | 120.4                                                                             | 55.8                                                                              | 39.5                                                                                | 55.0                                                                                | 17.1                                                                                | 103.6                                                                               | 31.0                                                                                | 12.7                                                                                |
| LnGrp LOS                    | F                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | F                                                                                 | E                                                                                 | D                                                                                   | F                                                                                   | B                                                                                   | F                                                                                   | C                                                                                   | B                                                                                   |
| Approach Vol, veh/h          | 1016                                                                              |                                                                                   |                                                                                   | 569                                                                               |                                                                                   |                                                                                   | 2760                                                                                |                                                                                     |                                                                                     | 2608                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 76.0                                                                              |                                                                                   |                                                                                   | 77.2                                                                              |                                                                                   |                                                                                   | 51.3                                                                                |                                                                                     |                                                                                     | 33.5                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | D                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 12.9                                                                              | 68.9                                                                              | 14.9                                                                              | 33.3                                                                              | 16.0                                                                              | 65.8                                                                              | 27.0                                                                                | 21.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 5.3                                                                             | 6.0                                                                               | * 6.2                                                                             | * 6.2                                                                             | * 5.3                                                                             | 6.0                                                                               | * 6.2                                                                               | * 6.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s* | 11                                                                                | 59.4                                                                              | * 8.7                                                                             | * 27                                                                              | * 11                                                                              | 59.8                                                                              | * 21                                                                                | * 15                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 7.6                                                                               | 44.2                                                                              | 8.8                                                                               | 17.5                                                                              | 12.6                                                                              | 61.8                                                                              | 22.8                                                                                | 17.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.1                                                                               | 12.6                                                                              | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 50.4

HCM 6th LOS D

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh          | 2.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Movement                  | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations       |  |  |  |  |  |  |
| Traffic Vol, veh/h        | 142                                                                               | 428                                                                               | 501                                                                               | 92                                                                                | 59                                                                                | 51                                                                                |
| Future Vol, veh/h         | 142                                                                               | 428                                                                               | 501                                                                               | 92                                                                                | 59                                                                                | 51                                                                                |
| Conflicting Peds, #/hr    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Stop                                                                              | Stop                                                                              |
| RT Channelized            | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length            | 200                                                                               | -                                                                                 | -                                                                                 | 200                                                                               | -                                                                                 | -                                                                                 |
| Veh in Median Storage, #- |                                                                                   | 0                                                                                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                  | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor          | 92                                                                                | 92                                                                                | 89                                                                                | 58                                                                                | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %         | 8                                                                                 | 3                                                                                 | 4                                                                                 | 0                                                                                 | 17                                                                                | 20                                                                                |
| Mvmt Flow                 | 154                                                                               | 465                                                                               | 563                                                                               | 159                                                                               | 64                                                                                | 55                                                                                |
|                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Major/Minor               | Major1                                                                            | Major2                                                                            |                                                                                   | Minor2                                                                            |                                                                                   |                                                                                   |
| Conflicting Flow All      | 722                                                                               | 0                                                                                 | -                                                                                 | 0                                                                                 | 1336                                                                              | 563                                                                               |
| Stage 1                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 563                                                                               | -                                                                                 |
| Stage 2                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 773                                                                               | -                                                                                 |
| Critical Hdwy             | 4.18                                                                              | -                                                                                 | -                                                                                 | -                                                                                 | 4.4                                                                               | 4.4                                                                               |
| Critical Hdwy Stg 1       | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 5.57                                                                              | -                                                                                 |
| Critical Hdwy Stg 2       | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 5.57                                                                              | -                                                                                 |
| Follow-up Hdwy            | 2.272                                                                             | -                                                                                 | -                                                                                 | -                                                                                 | 3.653                                                                             | 3.48                                                                              |
| Pot Cap-1 Maneuver        | 853                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | 352                                                                               | 674                                                                               |
| Stage 1                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 541                                                                               | -                                                                                 |
| Stage 2                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 430                                                                               | -                                                                                 |
| Platoon blocked, %        |                                                                                   | -                                                                                 | -                                                                                 | -                                                                                 |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver        | 853                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | 288                                                                               | 674                                                                               |
| Mov Cap-2 Maneuver        | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 288                                                                               | -                                                                                 |
| Stage 1                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 443                                                                               | -                                                                                 |
| Stage 2                   | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 430                                                                               | -                                                                                 |
|                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach                  | EB                                                                                | WB                                                                                |                                                                                   | SB                                                                                |                                                                                   |                                                                                   |
| HCM Control Delay, s      | 2.5                                                                               | 0                                                                                 |                                                                                   | 18.2                                                                              |                                                                                   |                                                                                   |
| HCM LOS                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt     | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBLn1                                                                             |                                                                                   |
| Capacity (veh/h)          | 853                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | 392                                                                               |                                                                                   |
| HCM Lane V/C Ratio        | 0.181                                                                             | -                                                                                 | -                                                                                 | -                                                                                 | 0.305                                                                             |                                                                                   |
| HCM Control Delay (s)     | 10.2                                                                              | -                                                                                 | -                                                                                 | -                                                                                 | 18.2                                                                              |                                                                                   |
| HCM Lane LOS              | B                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | C                                                                                 |                                                                                   |
| HCM 95th %tile Q(veh)     | 0.7                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | 1.3                                                                               |                                                                                   |

# Appendix B

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## **Corridor 2: Cedar Canyons Road from Old Lima Road to Coldwater Road Existing, Phase I, and Phase II Synchro 10 outputs**



**AM Existing**



| Intersection             |        |        |        |       |       |      |
|--------------------------|--------|--------|--------|-------|-------|------|
| Int Delay, s/veh         | 3.6    |        |        |       |       |      |
| Movement                 | WBL    | WBR    | NBT    | NBR   | SBL   | SBT  |
| Lane Configurations      | W      | W      | T      | T     | T     | T    |
| Traffic Vol, veh/h       | 65     | 44     | 91     | 74    | 39    | 109  |
| Future Vol, veh/h        | 65     | 44     | 91     | 74    | 39    | 109  |
| Conflicting Peds, #/hr   | 0      | 0      | 0      | 0     | 0     | 0    |
| Sign Control             | Stop   | Stop   | Free   | Free  | Free  | Free |
| RT Channelized           | -      | None   | -      | None  | -     | None |
| Storage Length           | -      | -      | -      | -     | -     | -    |
| Veh in Median Storage, # | -      | 0      | -      | -     | -     | 0    |
| Grade, %                 | 0      | -      | 0      | -     | -     | 0    |
| Peak Hour Factor         | 81     | 69     | 69     | 46    | 65    | 74   |
| Heavy Vehicles, %        | 0      | 7      | 3      | 6     | 8     | 3    |
| Mvmt Flow                | 80     | 64     | 132    | 161   | 60    | 147  |
| Major/Minor              | Minor1 | Major1 | Major2 |       |       |      |
| Conflicting Flow All     | 480    | 213    | 0      | 0     | 293   | 0    |
| Stage 1                  | 213    | -      | -      | -     | -     | -    |
| Stage 2                  | 267    | -      | -      | -     | -     | -    |
| Critical Hdwy            | 6.4    | 6.27   | -      | -     | 4.18  | -    |
| Critical Hdwy Stg 1      | 5.4    | -      | -      | -     | -     | -    |
| Critical Hdwy Stg 2      | 5.4    | -      | -      | -     | -     | -    |
| Follow-up Hdwy           | 3.5    | 3.363  | -      | -     | 2.272 | -    |
| Pot Cap-1 Maneuver       | 548    | 815    | -      | -     | 1235  | -    |
| Stage 1                  | 827    | -      | -      | -     | -     | -    |
| Stage 2                  | 782    | -      | -      | -     | -     | -    |
| Platoon blocked, %       | -      | -      | -      | -     | -     | -    |
| Mov Cap-1 Maneuver       | 519    | 815    | -      | -     | 1235  | -    |
| Mov Cap-2 Maneuver       | 519    | -      | -      | -     | -     | -    |
| Stage 1                  | 783    | -      | -      | -     | -     | -    |
| Stage 2                  | 782    | -      | -      | -     | -     | -    |
| Approach                 | WB     | NB     | SB     |       |       |      |
| HCM Control Delay, s     | 2.6    | 0      | 2.3    |       |       |      |
| HCM LOS                  | B      |        |        |       |       |      |
| Minor Lane/Major Mvmt    | NBT    | NBWB   | NBWB   | NBWB  | SBL   | SBT  |
| Capacity (veh/h)         | -      | -      | 618    | 1235  | -     | -    |
| HCM Lane V/C Ratio       | -      | -      | 0.233  | 0.049 | -     | -    |
| HCM Control Delay (s)    | -      | -      | 12.6   | 8.1   | 0     | 0    |
| HCM Lane LOS             | -      | -      | B      | A     | A     | A    |
| HCM 95th %tile Q(veh)    | -      | -      | 0.9    | 0.2   | -     | -    |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 11                                                                                | 35                                                                                | 48                                                                                | 158                                                                               | 46                                                                                | 34                                                                                | 19                                                                                  | 431                                                                                 | 31                                                                                  | 16                                                                                  | 761                                                                                 | 15                                                                                  |
| Future Volume (veh/h)        | 11                                                                                | 35                                                                                | 48                                                                                | 158                                                                               | 46                                                                                | 34                                                                                | 19                                                                                  | 431                                                                                 | 31                                                                                  | 16                                                                                  | 761                                                                                 | 15                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1841                                                                              | 1841                                                                              | 1841                                                                              | 1811                                                                                | 1767                                                                                | 1767                                                                                | 1900                                                                                | 1870                                                                                | 1870                                                                                |
| Adj Flow Rate, veh/h         | 12                                                                                | 38                                                                                | 52                                                                                | 172                                                                               | 50                                                                                | 37                                                                                | 21                                                                                  | 468                                                                                 | 34                                                                                  | 17                                                                                  | 827                                                                                 | 16                                                                                  |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 6                                                                                   | 9                                                                                   | 9                                                                                   | 0                                                                                   | 2                                                                                   | 2                                                                                   |
| Cap, veh/h                   | 84                                                                                | 167                                                                               | 194                                                                               | 303                                                                               | 71                                                                                | 46                                                                                | 426                                                                                 | 1285                                                                                | 93                                                                                  | 567                                                                                 | 1444                                                                                | 28                                                                                  |
| Arrive On Green              | 0.22                                                                              | 0.22                                                                              | 0.22                                                                              | 0.22                                                                              | 0.22                                                                              | 0.22                                                                              | 0.10                                                                                | 0.40                                                                                | 0.40                                                                                | 0.10                                                                                | 0.40                                                                                | 0.40                                                                                |
| Sat Flow, veh/h              | 87                                                                                | 768                                                                               | 889                                                                               | 947                                                                               | 328                                                                               | 213                                                                               | 1725                                                                                | 3174                                                                                | 230                                                                                 | 1810                                                                                | 3566                                                                                | 69                                                                                  |
| Grp Volume(v), veh/h         | 102                                                                               | 0                                                                                 | 0                                                                                 | 259                                                                               | 0                                                                                 | 0                                                                                 | 21                                                                                  | 247                                                                                 | 255                                                                                 | 17                                                                                  | 412                                                                                 | 431                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1744                                                                              | 0                                                                                 | 0                                                                                 | 1488                                                                              | 0                                                                                 | 0                                                                                 | 1725                                                                                | 1678                                                                                | 1725                                                                                | 1810                                                                                | 1777                                                                                | 1858                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 6.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.4                                                                                 | 6.3                                                                                 | 6.4                                                                                 | 0.3                                                                                 | 11.1                                                                                | 11.1                                                                                |
| Cycle Q Clear(g_c), s        | 3.0                                                                               | 0.0                                                                               | 0.0                                                                               | 9.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.4                                                                                 | 6.3                                                                                 | 6.4                                                                                 | 0.3                                                                                 | 11.1                                                                                | 11.1                                                                                |
| Prop In Lane                 | 0.12                                                                              |                                                                                   | 0.51                                                                              | 0.66                                                                              |                                                                                   | 0.14                                                                              | 1.00                                                                                |                                                                                     | 0.13                                                                                | 1.00                                                                                |                                                                                     | 0.04                                                                                |
| Lane Grp Cap(c), veh/h       | 445                                                                               | 0                                                                                 | 0                                                                                 | 421                                                                               | 0                                                                                 | 0                                                                                 | 426                                                                                 | 679                                                                                 | 698                                                                                 | 567                                                                                 | 719                                                                                 | 752                                                                                 |
| V/C Ratio(X)                 | 0.23                                                                              | 0.00                                                                              | 0.00                                                                              | 0.61                                                                              | 0.00                                                                              | 0.00                                                                              | 0.05                                                                                | 0.36                                                                                | 0.37                                                                                | 0.03                                                                                | 0.57                                                                                | 0.57                                                                                |
| Avail Cap(c_a), veh/h        | 1001                                                                              | 0                                                                                 | 0                                                                                 | 890                                                                               | 0                                                                                 | 0                                                                                 | 806                                                                                 | 1468                                                                                | 1509                                                                                | 965                                                                                 | 1554                                                                                | 1625                                                                                |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 20.1                                                                              | 0.0                                                                               | 0.0                                                                               | 22.5                                                                              | 0.0                                                                               | 0.0                                                                               | 8.8                                                                                 | 12.8                                                                                | 12.8                                                                                | 8.1                                                                                 | 14.2                                                                                | 14.2                                                                                |
| Incr Delay (d2), s/veh       | 0.3                                                                               | 0.0                                                                               | 0.0                                                                               | 1.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.7                                                                                 | 0.7                                                                                 | 0.0                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 1.2                                                                               | 0.0                                                                               | 0.0                                                                               | 3.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 1.9                                                                                 | 2.0                                                                                 | 0.1                                                                                 | 3.6                                                                                 | 3.8                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 20.3                                                                              | 0.0                                                                               | 0.0                                                                               | 24.2                                                                              | 0.0                                                                               | 0.0                                                                               | 8.8                                                                                 | 13.5                                                                                | 13.5                                                                                | 8.1                                                                                 | 15.8                                                                                | 15.7                                                                                |
| LnGrp LOS                    | C                                                                                 | A                                                                                 | A                                                                                 | C                                                                                 | A                                                                                 | A                                                                                 | A                                                                                   | B                                                                                   | B                                                                                   | A                                                                                   | B                                                                                   | B                                                                                   |
| Approach Vol, veh/h          | 102                                                                               |                                                                                   | 259                                                                               |                                                                                   |                                                                                   |                                                                                   | 523                                                                                 |                                                                                     |                                                                                     |                                                                                     | 860                                                                                 |                                                                                     |
| Approach Delay, s/veh        | 20.3                                                                              |                                                                                   | 24.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 13.3                                                                                |                                                                                     |                                                                                     |                                                                                     | 15.6                                                                                |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                   | B                                                                                   |                                                                                     |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 4                                                                                 |                                                                                   | 5                                                                                 | 6                                                                                 | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.4                                                                              | 31.0                                                                              | 19.4                                                                              |                                                                                   | 11.4                                                                              | 31.0                                                                              | 19.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.4                                                                               | 6.0                                                                               | 5.9                                                                               |                                                                                   | 5.4                                                                               | 6.0                                                                               | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 9.6                                                                               | 54.0                                                                              | 34.1                                                                              |                                                                                   | 19.6                                                                              | 54.0                                                                              | 34.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.4                                                                               | 13.1                                                                              | 5.0                                                                               |                                                                                   | 2.3                                                                               | 8.4                                                                               | 11.9                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 11.2                                                                              | 0.6                                                                               |                                                                                   | 0.0                                                                               | 5.9                                                                               | 1.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 16.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |                                                                                   |      |        |                                                                                   |        |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 1.3                                                                               |      |        |                                                                                   |        |                                                                                   |
| Movement                 | EBT                                                                               | EBR  | WBL    | WBT                                                                               | NBL    | NBR                                                                               |
| Lane Configurations      |  |      |        |  |        |  |
| Traffic Vol, veh/h       | 82                                                                                | 4    | 9      | 90                                                                                | 10     | 5                                                                                 |
| Future Vol, veh/h        | 82                                                                                | 4    | 9      | 90                                                                                | 10     | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0      | 0                                                                                 | 0      | 0                                                                                 |
| Sign Control             | Free                                                                              | Free | Free   | Free                                                                              | Stop   | Stop                                                                              |
| RT Channelized           | -                                                                                 | None | -      | None                                                                              | -      | None                                                                              |
| Storage Length           | -                                                                                 | -    | -      | -                                                                                 | 0      | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | -      | 0                                                                                 | 0      | -                                                                                 |
| Grade, %                 | 0                                                                                 | -    | -      | 0                                                                                 | 0      | -                                                                                 |
| Peak Hour Factor         | 59                                                                                | 50   | 56     | 66                                                                                | 50     | 42                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 4    | 22     | 3                                                                                 | 0      | 20                                                                                |
| Mvmt Flow                | 139                                                                               | 8    | 16     | 136                                                                               | 20     | 12                                                                                |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Major/Minor              | Major1                                                                            |      | Major2 |                                                                                   | Minor1 |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0    | 147    | 0                                                                                 | 311    | 143                                                                               |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 143    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 168    | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -    | 4.32   | -                                                                                 | 6.4    | 6.4                                                                               |
| Critical Hdwy Stg 1      | -                                                                                 | -    | -      | -                                                                                 | 5.4    | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -    | -      | -                                                                                 | 5.4    | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -    | 2.398  | -                                                                                 | 3.5    | 3.48                                                                              |
| Pot Cap-1 Maneuver       | -                                                                                 | -    | 1321   | -                                                                                 | 686    | 859                                                                               |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 889    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 867    | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -    |        | -                                                                                 |        |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -    | 1321   | -                                                                                 | 677    | 859                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -    | -      | -                                                                                 | 677    | -                                                                                 |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 877    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 867    | -                                                                                 |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Approach                 | EB                                                                                |      | WB     |                                                                                   | NB     |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 |      | 0.8    |                                                                                   | 10.1   |                                                                                   |
| HCM LOS                  | B                                                                                 |      |        |                                                                                   |        |                                                                                   |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT  | EBR    | WBL                                                                               | WBT    |                                                                                   |
| Capacity (veh/h)         | 735                                                                               | -    | -      | 1321                                                                              | -      |                                                                                   |
| HCM Lane V/C Ratio       | 0.043                                                                             | -    | -      | 0.012                                                                             | -      |                                                                                   |
| HCM Control Delay (s)    | 10.1                                                                              | -    | -      | 7.8                                                                               | 0      |                                                                                   |
| HCM Lane LOS             | B                                                                                 | -    | -      | A                                                                                 | A      |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.1                                                                               | -    | -      | 0                                                                                 | -      |                                                                                   |

| Intersection              |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
|---------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh          | 5.7    |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Movement                  | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL  | SBT                                                                                 | SBR  |
| Lane Configurations       |        |  |        |       |  |       |        |  |      |      |  |      |
| Traffic Vol, veh/h        | 17     | 9                                                                                 | 86     | 27    | 33                                                                                | 4     | 33     | 99                                                                                | 3    | 2    | 173                                                                                 | 11   |
| Future Vol, veh/h         | 17     | 9                                                                                 | 86     | 27    | 33                                                                                | 4     | 33     | 99                                                                                | 3    | 2    | 173                                                                                 | 11   |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    |
| Sign Control              | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free | Free                                                                                | Free |
| RT Channelized            | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -    | -                                                                                   | None |
| Storage Length            | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Veh in Median Storage, #- | 0      | -                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Grade, %                  | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Peak Hour Factor          | 53     | 45                                                                                | 67     | 68    | 75                                                                                | 50    | 83     | 65                                                                                | 38   | 25   | 85                                                                                  | 92   |
| Heavy Vehicles, %         | 0      | 0                                                                                 | 2      | 0     | 0                                                                                 | 0     | 6      | 6                                                                                 | 33   | 50   | 2                                                                                   | 0    |
| Mvmt Flow                 | 32     | 20                                                                                | 128    | 40    | 44                                                                                | 8     | 40     | 152                                                                               | 8    | 8    | 204                                                                                 | 12   |
|                           |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Major/Minor               | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |      |                                                                                     |      |
| Conflicting Flow All      | 488    | 466                                                                               | 210    | 536   | 468                                                                               | 156   | 216    | 0                                                                                 | 0    | 160  | 0                                                                                   | 0    |
| Stage 1                   | 226    | 226                                                                               | -      | 236   | 236                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                   | 262    | 240                                                                               | -      | 300   | 232                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Critical Hdwy             | 7.1    | 6.5                                                                               | 6.22   | 7.1   | 6.5                                                                               | 6.2   | 4.16   | -                                                                                 | -    | 4.6  | -                                                                                   | -    |
| Critical Hdwy Stg 1       | 6.1    | 5.5                                                                               | -      | 6.1   | 5.5                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Critical Hdwy Stg 2       | 6.1    | 5.5                                                                               | -      | 6.1   | 5.5                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Follow-up Hdwy            | 3.5    | 4                                                                                 | 3.318  | 3.5   | 4                                                                                 | 3.3   | 2.254  | -                                                                                 | -    | 2.65 | -                                                                                   | -    |
| Pot Cap-1 Maneuver        | 493    | 497                                                                               | 830    | 459   | 496                                                                               | 895   | 1330   | -                                                                                 | -    | 1174 | -                                                                                   | -    |
| Stage 1                   | 781    | 721                                                                               | -      | 772   | 713                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                   | 747    | 711                                                                               | -      | 713   | 716                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Platoon blocked, %        |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |      | -                                                                                   | -    |
| Mov Cap-1 Maneuver        | 440    | 477                                                                               | 830    | 364   | 476                                                                               | 895   | 1330   | -                                                                                 | -    | 1174 | -                                                                                   | -    |
| Mov Cap-2 Maneuver        | 440    | 477                                                                               | -      | 364   | 476                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 1                   | 755    | 715                                                                               | -      | 747   | 689                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                   | 670    | 688                                                                               | -      | 581   | 710                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
|                           |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Approach                  | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |      |                                                                                     |      |
| HCM Control Delay, s      | 2.3    |                                                                                   | 15.4   |       | 1.5                                                                               |       | 0.3    |                                                                                   |      |      |                                                                                     |      |
| HCM LOS                   | B      |                                                                                   | C      |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
|                           |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Minor Lane/Major Mvmt     | NBL    | NBT                                                                               | NBR    | EBLn  | WBLn1                                                                             | SBL   | SBT    | SBR                                                                               |      |      |                                                                                     |      |
| Capacity (veh/h)          | 1330   | -                                                                                 | -      | 670   | 436                                                                               | 1174  | -      | -                                                                                 |      |      |                                                                                     |      |
| HCM Lane V/C Ratio        | 0.03   | -                                                                                 | -      | 0.269 | 0.21                                                                              | 0.007 | -      | -                                                                                 |      |      |                                                                                     |      |
| HCM Control Delay (s)     | 7.8    | 0                                                                                 | -      | 12.3  | 15.4                                                                              | 8.1   | 0      | -                                                                                 |      |      |                                                                                     |      |
| HCM Lane LOS              | A      | A                                                                                 | -      | B     | C                                                                                 | A     | A      | -                                                                                 |      |      |                                                                                     |      |
| HCM 95th %tile Q(veh)     | 0.1    | -                                                                                 | -      | 1.1   | 0.8                                                                               | 0     | -      | -                                                                                 |      |      |                                                                                     |      |

**PM Existing**



| Intersection             |        |        |        |      |       |      |
|--------------------------|--------|--------|--------|------|-------|------|
| Int Delay, s/veh         | 2.8    |        |        |      |       |      |
| Movement                 | WBL    | WBR    | NBT    | NBR  | SBL   | SBT  |
| Lane Configurations      | W      | W      | T      | T    | T     | T    |
| Traffic Vol, veh/h       | 35     | 11     | 121    | 54   | 43    | 85   |
| Future Vol, veh/h        | 35     | 11     | 121    | 54   | 43    | 85   |
| Conflicting Peds, #/hr   | 0      | 0      | 0      | 0    | 0     | 0    |
| Sign Control             | Stop   | Stop   | Free   | Free | Free  | Free |
| RT Channelized           | -      | None   | -      | None | -     | None |
| Storage Length           | -      | -      | -      | -    | -     | -    |
| Veh in Median Storage, # | -      | 0      | -      | -    | -     | 0    |
| Grade, %                 | 0      | -      | 0      | -    | -     | 0    |
| Peak Hour Factor         | 80     | 69     | 89     | 71   | 54    | 73   |
| Heavy Vehicles, %        | 3      | 9      | 3      | 4    | 9     | 2    |
| Mvmt Flow                | 44     | 16     | 136    | 76   | 80    | 116  |
| Major/Minor              | Minor1 | Major1 | Major2 |      |       |      |
| Conflicting Flow All     | 450    | 174    | 0      | 0    | 212   | 0    |
| Stage 1                  | 174    | -      | -      | -    | -     | -    |
| Stage 2                  | 276    | -      | -      | -    | -     | -    |
| Critical Hdwy            | 6.43   | 6.29   | -      | -    | 4.19  | -    |
| Critical Hdwy Stg 1      | 5.43   | -      | -      | -    | -     | -    |
| Critical Hdwy Stg 2      | 5.43   | -      | -      | -    | -     | -    |
| Follow-up Hdwy           | 3.527  | 3.381  | -      | -    | 2.281 | -    |
| Pot Cap-1 Maneuver       | 565    | 852    | -      | -    | 1318  | -    |
| Stage 1                  | 854    | -      | -      | -    | -     | -    |
| Stage 2                  | 768    | -      | -      | -    | -     | -    |
| Platoon blocked, %       | -      | -      | -      | -    | -     | -    |
| Mov Cap-1 Maneuver       | 528    | 852    | -      | -    | 1318  | -    |
| Mov Cap-2 Maneuver       | 528    | -      | -      | -    | -     | -    |
| Stage 1                  | 798    | -      | -      | -    | -     | -    |
| Stage 2                  | 768    | -      | -      | -    | -     | -    |
| Approach                 | WB     | NB     | SB     |      |       |      |
| HCM Control Delay, s     | 1.8    | 0      | 3.2    |      |       |      |
| HCM LOS                  | B      |        |        |      |       |      |
| Minor Lane/Major Mvmt    | NBT    | NBWB   | NBWB   | NBWB | SBL   | SBT  |
| Capacity (veh/h)         | -      | -      | 588    | 1318 | -     | -    |
| HCM Lane V/C Ratio       | -      | -      | 0.102  | 0.06 | -     | -    |
| HCM Control Delay (s)    | -      | -      | 11.8   | 7.9  | 0     | 0    |
| HCM Lane LOS             | -      | -      | B      | A    | A     | A    |
| HCM 95th %tile Q(veh)    | -      | -      | 0.3    | 0.2  | -     | -    |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |      | ↔    |      | ↔    | ↕    |      | ↔    | ↕    |      |
| Traffic Volume (veh/h)       | 17                                                                                 | 35   | 27   | 60   | 29   | 23   | 32   | 696  | 94   | 39   | 673  | 16   |
| Future Volume (veh/h)        | 17                                                                                 | 35   | 27   | 60   | 29   | 23   | 32   | 696  | 94   | 39   | 673  | 16   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        | No                                                                                 |      |      | No   |      |      | No   |      |      | No   |      |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900 | 1900 | 1900 | 1856 | 1885 | 1885 | 1826 | 1856 | 1856 |
| Adj Flow Rate, veh/h         | 20                                                                                 | 52   | 32   | 88   | 36   | 28   | 37   | 757  | 121  | 53   | 732  | 24   |
| Peak Hour Factor             | 0.85                                                                               | 0.67 | 0.84 | 0.68 | 0.81 | 0.82 | 0.86 | 0.92 | 0.78 | 0.73 | 0.92 | 0.67 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 3    | 1    | 1    | 5    | 3    | 3    |
| Cap, veh/h                   | 60                                                                                 | 124  | 66   | 145  | 49   | 33   | 559  | 2161 | 345  | 498  | 2454 | 80   |
| Arrive On Green              | 0.12                                                                               | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.03 | 0.70 | 0.70 | 0.04 | 0.70 | 0.70 |
| Sat Flow, veh/h              | 210                                                                                | 1011 | 543  | 808  | 399  | 273  | 1767 | 3093 | 494  | 1739 | 3484 | 114  |
| Grp Volume(v), veh/h         | 104                                                                                | 0    | 0    | 152  | 0    | 0    | 37   | 438  | 440  | 53   | 370  | 386  |
| Grp Sat Flow(s),veh/h/ln     | 1763                                                                               | 0    | 0    | 1480 | 0    | 0    | 1767 | 1791 | 1796 | 1739 | 1763 | 1835 |
| Q Serve(g_s), s              | 0.0                                                                                | 0.0  | 0.0  | 5.8  | 0.0  | 0.0  | 0.7  | 12.2 | 12.2 | 1.0  | 9.8  | 9.8  |
| Cycle Q Clear(g_c), s        | 6.7                                                                                | 0.0  | 0.0  | 12.6 | 0.0  | 0.0  | 0.7  | 12.2 | 12.2 | 1.0  | 9.8  | 9.8  |
| Prop In Lane                 | 0.19                                                                               |      | 0.31 | 0.58 |      | 0.18 | 1.00 |      | 0.28 | 1.00 |      | 0.06 |
| Lane Grp Cap(c), veh/h       | 250                                                                                | 0    | 0    | 227  | 0    | 0    | 559  | 1251 | 1255 | 498  | 1242 | 1292 |
| V/C Ratio(X)                 | 0.42                                                                               | 0.00 | 0.00 | 0.67 | 0.00 | 0.00 | 0.07 | 0.35 | 0.35 | 0.11 | 0.30 | 0.30 |
| Avail Cap(c_a), veh/h        | 503                                                                                | 0    | 0    | 450  | 0    | 0    | 774  | 1251 | 1255 | 701  | 1242 | 1292 |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 51.1                                                                               | 0.0  | 0.0  | 53.6 | 0.0  | 0.0  | 4.8  | 7.5  | 7.5  | 5.0  | 6.9  | 6.9  |
| Incr Delay (d2), s/veh       | 1.2                                                                                | 0.0  | 0.0  | 3.8  | 0.0  | 0.0  | 0.0  | 0.8  | 0.8  | 0.1  | 0.6  | 0.6  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 3.1                                                                                | 0.0  | 0.0  | 4.8  | 0.0  | 0.0  | 0.2  | 4.7  | 4.7  | 0.3  | 3.7  | 3.8  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 52.3                                                                               | 0.0  | 0.0  | 57.4 | 0.0  | 0.0  | 4.8  | 8.3  | 8.3  | 5.1  | 7.5  | 7.5  |
| LnGrp LOS                    | D                                                                                  | A    | A    | E    | A    | A    | A    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h          | 104                                                                                |      |      | 152  |      |      | 915  |      |      | 809  |      |      |
| Approach Delay, s/veh        | 52.3                                                                               |      |      | 57.4 |      |      | 8.1  |      |      | 7.4  |      |      |
| Approach LOS                 | D                                                                                  |      |      | E    |      |      | A    |      |      | A    |      |      |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 9.7                                                                                | 94.0 |      | 21.2 | 10.4 | 93.3 |      | 21.2 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.4                                                                                | 6.0  |      | 5.9  | 5.4  | 6.0  |      | 5.9  |      |      |      |      |
| Max Green Setting (Gmax), s  | 9.6                                                                                | 54.0 |      | 34.1 | 19.6 | 54.0 |      | 34.1 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 2.7                                                                                | 11.8 |      | 8.7  | 3.0  | 14.2 |      | 14.6 |      |      |      |      |
| Green Ext Time (p_c), s      | 0.0                                                                                | 11.4 |      | 0.5  | 0.1  | 13.8 |      | 0.8  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           | 13.9                                                                               |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  | B                                                                                  |      |      |      |      |      |      |      |      |      |      |      |

| Intersection             |                                                                                   |        |      |                                                                                   |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 1.7                                                                               |        |      |                                                                                   |      |                                                                                   |
| Movement                 | EBT                                                                               | EBR    | WBL  | WBT                                                                               | NBL  | NBR                                                                               |
| Lane Configurations      |  |        |      |  |      |  |
| Traffic Vol, veh/h       | 61                                                                                | 8      | 8    | 84                                                                                | 9    | 8                                                                                 |
| Future Vol, veh/h        | 61                                                                                | 8      | 8    | 84                                                                                | 9    | 8                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0    | 0                                                                                 | 0    | 0                                                                                 |
| Sign Control             | Free                                                                              | Free   | Free | Free                                                                              | Stop | Stop                                                                              |
| RT Channelized           | -                                                                                 | None   | -    | None                                                                              | -    | None                                                                              |
| Storage Length           | -                                                                                 | -      | -    | -                                                                                 | 0    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -      | -    | 0                                                                                 | 0    | -                                                                                 |
| Grade, %                 | 0                                                                                 | -      | -    | 0                                                                                 | 0    | -                                                                                 |
| Peak Hour Factor         | 76                                                                                | 40     | 50   | 81                                                                                | 56   | 50                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 2      | 0    | 1                                                                                 | 0    | 0                                                                                 |
| Mvmt Flow                | 80                                                                                | 20     | 16   | 104                                                                               | 16   | 16                                                                                |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Major/Minor              | Major1                                                                            | Major2 |      | Minor1                                                                            |      |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0      | 100  | 0                                                                                 | 226  | 90                                                                                |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 90   | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 136  | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -      | 4.1  | -                                                                                 | 6.4  | 6.2                                                                               |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -    | -                                                                                 | 5.4  | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -    | -                                                                                 | 5.4  | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -      | 2.2  | -                                                                                 | 3.5  | 3.3                                                                               |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1505 | -                                                                                 | 767  | 973                                                                               |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 939  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 895  | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -      |      | -                                                                                 |      |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1505 | -                                                                                 | 759  | 973                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -    | -                                                                                 | 759  | -                                                                                 |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 929  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 895  | -                                                                                 |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Approach                 | EB                                                                                | WB     |      | NB                                                                                |      |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 | 1      |      | 9.4                                                                               |      |                                                                                   |
| HCM LOS                  | A                                                                                 |        |      |                                                                                   |      |                                                                                   |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR  | WBL                                                                               | WBT  |                                                                                   |
| Capacity (veh/h)         | 853                                                                               | -      | -    | 1505                                                                              | -    |                                                                                   |
| HCM Lane V/C Ratio       | 0.038                                                                             | -      | -    | 0.011                                                                             | -    |                                                                                   |
| HCM Control Delay (s)    | 9.4                                                                               | -      | -    | 7.4                                                                               | 0    |                                                                                   |
| HCM Lane LOS             | A                                                                                 | -      | -    | A                                                                                 | A    |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.1                                                                               | -      | -    | 0                                                                                 | -    |                                                                                   |

| Intersection             |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4.6    |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL  | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |       |        |  |      |      |  |      |
| Traffic Vol, veh/h       | 12     | 15                                                                                | 42     | 11    | 24                                                                                | 2     | 69     | 236                                                                               | 37   | 7    | 163                                                                                 | 15   |
| Future Vol, veh/h        | 12     | 15                                                                                | 42     | 11    | 24                                                                                | 2     | 69     | 236                                                                               | 37   | 7    | 163                                                                                 | 15   |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -    | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Peak Hour Factor         | 75     | 63                                                                                | 55     | 46    | 60                                                                                | 50    | 86     | 94                                                                                | 84   | 44   | 82                                                                                  | 63   |
| Heavy Vehicles, %        | 8      | 0                                                                                 | 0      | 0     | 4                                                                                 | 0     | 0      | 1                                                                                 | 0    | 0    | 3                                                                                   | 0    |
| Mvmt Flow                | 16     | 24                                                                                | 76     | 24    | 40                                                                                | 4     | 80     | 251                                                                               | 44   | 16   | 199                                                                                 | 24   |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |      |                                                                                     |      |
| Conflicting Flow All     | 698    | 698                                                                               | 211    | 726   | 688                                                                               | 273   | 223    | 0                                                                                 | 0    | 295  | 0                                                                                   | 0    |
| Stage 1                  | 243    | 243                                                                               | -      | 433   | 433                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                  | 455    | 455                                                                               | -      | 293   | 255                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Critical Hdwy            | 7.18   | 6.5                                                                               | 6.2    | 7.1   | 6.54                                                                              | 6.2   | 4.1    | -                                                                                 | -    | 4.1  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.18   | 5.5                                                                               | -      | 6.1   | 5.54                                                                              | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.18   | 5.5                                                                               | -      | 6.1   | 5.54                                                                              | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Follow-up Hdwy           | 3.572  | 4                                                                                 | 3.3    | 3.5   | 4.036                                                                             | 3.3   | 2.2    | -                                                                                 | -    | 2.2  | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 347    | 367                                                                               | 834    | 343   | 367                                                                               | 771   | 1358   | -                                                                                 | -    | 1278 | -                                                                                   | -    |
| Stage 1                  | 747    | 708                                                                               | -      | 605   | 578                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                  | 573    | 572                                                                               | -      | 719   | 693                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |      | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 294    | 336                                                                               | 834    | 276   | 336                                                                               | 771   | 1358   | -                                                                                 | -    | 1278 | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 294    | 336                                                                               | -      | 276   | 336                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 1                  | 694    | 698                                                                               | -      | 562   | 537                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
| Stage 2                  | 490    | 531                                                                               | -      | 622   | 683                                                                               | -     | -      | -                                                                                 | -    | -    | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |      |                                                                                     |      |
| HCM Control Delay, s     | 3.6    |                                                                                   | 19.1   |       | 1.7                                                                               |       | 0.5    |                                                                                   |      |      |                                                                                     |      |
| HCM LOS                  | B      |                                                                                   | C      |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |      |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn  | WBLn                                                                              | WBLn1 | SBL    | SBT                                                                               | SBR  |      |                                                                                     |      |
| Capacity (veh/h)         | 1358   | -                                                                                 | -      | 536   | 322                                                                               | 1278  | -      | -                                                                                 | -    |      |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.059  | -                                                                                 | -      | 0.217 | 0.211                                                                             | 0.012 | -      | -                                                                                 | -    |      |                                                                                     |      |
| HCM Control Delay (s)    | 7.8    | 0                                                                                 | -      | 13.6  | 19.1                                                                              | 7.9   | 0      | -                                                                                 | -    |      |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | B     | C                                                                                 | A     | A      | -                                                                                 | -    |      |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0.2    | -                                                                                 | -      | 0.8   | 0.8                                                                               | 0     | -      | -                                                                                 | -    |      |                                                                                     |      |

# **AM Phase I**



| Intersection             |        |        |        |       |       |      |
|--------------------------|--------|--------|--------|-------|-------|------|
| Int Delay, s/veh         | 4.1    |        |        |       |       |      |
| Movement                 | WBL    | WBR    | NBT    | NBR   | SBL   | SBT  |
| Lane Configurations      | W      | W      | T      | T     | T     | T    |
| Traffic Vol, veh/h       | 94     | 65     | 114    | 92    | 58    | 204  |
| Future Vol, veh/h        | 94     | 65     | 114    | 92    | 58    | 204  |
| Conflicting Peds, #/hr   | 0      | 0      | 0      | 0     | 0     | 0    |
| Sign Control             | Stop   | Stop   | Free   | Free  | Free  | Free |
| RT Channelized           | -      | None   | -      | None  | -     | None |
| Storage Length           | -      | -      | -      | -     | -     | -    |
| Veh in Median Storage, # | -      | 0      | -      | -     | -     | 0    |
| Grade, %                 | 0      | -      | 0      | -     | -     | 0    |
| Peak Hour Factor         | 92     | 92     | 92     | 92    | 92    | 92   |
| Heavy Vehicles, %        | 0      | 7      | 3      | 6     | 8     | 3    |
| Mvmt Flow                | 102    | 71     | 124    | 100   | 63    | 222  |
| Major/Minor              | Minor1 | Major1 | Major2 |       |       |      |
| Conflicting Flow All     | 522    | 174    | 0      | 0     | 224   | 0    |
| Stage 1                  | 174    | -      | -      | -     | -     | -    |
| Stage 2                  | 348    | -      | -      | -     | -     | -    |
| Critical Hdwy            | 6.4    | 6.27   | -      | -     | 4.18  | -    |
| Critical Hdwy Stg 1      | 5.4    | -      | -      | -     | -     | -    |
| Critical Hdwy Stg 2      | 5.4    | -      | -      | -     | -     | -    |
| Follow-up Hdwy           | 3.5    | 3.363  | -      | -     | 2.272 | -    |
| Pot Cap-1 Maneuver       | 519    | 857    | -      | -     | 1310  | -    |
| Stage 1                  | 861    | -      | -      | -     | -     | -    |
| Stage 2                  | 719    | -      | -      | -     | -     | -    |
| Platoon blocked, %       |        |        | -      | -     |       | -    |
| Mov Cap-1 Maneuver       | 490    | 857    | -      | -     | 1310  | -    |
| Mov Cap-2 Maneuver       | 490    | -      | -      | -     | -     | -    |
| Stage 1                  | 814    | -      | -      | -     | -     | -    |
| Stage 2                  | 719    | -      | -      | -     | -     | -    |
| Approach                 | WB     | NB     | SB     |       |       |      |
| HCM Control Delay, s     | 3.5    | 0      | 1.7    |       |       |      |
| HCM LOS                  | B      |        |        |       |       |      |
| Minor Lane/Major Mvmt    | NBT    | NB     | WBLn1  | SBL   | SBT   |      |
| Capacity (veh/h)         | -      | -      | 594    | 1310  | -     |      |
| HCM Lane V/C Ratio       | -      | -      | 0.291  | 0.048 | -     |      |
| HCM Control Delay (s)    | -      | -      | 13.5   | 7.9   | 0     |      |
| HCM Lane LOS             | -      | -      | B      | A     | A     |      |
| HCM 95th %tile Q(veh)    | -      | -      | 1.2    | 0.2   | -     |      |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 14                                                                                | 57                                                                                | 67                                                                                | 230                                                                               | 74                                                                                | 59                                                                                | 26                                                                                  | 623                                                                                 | 55                                                                                  | 27                                                                                  | 1052                                                                                | 18                                                                                  |
| Future Volume (veh/h)        | 14                                                                                | 57                                                                                | 67                                                                                | 230                                                                               | 74                                                                                | 59                                                                                | 26                                                                                  | 623                                                                                 | 55                                                                                  | 27                                                                                  | 1052                                                                                | 18                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1841                                                                              | 1841                                                                              | 1841                                                                              | 1811                                                                                | 1767                                                                                | 1767                                                                                | 1900                                                                                | 1870                                                                                | 1870                                                                                |
| Adj Flow Rate, veh/h         | 15                                                                                | 62                                                                                | 73                                                                                | 250                                                                               | 80                                                                                | 64                                                                                | 28                                                                                  | 677                                                                                 | 60                                                                                  | 29                                                                                  | 1143                                                                                | 20                                                                                  |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 6                                                                                   | 9                                                                                   | 9                                                                                   | 0                                                                                   | 2                                                                                   | 2                                                                                   |
| Cap, veh/h                   | 77                                                                                | 254                                                                               | 264                                                                               | 352                                                                               | 88                                                                                | 70                                                                                | 277                                                                                 | 1194                                                                                | 106                                                                                 | 395                                                                                 | 1368                                                                                | 24                                                                                  |
| Arrive On Green              | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.08                                                                                | 0.38                                                                                | 0.38                                                                                | 0.08                                                                                | 0.38                                                                                | 0.38                                                                                |
| Sat Flow, veh/h              | 81                                                                                | 825                                                                               | 859                                                                               | 890                                                                               | 287                                                                               | 228                                                                               | 1725                                                                                | 3119                                                                                | 276                                                                                 | 1810                                                                                | 3573                                                                                | 63                                                                                  |
| Grp Volume(v), veh/h         | 150                                                                               | 0                                                                                 | 0                                                                                 | 394                                                                               | 0                                                                                 | 0                                                                                 | 28                                                                                  | 364                                                                                 | 373                                                                                 | 29                                                                                  | 568                                                                                 | 595                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1764                                                                              | 0                                                                                 | 0                                                                                 | 1405                                                                              | 0                                                                                 | 0                                                                                 | 1725                                                                                | 1678                                                                                | 1717                                                                                | 1810                                                                                | 1777                                                                                | 1859                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 15.3                                                                              | 0.0                                                                               | 0.0                                                                               | 0.7                                                                                 | 12.9                                                                                | 12.9                                                                                | 0.7                                                                                 | 21.8                                                                                | 21.8                                                                                |
| Cycle Q Clear(g_c), s        | 4.9                                                                               | 0.0                                                                               | 0.0                                                                               | 20.2                                                                              | 0.0                                                                               | 0.0                                                                               | 0.7                                                                                 | 12.9                                                                                | 12.9                                                                                | 0.7                                                                                 | 21.8                                                                                | 21.8                                                                                |
| Prop In Lane                 | 0.10                                                                              |                                                                                   | 0.49                                                                              | 0.63                                                                              |                                                                                   | 0.16                                                                              | 1.00                                                                                |                                                                                     | 0.16                                                                                | 1.00                                                                                |                                                                                     | 0.03                                                                                |
| Lane Grp Cap(c), veh/h       | 595                                                                               | 0                                                                                 | 0                                                                                 | 510                                                                               | 0                                                                                 | 0                                                                                 | 277                                                                                 | 643                                                                                 | 657                                                                                 | 395                                                                                 | 680                                                                                 | 712                                                                                 |
| V/C Ratio(X)                 | 0.25                                                                              | 0.00                                                                              | 0.00                                                                              | 0.77                                                                              | 0.00                                                                              | 0.00                                                                              | 0.10                                                                                | 0.57                                                                                | 0.57                                                                                | 0.07                                                                                | 0.84                                                                                | 0.84                                                                                |
| Avail Cap(c_a), veh/h        | 661                                                                               | 0                                                                                 | 0                                                                                 | 565                                                                               | 0                                                                                 | 0                                                                                 | 279                                                                                 | 681                                                                                 | 696                                                                                 | 397                                                                                 | 720                                                                                 | 754                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 19.7                                                                              | 0.0                                                                               | 0.0                                                                               | 24.8                                                                              | 0.0                                                                               | 0.0                                                                               | 14.4                                                                                | 18.3                                                                                | 18.3                                                                                | 12.2                                                                                | 21.1                                                                                | 21.1                                                                                |
| Incr Delay (d2), s/veh       | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 6.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 1.8                                                                                 | 1.8                                                                                 | 0.1                                                                                 | 9.2                                                                                 | 8.9                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 1.9                                                                               | 0.0                                                                               | 0.0                                                                               | 6.8                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                                 | 4.4                                                                                 | 4.6                                                                                 | 0.2                                                                                 | 9.2                                                                                 | 9.5                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 20.0                                                                              | 0.0                                                                               | 0.0                                                                               | 31.0                                                                              | 0.0                                                                               | 0.0                                                                               | 14.5                                                                                | 20.1                                                                                | 20.1                                                                                | 12.3                                                                                | 30.3                                                                                | 29.9                                                                                |
| LnGrp LOS                    | B                                                                                 | A                                                                                 | A                                                                                 | C                                                                                 | A                                                                                 | A                                                                                 | B                                                                                   | C                                                                                   | C                                                                                   | B                                                                                   | C                                                                                   | C                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 150                                                                               |                                                                                   |                                                                                   | 394                                                                               |                                                                                   |                                                                                     | 765                                                                                 |                                                                                     |                                                                                     | 1192                                                                                |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 20.0                                                                              |                                                                                   |                                                                                   | 31.0                                                                              |                                                                                   |                                                                                     | 19.9                                                                                |                                                                                     |                                                                                     | 29.7                                                                                |                                                                                     |
| Approach LOS                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.4                                                                              | 34.8                                                                              |                                                                                   | 29.0                                                                              | 11.4                                                                              | 34.8                                                                              |                                                                                     | 29.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.4                                                                               | 6.0                                                                               |                                                                                   | 5.9                                                                               | 5.4                                                                               | 6.0                                                                               |                                                                                     | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.1                                                                               | 30.5                                                                              |                                                                                   | 26.1                                                                              | 6.1                                                                               | 30.5                                                                              |                                                                                     | 26.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.7                                                                               | 23.8                                                                              |                                                                                   | 6.9                                                                               | 2.7                                                                               | 14.9                                                                              |                                                                                     | 22.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 5.0                                                                               |                                                                                   | 0.8                                                                               | 0.0                                                                               | 6.4                                                                               |                                                                                     | 0.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 26.3                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection              |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|---------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh          | 2                                                                                 |      |      |                                                                                   |                                                                                   |      |
| Movement                  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
| Lane Configurations       |  |      |      |  |  |      |
| Traffic Vol, veh/h        | 116                                                                               | 11   | 26   | 142                                                                               | 31                                                                                | 14   |
| Future Vol, veh/h         | 116                                                                               | 11   | 26   | 142                                                                               | 31                                                                                | 14   |
| Conflicting Peds, #/hr    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control              | Free                                                                              | Free | Free | Free                                                                              | Stop                                                                              | Stop |
| RT Channelized            | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length            | -                                                                                 | -    | -    | -                                                                                 | 0                                                                                 | -    |
| Veh in Median Storage, #0 | -                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                  | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor          | 92                                                                                | 92   | 92   | 92                                                                                | 92                                                                                | 92   |
| Heavy Vehicles, %         | 0                                                                                 | 4    | 22   | 3                                                                                 | 0                                                                                 | 20   |
| Mvmt Flow                 | 126                                                                               | 12   | 28   | 154                                                                               | 34                                                                                | 15   |

| Major/Minor          | Major1 | Major2 | Minor1 |   |     |      |
|----------------------|--------|--------|--------|---|-----|------|
| Conflicting Flow All | 0      | 0      | 138    | 0 | 342 | 132  |
| Stage 1              | -      | -      | -      | - | 132 | -    |
| Stage 2              | -      | -      | -      | - | 210 | -    |
| Critical Hdwy        | -      | -      | 4.32   | - | 6.4 | 6.4  |
| Critical Hdwy Stg 1  | -      | -      | -      | - | 5.4 | -    |
| Critical Hdwy Stg 2  | -      | -      | -      | - | 5.4 | -    |
| Follow-up Hdwy       | -      | -      | 2.398  | - | 3.5 | 3.48 |
| Pot Cap-1 Maneuver   | -      | -      | 1332   | - | 658 | 871  |
| Stage 1              | -      | -      | -      | - | 899 | -    |
| Stage 2              | -      | -      | -      | - | 830 | -    |
| Platoon blocked, %   | -      | -      | -      | - | -   | -    |
| Mov Cap-1 Maneuver   | -      | -      | 1332   | - | 643 | 871  |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | 643 | -    |
| Stage 1              | -      | -      | -      | - | 878 | -    |
| Stage 2              | -      | -      | -      | - | 830 | -    |

| Approach             | EB | WB  | NB   |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0  | 1.2 | 10.5 |
| HCM LOS              |    |     | B    |

| Minor Lane/Major MvmtNBLn1 | EBT  | EBR | WBL | WBT   |
|----------------------------|------|-----|-----|-------|
| Capacity (veh/h)           | 700  | -   | -   | 1332  |
| HCM Lane V/C Ratio         | 0.07 | -   | -   | 0.021 |
| HCM Control Delay (s)      | 10.5 | -   | -   | 7.8   |
| HCM Lane LOS               | B    | -   | -   | A     |
| HCM 95th %tile Q(veh)      | 0.2  | -   | -   | 0.1   |

| Intersection              |        |      |        |       |        |       |        |      |      |      |      |      |
|---------------------------|--------|------|--------|-------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 6.4    |      |        |       |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |       | ↕      |       |        | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 34     | 19   | 129    | 29    | 55     | 4     | 55     | 113  | 3    | 3    | 238  | 21   |
| Future Vol, veh/h         | 34     | 19   | 129    | 29    | 55     | 4     | 55     | 113  | 3    | 3    | 238  | 21   |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -     | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -    | -      | -     | -      | -     | -      | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92     | 92   | 92     | 92    | 92     | 92    | 92     | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0      | 0    | 2      | 2     | 2      | 2     | 6      | 6    | 33   | 50   | 2    | 0    |
| Mvmt Flow                 | 37     | 21   | 140    | 32    | 60     | 4     | 60     | 123  | 3    | 3    | 259  | 23   |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |      | Minor1 |       | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 554    | 523  | 271    | 602   | 533    | 125   | 282    | 0    | 0    | 126  | 0    | 0    |
| Stage 1                   | 277    | 277  | -      | 245   | 245    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 277    | 246  | -      | 357   | 288    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.1    | 6.5  | 6.22   | 7.12  | 6.52   | 6.22  | 4.16   | -    | -    | 4.6  | -    | -    |
| Critical Hdwy Stg 1       | 6.1    | 5.5  | -      | 6.12  | 5.52   | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.1    | 5.5  | -      | 6.12  | 5.52   | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.5    | 4    | 3.318  | 3.518 | 4.018  | 3.318 | 2.254  | -    | -    | 2.65 | -    | -    |
| Pot Cap-1 Maneuver        | 446    | 462  | 768    | 412   | 453    | 926   | 1258   | -    | -    | 1211 | -    | -    |
| Stage 1                   | 734    | 685  | -      | 759   | 703    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 734    | 706  | -      | 661   | 674    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |      |        |       |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 380    | 437  | 768    | 311   | 429    | 926   | 1258   | -    | -    | 1211 | -    | -    |
| Mov Cap-2 Maneuver        | 380    | 437  | -      | 311   | 429    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 697    | 683  | -      | 720   | 667    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 631    | 670  | -      | 522   | 672    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Approach                  | EB     |      | WB     |       | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 3.8    |      | 17.2   |       | 2.6    |       | 0.1    |      |      |      |      |      |
| HCM LOS                   | B      |      | C      |       |        |       |        |      |      |      |      |      |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn  | WBLn1  | SBL   | SBT    | SBR  |      |      |      |      |
| Capacity (veh/h)          | 1258   | -    | -      | 605   | 390    | 1211  | -      | -    |      |      |      |      |
| HCM Lane V/C Ratio        | 0.048  | -    | -      | 0.327 | 0.245  | 0.003 | -      | -    |      |      |      |      |
| HCM Control Delay (s)     | 8      | 0    | -      | 13.8  | 17.2   | 8     | 0      | -    |      |      |      |      |
| HCM Lane LOS              | A      | A    | -      | B     | C      | A     | A      | -    |      |      |      |      |
| HCM 95th %tile Q(veh)     | 0.1    | -    | -      | 1.4   | 1      | 0     | -      | -    |      |      |      |      |

# **AM Phase I Modified**



| Intersection             |        |        |        |       |       |      |
|--------------------------|--------|--------|--------|-------|-------|------|
| Int Delay, s/veh         | 4.1    |        |        |       |       |      |
| Movement                 | WBL    | WBR    | NBT    | NBR   | SBL   | SBT  |
| Lane Configurations      | W      | W      | T      | T     | T     | T    |
| Traffic Vol, veh/h       | 94     | 65     | 114    | 92    | 58    | 204  |
| Future Vol, veh/h        | 94     | 65     | 114    | 92    | 58    | 204  |
| Conflicting Peds, #/hr   | 0      | 0      | 0      | 0     | 0     | 0    |
| Sign Control             | Stop   | Stop   | Free   | Free  | Free  | Free |
| RT Channelized           | -      | None   | -      | None  | -     | None |
| Storage Length           | -      | -      | -      | -     | -     | -    |
| Veh in Median Storage, # | -      | 0      | -      | -     | -     | 0    |
| Grade, %                 | 0      | -      | 0      | -     | -     | 0    |
| Peak Hour Factor         | 92     | 92     | 92     | 92    | 92    | 92   |
| Heavy Vehicles, %        | 0      | 7      | 3      | 6     | 8     | 3    |
| Mvmt Flow                | 102    | 71     | 124    | 100   | 63    | 222  |
| Major/Minor              | Minor1 | Major1 | Major2 |       |       |      |
| Conflicting Flow All     | 522    | 174    | 0      | 0     | 224   | 0    |
| Stage 1                  | 174    | -      | -      | -     | -     | -    |
| Stage 2                  | 348    | -      | -      | -     | -     | -    |
| Critical Hdwy            | 6.4    | 6.27   | -      | -     | 4.18  | -    |
| Critical Hdwy Stg 1      | 5.4    | -      | -      | -     | -     | -    |
| Critical Hdwy Stg 2      | 5.4    | -      | -      | -     | -     | -    |
| Follow-up Hdwy           | 3.5    | 3.363  | -      | -     | 2.272 | -    |
| Pot Cap-1 Maneuver       | 519    | 857    | -      | -     | 1310  | -    |
| Stage 1                  | 861    | -      | -      | -     | -     | -    |
| Stage 2                  | 719    | -      | -      | -     | -     | -    |
| Platoon blocked, %       |        |        | -      | -     |       | -    |
| Mov Cap-1 Maneuver 490   | 857    | -      | -      | -     | 1310  | -    |
| Mov Cap-2 Maneuver 490   | -      | -      | -      | -     | -     | -    |
| Stage 1                  | 814    | -      | -      | -     | -     | -    |
| Stage 2                  | 719    | -      | -      | -     | -     | -    |
| Approach                 | WB     | NB     | SB     |       |       |      |
| HCM Control Delay, s     | 3.5    | 0      | 1.7    |       |       |      |
| HCM LOS                  | B      |        |        |       |       |      |
| Minor Lane/Major Mvmt    | NBT    | NBWB   | NBWB   | NBWB  | SBL   | SBT  |
| Capacity (veh/h)         | -      | -      | 594    | 1310  | -     | -    |
| HCM Lane V/C Ratio       | -      | -      | 0.291  | 0.048 | -     | -    |
| HCM Control Delay (s)    | -      | -      | 13.5   | 7.9   | 0     | 0    |
| HCM Lane LOS             | -      | -      | B      | A     | A     | A    |
| HCM 95th %tile Q(veh)    | -      | -      | 1.2    | 0.2   | -     | -    |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 14                                                                                | 57                                                                                | 67                                                                                | 230                                                                               | 74                                                                                | 59                                                                                | 26                                                                                  | 623                                                                                 | 55                                                                                  | 27                                                                                  | 1052                                                                                | 18                                                                                  |
| Future Volume (veh/h)        | 14                                                                                | 57                                                                                | 67                                                                                | 230                                                                               | 74                                                                                | 59                                                                                | 26                                                                                  | 623                                                                                 | 55                                                                                  | 27                                                                                  | 1052                                                                                | 18                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1841                                                                              | 1841                                                                              | 1841                                                                              | 1811                                                                                | 1767                                                                                | 1767                                                                                | 1900                                                                                | 1870                                                                                | 1870                                                                                |
| Adj Flow Rate, veh/h         | 15                                                                                | 62                                                                                | 73                                                                                | 250                                                                               | 80                                                                                | 64                                                                                | 28                                                                                  | 677                                                                                 | 60                                                                                  | 29                                                                                  | 1143                                                                                | 20                                                                                  |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 6                                                                                   | 9                                                                                   | 9                                                                                   | 0                                                                                   | 2                                                                                   | 2                                                                                   |
| Cap, veh/h                   | 77                                                                                | 254                                                                               | 264                                                                               | 352                                                                               | 88                                                                                | 70                                                                                | 277                                                                                 | 1194                                                                                | 106                                                                                 | 395                                                                                 | 1368                                                                                | 24                                                                                  |
| Arrive On Green              | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.31                                                                              | 0.08                                                                                | 0.38                                                                                | 0.38                                                                                | 0.08                                                                                | 0.38                                                                                | 0.38                                                                                |
| Sat Flow, veh/h              | 81                                                                                | 825                                                                               | 859                                                                               | 890                                                                               | 287                                                                               | 228                                                                               | 1725                                                                                | 3119                                                                                | 276                                                                                 | 1810                                                                                | 3573                                                                                | 63                                                                                  |
| Grp Volume(v), veh/h         | 150                                                                               | 0                                                                                 | 0                                                                                 | 394                                                                               | 0                                                                                 | 0                                                                                 | 28                                                                                  | 364                                                                                 | 373                                                                                 | 29                                                                                  | 568                                                                                 | 595                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1764                                                                              | 0                                                                                 | 0                                                                                 | 1405                                                                              | 0                                                                                 | 0                                                                                 | 1725                                                                                | 1678                                                                                | 1717                                                                                | 1810                                                                                | 1777                                                                                | 1859                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 15.3                                                                              | 0.0                                                                               | 0.0                                                                               | 0.7                                                                                 | 12.9                                                                                | 12.9                                                                                | 0.7                                                                                 | 21.8                                                                                | 21.8                                                                                |
| Cycle Q Clear(g_c), s        | 4.9                                                                               | 0.0                                                                               | 0.0                                                                               | 20.2                                                                              | 0.0                                                                               | 0.0                                                                               | 0.7                                                                                 | 12.9                                                                                | 12.9                                                                                | 0.7                                                                                 | 21.8                                                                                | 21.8                                                                                |
| Prop In Lane                 | 0.10                                                                              |                                                                                   | 0.49                                                                              | 0.63                                                                              |                                                                                   | 0.16                                                                              | 1.00                                                                                |                                                                                     | 0.16                                                                                | 1.00                                                                                |                                                                                     | 0.03                                                                                |
| Lane Grp Cap(c), veh/h       | 595                                                                               | 0                                                                                 | 0                                                                                 | 510                                                                               | 0                                                                                 | 0                                                                                 | 277                                                                                 | 643                                                                                 | 657                                                                                 | 395                                                                                 | 680                                                                                 | 712                                                                                 |
| V/C Ratio(X)                 | 0.25                                                                              | 0.00                                                                              | 0.00                                                                              | 0.77                                                                              | 0.00                                                                              | 0.00                                                                              | 0.10                                                                                | 0.57                                                                                | 0.57                                                                                | 0.07                                                                                | 0.84                                                                                | 0.84                                                                                |
| Avail Cap(c_a), veh/h        | 661                                                                               | 0                                                                                 | 0                                                                                 | 565                                                                               | 0                                                                                 | 0                                                                                 | 279                                                                                 | 681                                                                                 | 696                                                                                 | 397                                                                                 | 720                                                                                 | 754                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 19.7                                                                              | 0.0                                                                               | 0.0                                                                               | 24.8                                                                              | 0.0                                                                               | 0.0                                                                               | 14.4                                                                                | 18.3                                                                                | 18.3                                                                                | 12.2                                                                                | 21.1                                                                                | 21.1                                                                                |
| Incr Delay (d2), s/veh       | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 6.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 1.8                                                                                 | 1.8                                                                                 | 0.1                                                                                 | 9.2                                                                                 | 8.9                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 1.9                                                                               | 0.0                                                                               | 0.0                                                                               | 6.8                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                                 | 4.4                                                                                 | 4.6                                                                                 | 0.2                                                                                 | 9.2                                                                                 | 9.5                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 20.0                                                                              | 0.0                                                                               | 0.0                                                                               | 31.0                                                                              | 0.0                                                                               | 0.0                                                                               | 14.5                                                                                | 20.1                                                                                | 20.1                                                                                | 12.3                                                                                | 30.3                                                                                | 29.9                                                                                |
| LnGrp LOS                    | B                                                                                 | A                                                                                 | A                                                                                 | C                                                                                 | A                                                                                 | A                                                                                 | B                                                                                   | C                                                                                   | C                                                                                   | B                                                                                   | C                                                                                   | C                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 150                                                                               |                                                                                   |                                                                                   | 394                                                                               |                                                                                   |                                                                                     | 765                                                                                 |                                                                                     |                                                                                     | 1192                                                                                |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 20.0                                                                              |                                                                                   |                                                                                   | 31.0                                                                              |                                                                                   |                                                                                     | 19.9                                                                                |                                                                                     |                                                                                     | 29.7                                                                                |                                                                                     |
| Approach LOS                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.4                                                                              | 34.8                                                                              |                                                                                   | 29.0                                                                              | 11.4                                                                              | 34.8                                                                              |                                                                                     | 29.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.4                                                                               | 6.0                                                                               |                                                                                   | 5.9                                                                               | 5.4                                                                               | 6.0                                                                               |                                                                                     | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.1                                                                               | 30.5                                                                              |                                                                                   | 26.1                                                                              | 6.1                                                                               | 30.5                                                                              |                                                                                     | 26.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.7                                                                               | 23.8                                                                              |                                                                                   | 6.9                                                                               | 2.7                                                                               | 14.9                                                                              |                                                                                     | 22.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 5.0                                                                               |                                                                                   | 0.8                                                                               | 0.0                                                                               | 6.4                                                                               |                                                                                     | 0.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 26.3                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |                                                                                   |        |       |                                                                                   |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 2                                                                                 |        |       |                                                                                   |      |                                                                                   |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL  | NBR                                                                               |
| Lane Configurations      |  |        |       |  |      |  |
| Traffic Vol, veh/h       | 116                                                                               | 11     | 26    | 142                                                                               | 31   | 14                                                                                |
| Future Vol, veh/h        | 116                                                                               | 11     | 26    | 142                                                                               | 31   | 14                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0    | 0                                                                                 |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop | Stop                                                                              |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -    | None                                                                              |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0    | -                                                                                 |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0    | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 4      | 22    | 3                                                                                 | 0    | 20                                                                                |
| Mvmt Flow                | 126                                                                               | 12     | 28    | 154                                                                               | 34   | 15                                                                                |
|                          |                                                                                   |        |       |                                                                                   |      |                                                                                   |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |      |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0      | 138   | 0                                                                                 | 342  | 132                                                                               |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 132  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 210  | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -      | 4.32  | -                                                                                 | 6.4  | 6.4                                                                               |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.4  | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.4  | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -      | 2.398 | -                                                                                 | 3.5  | 3.48                                                                              |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1332  | -                                                                                 | 658  | 871                                                                               |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 899  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 830  | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |      |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1332  | -                                                                                 | 643  | 871                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 643  | -                                                                                 |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 878  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 830  | -                                                                                 |
|                          |                                                                                   |        |       |                                                                                   |      |                                                                                   |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |      |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 | 1.2    |       | 10.5                                                                              |      |                                                                                   |
| HCM LOS                  | B                                                                                 |        |       |                                                                                   |      |                                                                                   |
|                          |                                                                                   |        |       |                                                                                   |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT  |                                                                                   |
| Capacity (veh/h)         | 700                                                                               | -      | -     | 1332                                                                              | -    |                                                                                   |
| HCM Lane V/C Ratio       | 0.07                                                                              | -      | -     | 0.021                                                                             | -    |                                                                                   |
| HCM Control Delay (s)    | 10.5                                                                              | -      | -     | 7.8                                                                               | 0    |                                                                                   |
| HCM Lane LOS             | B                                                                                 | -      | -     | A                                                                                 | A    |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.2                                                                               | -      | -     | 0.1                                                                               | -    |                                                                                   |

| Intersection              |        |      |        |       |        |       |        |      |      |      |      |      |
|---------------------------|--------|------|--------|-------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 6.4    |      |        |       |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |       | ↕      |       |        | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 34     | 19   | 129    | 29    | 55     | 4     | 55     | 113  | 3    | 3    | 238  | 21   |
| Future Vol, veh/h         | 34     | 19   | 129    | 29    | 55     | 4     | 55     | 113  | 3    | 3    | 238  | 21   |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -     | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -    | -      | -     | -      | -     | -      | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92     | 92   | 92     | 92    | 92     | 92    | 92     | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0      | 0    | 2      | 2     | 2      | 2     | 6      | 6    | 33   | 50   | 2    | 0    |
| Mvmt Flow                 | 37     | 21   | 140    | 32    | 60     | 4     | 60     | 123  | 3    | 3    | 259  | 23   |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |      | Minor1 |       | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 554    | 523  | 271    | 602   | 533    | 125   | 282    | 0    | 0    | 126  | 0    | 0    |
| Stage 1                   | 277    | 277  | -      | 245   | 245    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 277    | 246  | -      | 357   | 288    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.1    | 6.5  | 6.22   | 7.12  | 6.52   | 6.22  | 4.16   | -    | -    | 4.6  | -    | -    |
| Critical Hdwy Stg 1       | 6.1    | 5.5  | -      | 6.12  | 5.52   | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.1    | 5.5  | -      | 6.12  | 5.52   | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.5    | 4    | 3.318  | 3.518 | 4.018  | 3.318 | 2.254  | -    | -    | 2.65 | -    | -    |
| Pot Cap-1 Maneuver        | 446    | 462  | 768    | 412   | 453    | 926   | 1258   | -    | -    | 1211 | -    | -    |
| Stage 1                   | 734    | 685  | -      | 759   | 703    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 734    | 706  | -      | 661   | 674    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |      |        |       |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 380    | 437  | 768    | 311   | 429    | 926   | 1258   | -    | -    | 1211 | -    | -    |
| Mov Cap-2 Maneuver        | 380    | 437  | -      | 311   | 429    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 697    | 683  | -      | 720   | 667    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 631    | 670  | -      | 522   | 672    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Approach                  | EB     |      | WB     |       | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 3.8    |      | 17.2   |       | 2.6    |       | 0.1    |      |      |      |      |      |
| HCM LOS                   | B      |      | C      |       |        |       |        |      |      |      |      |      |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn  | WBLn1  | SBL   | SBT    | SBR  |      |      |      |      |
| Capacity (veh/h)          | 1258   | -    | -      | 605   | 390    | 1211  | -      | -    |      |      |      |      |
| HCM Lane V/C Ratio        | 0.048  | -    | -      | 0.327 | 0.245  | 0.003 | -      | -    |      |      |      |      |
| HCM Control Delay (s)     | 8      | 0    | -      | 13.8  | 17.2   | 8     | 0      | -    |      |      |      |      |
| HCM Lane LOS              | A      | A    | -      | B     | C      | A     | A      | -    |      |      |      |      |
| HCM 95th %tile Q(veh)     | 0.1    | -    | -      | 1.4   | 1      | 0     | -      | -    |      |      |      |      |

# PM Phase I



| Intersection             |        |        |        |       |       |      |
|--------------------------|--------|--------|--------|-------|-------|------|
| Int Delay, s/veh         | 3.5    |        |        |       |       |      |
| Movement                 | WBL    | WBR    | NBT    | NBR   | SBL   | SBT  |
| Lane Configurations      | W      | R      | T      | R     | L     | T    |
| Traffic Vol, veh/h       | 68     | 51     | 185    | 74    | 56    | 133  |
| Future Vol, veh/h        | 68     | 51     | 185    | 74    | 56    | 133  |
| Conflicting Peds, #/hr   | 0      | 0      | 0      | 0     | 0     | 0    |
| Sign Control             | Stop   | Stop   | Free   | Free  | Free  | Free |
| RT Channelized           | -      | None   | -      | None  | -     | None |
| Storage Length           | -      | -      | -      | -     | -     | -    |
| Veh in Median Storage, # | -      | 0      | -      | -     | -     | 0    |
| Grade, %                 | 0      | -      | 0      | -     | -     | 0    |
| Peak Hour Factor         | 92     | 92     | 92     | 92    | 92    | 92   |
| Heavy Vehicles, %        | 3      | 9      | 3      | 4     | 9     | 2    |
| Mvmt Flow                | 74     | 55     | 201    | 80    | 61    | 145  |
| Major/Minor              | Minor1 | Major1 | Major2 |       |       |      |
| Conflicting Flow All     | 508    | 241    | 0      | 0     | 281   | 0    |
| Stage 1                  | 241    | -      | -      | -     | -     | -    |
| Stage 2                  | 267    | -      | -      | -     | -     | -    |
| Critical Hdwy            | 6.43   | 6.29   | -      | -     | 4.19  | -    |
| Critical Hdwy Stg 1      | 5.43   | -      | -      | -     | -     | -    |
| Critical Hdwy Stg 2      | 5.43   | -      | -      | -     | -     | -    |
| Follow-up Hdwy           | 3.527  | 3.381  | -      | -     | 2.281 | -    |
| Pot Cap-1 Maneuver       | 523    | 781    | -      | -     | 1242  | -    |
| Stage 1                  | 797    | -      | -      | -     | -     | -    |
| Stage 2                  | 775    | -      | -      | -     | -     | -    |
| Platoon blocked, %       |        |        | -      | -     |       | -    |
| Mov Cap-1 Maneuver       | 495    | 781    | -      | -     | 1242  | -    |
| Mov Cap-2 Maneuver       | 495    | -      | -      | -     | -     | -    |
| Stage 1                  | 755    | -      | -      | -     | -     | -    |
| Stage 2                  | 775    | -      | -      | -     | -     | -    |
| Approach                 | WB     | NB     | SB     |       |       |      |
| HCM Control Delay, s     | 2.9    | 0      | 2.4    |       |       |      |
| HCM LOS                  | B      |        |        |       |       |      |
| Minor Lane/Major Mvmt    | NBT    | NBWB   | NBLn1  | SBL   | SBT   |      |
| Capacity (veh/h)         | -      | -      | 587    | 1242  | -     |      |
| HCM Lane V/C Ratio       | -      | -      | 0.22   | 0.049 | -     |      |
| HCM Control Delay (s)    | -      | -      | 12.9   | 8     | 0     |      |
| HCM Lane LOS             | -      | -      | B      | A     | A     |      |
| HCM 95th %tile Q(veh)    | -      | -      | 0.8    | 0.2   | -     |      |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |      | ↔    |      | ↔    | ↔    |      | ↔    | ↔    |      |
| Traffic Volume (veh/h)       | 22                                                                                 | 74   | 35   | 93   | 63   | 53   | 44   | 1015 | 176  | 68   | 921  | 19   |
| Future Volume (veh/h)        | 22                                                                                 | 74   | 35   | 93   | 63   | 53   | 44   | 1015 | 176  | 68   | 921  | 19   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900 | 1900 | 1900 | 1856 | 1885 | 1885 | 1826 | 1856 | 1856 |
| Adj Flow Rate, veh/h         | 24                                                                                 | 80   | 38   | 101  | 68   | 58   | 48   | 1103 | 191  | 74   | 1001 | 21   |
| 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 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 3    | 1    | 1    | 5    | 3    | 3    |
| Cap, veh/h                   | 90                                                                                 | 191  | 81   | 184  | 96   | 71   | 386  | 1589 | 274  | 320  | 1885 | 40   |
| Arrive On Green              | 0.17                                                                               | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.05 | 0.52 | 0.52 | 0.07 | 0.53 | 0.53 |
| Sat Flow, veh/h              | 177                                                                                | 1143 | 482  | 658  | 575  | 423  | 1767 | 3054 | 527  | 1739 | 3531 | 74   |
| Grp Volume(v), veh/h         | 142                                                                                | 0    | 0    | 227  | 0    | 0    | 48   | 645  | 649  | 74   | 500  | 522  |
| Grp Sat Flow(s),veh/h/ln     | 1802                                                                               | 0    | 0    | 1655 | 0    | 0    | 1767 | 1791 | 1790 | 1739 | 1763 | 1842 |
| Q Serve(g_s), s              | 0.0                                                                                | 0.0  | 0.0  | 4.0  | 0.0  | 0.0  | 0.8  | 18.9 | 19.1 | 1.3  | 12.9 | 12.9 |
| Cycle Q Clear(g_c), s        | 5.0                                                                                | 0.0  | 0.0  | 9.0  | 0.0  | 0.0  | 0.8  | 18.9 | 19.1 | 1.3  | 12.9 | 12.9 |
| Prop In Lane                 | 0.17                                                                               |      | 0.27 | 0.44 |      | 0.26 | 1.00 |      | 0.29 | 1.00 |      | 0.04 |
| Lane Grp Cap(c), veh/h       | 361                                                                                | 0    | 0    | 351  | 0    | 0    | 386  | 932  | 932  | 320  | 941  | 983  |
| V/C Ratio(X)                 | 0.39                                                                               | 0.00 | 0.00 | 0.65 | 0.00 | 0.00 | 0.12 | 0.69 | 0.70 | 0.23 | 0.53 | 0.53 |
| Avail Cap(c_a), veh/h        | 515                                                                                | 0    | 0    | 489  | 0    | 0    | 446  | 932  | 932  | 355  | 941  | 983  |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 26.3                                                                               | 0.0  | 0.0  | 27.8 | 0.0  | 0.0  | 7.5  | 12.6 | 12.6 | 9.4  | 10.6 | 10.6 |
| Incr Delay (d2), s/veh       | 0.8                                                                                | 0.0  | 0.0  | 2.3  | 0.0  | 0.0  | 0.1  | 4.2  | 4.3  | 0.3  | 2.1  | 2.1  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 2.0                                                                                | 0.0  | 0.0  | 3.5  | 0.0  | 0.0  | 0.3  | 7.6  | 7.7  | 0.4  | 4.9  | 5.1  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 27.1                                                                               | 0.0  | 0.0  | 30.1 | 0.0  | 0.0  | 7.6  | 16.8 | 16.9 | 9.8  | 12.8 | 12.7 |
| LnGrp LOS                    | C                                                                                  | A    | A    | C    | A    | A    | A    | B    | B    | A    | B    | B    |
| Approach Vol, veh/h          |                                                                                    | 142  |      |      | 227  |      |      | 1342 |      |      | 1096 |      |
| Approach Delay, s/veh        |                                                                                    | 27.1 |      |      | 30.1 |      |      | 16.5 |      |      | 12.5 |      |
| Approach LOS                 |                                                                                    | C    |      |      | C    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 9.0                                                                                | 43.4 |      | 17.6 | 10.0 | 42.4 |      | 17.6 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.4                                                                                | 6.0  |      | 5.9  | 5.4  | 6.0  |      | 5.9  |      |      |      |      |
| Max Green Setting (Gmax), s  | 6.0                                                                                | 28.6 |      | 18.1 | 6.0  | 28.6 |      | 18.1 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 2.8                                                                                | 14.9 |      | 7.0  | 3.3  | 21.1 |      | 11.0 |      |      |      |      |
| Green Ext Time (p_c), s      | 0.0                                                                                | 8.7  |      | 0.5  | 0.0  | 6.2  |      | 0.7  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |                                                                                    |      | 16.6 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |                                                                                    |      | B    |      |      |      |      |      |      |      |      |      |

| Intersection             |                                                                                   |        |      |                                                                                   |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 2.5                                                                               |        |      |                                                                                   |      |                                                                                   |
| Movement                 | EBT                                                                               | EBR    | WBL  | WBT                                                                               | NBL  | NBR                                                                               |
| Lane Configurations      |  |        |      |  |      |  |
| Traffic Vol, veh/h       | 113                                                                               | 43     | 44   | 146                                                                               | 33   | 30                                                                                |
| Future Vol, veh/h        | 113                                                                               | 43     | 44   | 146                                                                               | 33   | 30                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0    | 0                                                                                 | 0    | 0                                                                                 |
| Sign Control             | Free                                                                              | Free   | Free | Free                                                                              | Stop | Stop                                                                              |
| RT Channelized           | -                                                                                 | None   | -    | None                                                                              | -    | None                                                                              |
| Storage Length           | -                                                                                 | -      | -    | -                                                                                 | 0    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -      | -    | 0                                                                                 | 0    | -                                                                                 |
| Grade, %                 | 0                                                                                 | -      | -    | 0                                                                                 | 0    | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92     | 92   | 92                                                                                | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 2      | 0    | 1                                                                                 | 0    | 0                                                                                 |
| Mvmt Flow                | 123                                                                               | 47     | 48   | 159                                                                               | 36   | 33                                                                                |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Major/Minor              | Major1                                                                            | Major2 |      | Minor1                                                                            |      |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0      | 170  | 0                                                                                 | 402  | 147                                                                               |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 147  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 255  | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -      | 4.1  | -                                                                                 | 6.4  | 6.2                                                                               |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -    | -                                                                                 | 5.4  | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -    | -                                                                                 | 5.4  | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -      | 2.2  | -                                                                                 | 3.5  | 3.3                                                                               |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1420 | -                                                                                 | 608  | 905                                                                               |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 885  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 792  | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -      |      | -                                                                                 |      |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1420 | -                                                                                 | 586  | 905                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -    | -                                                                                 | 586  | -                                                                                 |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 852  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 792  | -                                                                                 |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Approach                 | EB                                                                                | WB     |      | NB                                                                                |      |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 | 1.8    |      | 10.7                                                                              |      |                                                                                   |
| HCM LOS                  | B                                                                                 |        |      |                                                                                   |      |                                                                                   |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR  | WBL                                                                               | WBT  |                                                                                   |
| Capacity (veh/h)         | 704                                                                               | -      | -    | 1420                                                                              | -    |                                                                                   |
| HCM Lane V/C Ratio       | 0.097                                                                             | -      | -    | 0.034                                                                             | -    |                                                                                   |
| HCM Control Delay (s)    | 10.7                                                                              | -      | -    | 7.6                                                                               | 0    |                                                                                   |
| HCM Lane LOS             | B                                                                                 | -      | -    | A                                                                                 | A    |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.3                                                                               | -      | -    | 0.1                                                                               | -    |                                                                                   |

| Intersection              |        |        |      |        |       |        |      |      |      |      |      |      |
|---------------------------|--------|--------|------|--------|-------|--------|------|------|------|------|------|------|
| Int Delay, s/veh          | 8.1    |        |      |        |       |        |      |      |      |      |      |      |
| Movement                  | EBL    | EBT    | EBR  | WBL    | WBT   | WBR    | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕      |      |        | ↕     |        |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 33     | 36     | 69   | 14     | 44    | 2      | 146  | 363  | 44   | 9    | 223  | 48   |
| Future Vol, veh/h         | 33     | 36     | 69   | 14     | 44    | 2      | 146  | 363  | 44   | 9    | 223  | 48   |
| Conflicting Peds, #/hr    | 0      | 0      | 0    | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop   | Stop | Stop   | Stop  | Stop   | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -      | None | -      | -     | None   | -    | -    | None | -    | -    | None |
| Storage Length            | -      | -      | -    | -      | -     | -      | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0      | -      | -    | 0      | -     | -      | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -      | 0      | -    | -      | 0     | -      | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92     | 92     | 92   | 92     | 92    | 92     | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 8      | 0      | 0    | 0      | 4     | 0      | 0    | 1    | 0    | 0    | 3    | 0    |
| Mvmt Flow                 | 36     | 39     | 75   | 15     | 48    | 2      | 159  | 395  | 48   | 10   | 242  | 52   |
| Major/Minor               | Minor2 | Minor1 |      | Major1 |       | Major2 |      |      |      |      |      |      |
| Conflicting Flow All      | 1050   | 1049   | 268  | 1082   | 1051  | 419    | 294  | 0    | 0    | 443  | 0    | 0    |
| Stage 1                   | 288    | 288    | -    | 737    | 737   | -      | -    | -    | -    | -    | -    | -    |
| Stage 2                   | 762    | 761    | -    | 345    | 314   | -      | -    | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.18   | 6.5    | 6.2  | 7.1    | 6.54  | 6.2    | 4.1  | -    | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.18   | 5.5    | -    | 6.1    | 5.54  | -      | -    | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.18   | 5.5    | -    | 6.1    | 5.54  | -      | -    | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.572  | 4      | 3.3  | 3.5    | 4.036 | 3.3    | 2.2  | -    | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 200    | 229    | 776  | 197    | 225   | 638    | 1279 | -    | -    | 1128 | -    | -    |
| Stage 1                   | 707    | 677    | -    | 413    | 422   | -      | -    | -    | -    | -    | -    | -    |
| Stage 2                   | 388    | 417    | -    | 675    | 653   | -      | -    | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |        |      |        |       |        |      | -    | -    | -    | -    | -    |
| Mov Cap-1 Maneuver        | 139    | 189    | 776  | 130    | 186   | 638    | 1279 | -    | -    | 1128 | -    | -    |
| Mov Cap-2 Maneuver        | 139    | 189    | -    | 130    | 186   | -      | -    | -    | -    | -    | -    | -    |
| Stage 1                   | 590    | 670    | -    | 344    | 352   | -      | -    | -    | -    | -    | -    | -    |
| Stage 2                   | 279    | 348    | -    | 568    | 646   | -      | -    | -    | -    | -    | -    | -    |
| Approach                  | EB     | WB     |      | NB     |       | SB     |      |      |      |      |      |      |
| HCM Control Delay, s      | 4.5    | 37.9   |      | 2.2    |       | 0.3    |      |      |      |      |      |      |
| HCM LOS                   | D      | E      |      |        |       |        |      |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT    | NBR  | EBLn   | WBLn1 | SBL    | SBT  | SBR  |      |      |      |      |
| Capacity (veh/h)          | 1279   | -      | -    | 267    | 173   | 1128   | -    | -    |      |      |      |      |
| HCM Lane V/C Ratio        | 0.124  | -      | -    | 0.562  | 0.377 | 0.009  | -    | -    |      |      |      |      |
| HCM Control Delay (s)     | 8.2    | 0      | -    | 34.5   | 37.9  | 8.2    | 0    | -    |      |      |      |      |
| HCM Lane LOS              | A      | A      | -    | D      | E     | A      | A    | -    |      |      |      |      |
| HCM 95th %tile Q(veh)     | 0.4    | -      | -    | 3.2    | 1.6   | 0      | -    | -    |      |      |      |      |

# **PM Phase I Modified**



| Intersection             |        |        |        |       |       |      |
|--------------------------|--------|--------|--------|-------|-------|------|
| Int Delay, s/veh         | 3.5    |        |        |       |       |      |
| Movement                 | WBL    | WBR    | NBT    | NBR   | SBL   | SBT  |
| Lane Configurations      | W      | R      | T      | R     | L     | T    |
| Traffic Vol, veh/h       | 68     | 51     | 185    | 74    | 56    | 133  |
| Future Vol, veh/h        | 68     | 51     | 185    | 74    | 56    | 133  |
| Conflicting Peds, #/hr   | 0      | 0      | 0      | 0     | 0     | 0    |
| Sign Control             | Stop   | Stop   | Free   | Free  | Free  | Free |
| RT Channelized           | -      | None   | -      | None  | -     | None |
| Storage Length           | -      | -      | -      | -     | -     | -    |
| Veh in Median Storage, # | -      | 0      | -      | -     | -     | 0    |
| Grade, %                 | 0      | -      | 0      | -     | -     | 0    |
| Peak Hour Factor         | 92     | 92     | 92     | 92    | 92    | 92   |
| Heavy Vehicles, %        | 3      | 9      | 3      | 4     | 9     | 2    |
| Mvmt Flow                | 74     | 55     | 201    | 80    | 61    | 145  |
| Major/Minor              | Minor1 | Major1 | Major2 |       |       |      |
| Conflicting Flow All     | 508    | 241    | 0      | 0     | 281   | 0    |
| Stage 1                  | 241    | -      | -      | -     | -     | -    |
| Stage 2                  | 267    | -      | -      | -     | -     | -    |
| Critical Hdwy            | 6.43   | 6.29   | -      | -     | 4.19  | -    |
| Critical Hdwy Stg 1      | 5.43   | -      | -      | -     | -     | -    |
| Critical Hdwy Stg 2      | 5.43   | -      | -      | -     | -     | -    |
| Follow-up Hdwy           | 3.527  | 3.381  | -      | -     | 2.281 | -    |
| Pot Cap-1 Maneuver       | 523    | 781    | -      | -     | 1242  | -    |
| Stage 1                  | 797    | -      | -      | -     | -     | -    |
| Stage 2                  | 775    | -      | -      | -     | -     | -    |
| Platoon blocked, %       |        |        | -      | -     |       | -    |
| Mov Cap-1 Maneuver       | 495    | 781    | -      | -     | 1242  | -    |
| Mov Cap-2 Maneuver       | 495    | -      | -      | -     | -     | -    |
| Stage 1                  | 755    | -      | -      | -     | -     | -    |
| Stage 2                  | 775    | -      | -      | -     | -     | -    |
| Approach                 | WB     | NB     | SB     |       |       |      |
| HCM Control Delay, s     | 2.9    | 0      | 2.4    |       |       |      |
| HCM LOS                  | B      |        |        |       |       |      |
| Minor Lane/Major Mvmt    | NBT    | NBWB   | NBLn1  | SBL   | SBT   |      |
| Capacity (veh/h)         | -      | -      | 587    | 1242  | -     |      |
| HCM Lane V/C Ratio       | -      | -      | 0.22   | 0.049 | -     |      |
| HCM Control Delay (s)    | -      | -      | 12.9   | 8     | 0     |      |
| HCM Lane LOS             | -      | -      | B      | A     | A     |      |
| HCM 95th %tile Q(veh)    | -      | -      | 0.8    | 0.2   | -     |      |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |      | ↔    |      | ↔    | ↔    |      | ↔    | ↔    |      |
| Traffic Volume (veh/h)       | 22                                                                                 | 74   | 35   | 93   | 63   | 53   | 44   | 1015 | 176  | 68   | 921  | 19   |
| Future Volume (veh/h)        | 22                                                                                 | 74   | 35   | 93   | 63   | 53   | 44   | 1015 | 176  | 68   | 921  | 19   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900 | 1900 | 1900 | 1856 | 1885 | 1885 | 1826 | 1856 | 1856 |
| Adj Flow Rate, veh/h         | 24                                                                                 | 80   | 38   | 101  | 68   | 58   | 48   | 1103 | 191  | 74   | 1001 | 21   |
| 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 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 3    | 1    | 1    | 5    | 3    | 3    |
| Cap, veh/h                   | 90                                                                                 | 191  | 81   | 184  | 96   | 71   | 386  | 1589 | 274  | 320  | 1885 | 40   |
| Arrive On Green              | 0.17                                                                               | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.05 | 0.52 | 0.52 | 0.07 | 0.53 | 0.53 |
| Sat Flow, veh/h              | 177                                                                                | 1143 | 482  | 658  | 575  | 423  | 1767 | 3054 | 527  | 1739 | 3531 | 74   |
| Grp Volume(v), veh/h         | 142                                                                                | 0    | 0    | 227  | 0    | 0    | 48   | 645  | 649  | 74   | 500  | 522  |
| Grp Sat Flow(s),veh/h/ln     | 1802                                                                               | 0    | 0    | 1655 | 0    | 0    | 1767 | 1791 | 1790 | 1739 | 1763 | 1842 |
| Q Serve(g_s), s              | 0.0                                                                                | 0.0  | 0.0  | 4.0  | 0.0  | 0.0  | 0.8  | 18.9 | 19.1 | 1.3  | 12.9 | 12.9 |
| Cycle Q Clear(g_c), s        | 5.0                                                                                | 0.0  | 0.0  | 9.0  | 0.0  | 0.0  | 0.8  | 18.9 | 19.1 | 1.3  | 12.9 | 12.9 |
| Prop In Lane                 | 0.17                                                                               |      | 0.27 | 0.44 |      | 0.26 | 1.00 |      | 0.29 | 1.00 |      | 0.04 |
| Lane Grp Cap(c), veh/h       | 361                                                                                | 0    | 0    | 351  | 0    | 0    | 386  | 932  | 932  | 320  | 941  | 983  |
| V/C Ratio(X)                 | 0.39                                                                               | 0.00 | 0.00 | 0.65 | 0.00 | 0.00 | 0.12 | 0.69 | 0.70 | 0.23 | 0.53 | 0.53 |
| Avail Cap(c_a), veh/h        | 515                                                                                | 0    | 0    | 489  | 0    | 0    | 446  | 932  | 932  | 355  | 941  | 983  |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.84 | 0.84 | 0.84 |
| Uniform Delay (d), s/veh     | 26.3                                                                               | 0.0  | 0.0  | 27.8 | 0.0  | 0.0  | 7.5  | 12.6 | 12.6 | 9.4  | 10.6 | 10.6 |
| Incr Delay (d2), s/veh       | 0.8                                                                                | 0.0  | 0.0  | 2.3  | 0.0  | 0.0  | 0.1  | 4.2  | 4.3  | 0.3  | 1.8  | 1.7  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 2.0                                                                                | 0.0  | 0.0  | 3.5  | 0.0  | 0.0  | 0.3  | 7.6  | 7.7  | 0.4  | 4.8  | 5.0  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 27.1                                                                               | 0.0  | 0.0  | 30.1 | 0.0  | 0.0  | 7.6  | 16.8 | 16.9 | 9.7  | 12.4 | 12.3 |
| LnGrp LOS                    | C                                                                                  | A    | A    | C    | A    | A    | A    | B    | B    | A    | B    | B    |
| Approach Vol, veh/h          |                                                                                    | 142  |      |      | 227  |      |      | 1342 |      |      | 1096 |      |
| Approach Delay, s/veh        |                                                                                    | 27.1 |      |      | 30.1 |      |      | 16.5 |      |      | 12.2 |      |
| Approach LOS                 |                                                                                    | C    |      |      | C    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 9.0                                                                                | 43.4 |      | 17.6 | 10.0 | 42.4 |      | 17.6 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.4                                                                                | 6.0  |      | 5.9  | 5.4  | 6.0  |      | 5.9  |      |      |      |      |
| Max Green Setting (Gmax), s  | 6.0                                                                                | 28.6 |      | 18.1 | 6.0  | 28.6 |      | 18.1 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 2.8                                                                                | 14.9 |      | 7.0  | 3.3  | 21.1 |      | 11.0 |      |      |      |      |
| Green Ext Time (p_c), s      | 0.0                                                                                | 8.7  |      | 0.5  | 0.0  | 6.2  |      | 0.7  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |                                                                                    |      | 16.5 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |                                                                                    |      | B    |      |      |      |      |      |      |      |      |      |

| Intersection             |                                                                                   |        |      |                                                                                   |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 2.5                                                                               |        |      |                                                                                   |      |                                                                                   |
| Movement                 | EBT                                                                               | EBR    | WBL  | WBT                                                                               | NBL  | NBR                                                                               |
| Lane Configurations      |  |        |      |  |      |  |
| Traffic Vol, veh/h       | 113                                                                               | 43     | 44   | 146                                                                               | 33   | 30                                                                                |
| Future Vol, veh/h        | 113                                                                               | 43     | 44   | 146                                                                               | 33   | 30                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0    | 0                                                                                 | 0    | 0                                                                                 |
| Sign Control             | Free                                                                              | Free   | Free | Free                                                                              | Stop | Stop                                                                              |
| RT Channelized           | -                                                                                 | None   | -    | None                                                                              | -    | None                                                                              |
| Storage Length           | -                                                                                 | -      | -    | -                                                                                 | 0    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -      | -    | 0                                                                                 | 0    | -                                                                                 |
| Grade, %                 | 0                                                                                 | -      | -    | 0                                                                                 | 0    | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92     | 92   | 92                                                                                | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 2      | 0    | 1                                                                                 | 0    | 0                                                                                 |
| Mvmt Flow                | 123                                                                               | 47     | 48   | 159                                                                               | 36   | 33                                                                                |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Major/Minor              | Major1                                                                            | Major2 |      | Minor1                                                                            |      |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0      | 170  | 0                                                                                 | 402  | 147                                                                               |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 147  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 255  | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -      | 4.1  | -                                                                                 | 6.4  | 6.2                                                                               |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -    | -                                                                                 | 5.4  | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -    | -                                                                                 | 5.4  | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -      | 2.2  | -                                                                                 | 3.5  | 3.3                                                                               |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1420 | -                                                                                 | 608  | 905                                                                               |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 885  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 792  | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -      |      | -                                                                                 |      |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1420 | -                                                                                 | 586  | 905                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -    | -                                                                                 | 586  | -                                                                                 |
| Stage 1                  | -                                                                                 | -      | -    | -                                                                                 | 852  | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -    | -                                                                                 | 792  | -                                                                                 |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Approach                 | EB                                                                                | WB     |      | NB                                                                                |      |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 | 1.8    |      | 10.7                                                                              |      |                                                                                   |
| HCM LOS                  | B                                                                                 |        |      |                                                                                   |      |                                                                                   |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
|                          |                                                                                   |        |      |                                                                                   |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR  | WBL                                                                               | WBT  |                                                                                   |
| Capacity (veh/h)         | 704                                                                               | -      | -    | 1420                                                                              | -    |                                                                                   |
| HCM Lane V/C Ratio       | 0.097                                                                             | -      | -    | 0.034                                                                             | -    |                                                                                   |
| HCM Control Delay (s)    | 10.7                                                                              | -      | -    | 7.6                                                                               | 0    |                                                                                   |
| HCM Lane LOS             | B                                                                                 | -      | -    | A                                                                                 | A    |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.3                                                                               | -      | -    | 0.1                                                                               | -    |                                                                                   |

| Intersection             |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |      |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|--------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 8.1    |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |      |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR    | NBL  | NBT                                                                               | NBR    | SBL  | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |        |      |  |        |      |  |      |
| Traffic Vol, veh/h       | 33     | 36                                                                                | 69     | 14    | 44                                                                                | 2      | 146  | 363                                                                               | 44     | 9    | 223                                                                                 | 48   |
| Future Vol, veh/h        | 33     | 36                                                                                | 69     | 14    | 44                                                                                | 2      | 146  | 363                                                                               | 44     | 9    | 223                                                                                 | 48   |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0    | 0                                                                                 | 0      | 0    | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop   | Free | Free                                                                              | Free   | Free | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None   | -    | -                                                                                 | None   | -    | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -    | 0                                                                                 | -      | -    | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -    | 0                                                                                 | -      | -    | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92   | 92                                                                                | 92     | 92   | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 8      | 0                                                                                 | 0      | 0     | 4                                                                                 | 0      | 0    | 1                                                                                 | 0      | 0    | 3                                                                                   | 0    |
| Mvmt Flow                | 36     | 39                                                                                | 75     | 15    | 48                                                                                | 2      | 159  | 395                                                                               | 48     | 10   | 242                                                                                 | 52   |
|                          |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |      |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       |                                                                                   | Major1 |      |                                                                                   | Major2 |      |                                                                                     |      |
| Conflicting Flow All     | 1050   | 1049                                                                              | 268    | 1082  | 1051                                                                              | 419    | 294  | 0                                                                                 | 0      | 443  | 0                                                                                   | 0    |
| Stage 1                  | 288    | 288                                                                               | -      | 737   | 737                                                                               | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Stage 2                  | 762    | 761                                                                               | -      | 345   | 314                                                                               | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Critical Hdwy            | 7.18   | 6.5                                                                               | 6.2    | 7.1   | 6.54                                                                              | 6.2    | 4.1  | -                                                                                 | -      | 4.1  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.18   | 5.5                                                                               | -      | 6.1   | 5.54                                                                              | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.18   | 5.5                                                                               | -      | 6.1   | 5.54                                                                              | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Follow-up Hdwy           | 3.572  | 4                                                                                 | 3.3    | 3.5   | 4.036                                                                             | 3.3    | 2.2  | -                                                                                 | -      | 2.2  | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 200    | 229                                                                               | 776    | 197   | 225                                                                               | 638    | 1279 | -                                                                                 | -      | 1128 | -                                                                                   | -    |
| Stage 1                  | 707    | 677                                                                               | -      | 413   | 422                                                                               | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Stage 2                  | 388    | 417                                                                               | -      | 675   | 653                                                                               | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |        |      | -                                                                                 | -      |      | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 139    | 189                                                                               | 776    | 130   | 186                                                                               | 638    | 1279 | -                                                                                 | -      | 1128 | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 139    | 189                                                                               | -      | 130   | 186                                                                               | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Stage 1                  | 590    | 670                                                                               | -      | 344   | 352                                                                               | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
| Stage 2                  | 279    | 348                                                                               | -      | 568   | 646                                                                               | -      | -    | -                                                                                 | -      | -    | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |      |                                                                                     |      |
| Approach                 | EB     |                                                                                   |        | WB    |                                                                                   |        | NB   |                                                                                   |        | SB   |                                                                                     |      |
| HCM Control Delay, s     | 4.5    |                                                                                   |        | 37.9  |                                                                                   |        | 2.2  |                                                                                   |        | 0.3  |                                                                                     |      |
| HCM LOS                  | D      |                                                                                   |        | E     |                                                                                   |        |      |                                                                                   |        |      |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |      |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn  | WBLn                                                                              | WBLn1  | SBL  | SBT                                                                               | SBR    |      |                                                                                     |      |
| Capacity (veh/h)         | 1279   | -                                                                                 | -      | 267   | 173                                                                               | 1128   | -    | -                                                                                 | -      |      |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.124  | -                                                                                 | -      | 0.562 | 0.377                                                                             | 0.009  | -    | -                                                                                 | -      |      |                                                                                     |      |
| HCM Control Delay (s)    | 8.2    | 0                                                                                 | -      | 34.5  | 37.9                                                                              | 8.2    | 0    | -                                                                                 | -      |      |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | D     | E                                                                                 | A      | A    | -                                                                                 | -      |      |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0.4    | -                                                                                 | -      | 3.2   | 1.6                                                                               | 0      | -    | -                                                                                 | -      |      |                                                                                     |      |

## **AM Phase II**



| Intersection             |        |        |        |       |       |      |
|--------------------------|--------|--------|--------|-------|-------|------|
| Int Delay, s/veh         | 24.5   |        |        |       |       |      |
| Movement                 | WBL    | WBR    | NBT    | NBR   | SBL   | SBT  |
| Lane Configurations      | W      | W      | T      | T     | T     | T    |
| Traffic Vol, veh/h       | 103    | 224    | 441    | 109   | 107   | 337  |
| Future Vol, veh/h        | 103    | 224    | 441    | 109   | 107   | 337  |
| Conflicting Peds, #/hr   | 0      | 0      | 0      | 0     | 0     | 0    |
| Sign Control             | Stop   | Stop   | Free   | Free  | Free  | Free |
| RT Channelized           | -      | None   | -      | None  | -     | None |
| Storage Length           | -      | -      | -      | -     | -     | -    |
| Veh in Median Storage, # | -      | 0      | -      | -     | -     | 0    |
| Grade, %                 | 0      | -      | 0      | -     | -     | 0    |
| Peak Hour Factor         | 92     | 92     | 92     | 92    | 92    | 92   |
| Heavy Vehicles, %        | 0      | 7      | 3      | 6     | 8     | 3    |
| Mvmt Flow                | 112    | 243    | 479    | 118   | 116   | 366  |
| Major/Minor              | Minor1 | Major1 | Major2 |       |       |      |
| Conflicting Flow All     | 1136   | 538    | 0      | 0     | 597   | 0    |
| Stage 1                  | 538    | -      | -      | -     | -     | -    |
| Stage 2                  | 598    | -      | -      | -     | -     | -    |
| Critical Hdwy            | 6.4    | 6.27   | -      | -     | 4.18  | -    |
| Critical Hdwy Stg 1      | 5.4    | -      | -      | -     | -     | -    |
| Critical Hdwy Stg 2      | 5.4    | -      | -      | -     | -     | -    |
| Follow-up Hdwy           | 3.5    | 3.363  | -      | -     | 2.272 | -    |
| Pot Cap-1 Maneuver       | 225    | 534    | -      | -     | 951   | -    |
| Stage 1                  | 589    | -      | -      | -     | -     | -    |
| Stage 2                  | 553    | -      | -      | -     | -     | -    |
| Platoon blocked, %       |        |        | -      | -     |       | -    |
| Mov Cap-1 Maneuver       | 191    | 534    | -      | -     | 951   | -    |
| Mov Cap-2 Maneuver       | 191    | -      | -      | -     | -     | -    |
| Stage 1                  | 499    | -      | -      | -     | -     | -    |
| Stage 2                  | 553    | -      | -      | -     | -     | -    |
| Approach                 | WB     | NB     | SB     |       |       |      |
| HCM Control Delay, s     | 96.1   | 0      | 2.2    |       |       |      |
| HCM LOS                  | F      |        |        |       |       |      |
| Minor Lane/Major Mvmt    | NBT    | NBWB   | NBSBL  | NBSBT | SBL   | SBT  |
| Capacity (veh/h)         | -      | -      | 341    | 951   | -     | -    |
| HCM Lane V/C Ratio       | -      | -      | 1.042  | 0.122 | -     | -    |
| HCM Control Delay (s)    | -      | -      | 96.1   | 9.3   | 0     | 0    |
| HCM Lane LOS             | -      | -      | F      | A     | A     | A    |
| HCM 95th %tile Q(veh)    | -      | -      | 12.5   | 0.4   | -     | -    |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |      |      |       |       |      |      |      |      |      |       |       |
|------------------------------|------------------------------------------------------------------------------------|------|------|-------|-------|------|------|------|------|------|-------|-------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR   |
| Lane Configurations          |                                                                                    | ↔    |      |       | ↔     |      | ↔    | ↔    |      | ↔    | ↔     |       |
| Traffic Volume (veh/h)       | 27                                                                                 | 110  | 119  | 335   | 169   | 76   | 63   | 790  | 73   | 39   | 1460  | 44    |
| Future Volume (veh/h)        | 27                                                                                 | 110  | 119  | 335   | 169   | 76   | 63   | 790  | 73   | 39   | 1460  | 44    |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00  |       | 1.00 | 1.00 |      | 1.00 | 1.00 |       | 1.00  |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| Work Zone On Approach        |                                                                                    | No   |      |       | No    |      |      | No   |      |      | No    |       |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1841  | 1841  | 1841 | 1811 | 1767 | 1767 | 1900 | 1870  | 1870  |
| Adj Flow Rate, veh/h         | 29                                                                                 | 120  | 129  | 364   | 184   | 83   | 68   | 859  | 79   | 42   | 1587  | 48    |
| 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  |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 4     | 4     | 4    | 6    | 9    | 9    | 0    | 2     | 2     |
| Cap, veh/h                   | 88                                                                                 | 361  | 366  | 342   | 154   | 69   | 117  | 1235 | 114  | 222  | 1399  | 42    |
| Arrive On Green              | 0.45                                                                               | 0.45 | 0.45 | 0.45  | 0.45  | 0.45 | 0.04 | 0.40 | 0.40 | 0.04 | 0.40  | 0.40  |
| Sat Flow, veh/h              | 138                                                                                | 806  | 818  | 679   | 343   | 155  | 1725 | 3108 | 286  | 1810 | 3522  | 106   |
| Grp Volume(v), veh/h         | 278                                                                                | 0    | 0    | 631   | 0     | 0    | 68   | 464  | 474  | 42   | 799   | 836   |
| Grp Sat Flow(s),veh/h/ln     | 1762                                                                               | 0    | 0    | 1178  | 0     | 0    | 1725 | 1678 | 1715 | 1810 | 1777  | 1851  |
| Q Serve(g_s), s              | 0.0                                                                                | 0.0  | 0.0  | 51.5  | 0.0   | 0.0  | 3.5  | 34.5 | 34.5 | 2.0  | 59.6  | 59.6  |
| Cycle Q Clear(g_c), s        | 15.6                                                                               | 0.0  | 0.0  | 67.1  | 0.0   | 0.0  | 3.5  | 34.5 | 34.5 | 2.0  | 59.6  | 59.6  |
| Prop In Lane                 | 0.10                                                                               |      | 0.46 | 0.58  |       | 0.13 | 1.00 |      | 0.17 | 1.00 |       | 0.06  |
| Lane Grp Cap(c), veh/h       | 815                                                                                | 0    | 0    | 565   | 0     | 0    | 117  | 667  | 681  | 222  | 706   | 736   |
| V/C Ratio(X)                 | 0.34                                                                               | 0.00 | 0.00 | 1.12  | 0.00  | 0.00 | 0.58 | 0.70 | 0.70 | 0.19 | 1.13  | 1.14  |
| Avail Cap(c_a), veh/h        | 815                                                                                | 0    | 0    | 565   | 0     | 0    | 117  | 667  | 681  | 224  | 706   | 736   |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00  | 0.00  | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 27.2                                                                               | 0.0  | 0.0  | 46.5  | 0.0   | 0.0  | 36.6 | 37.6 | 37.6 | 28.6 | 45.2  | 45.2  |
| Incr Delay (d2), s/veh       | 0.3                                                                                | 0.0  | 0.0  | 74.4  | 0.0   | 0.0  | 6.5  | 4.0  | 3.9  | 0.4  | 76.2  | 77.7  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 6.6                                                                                | 0.0  | 0.0  | 32.9  | 0.0   | 0.0  | 1.6  | 14.3 | 14.6 | 0.9  | 39.7  | 41.6  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |       |       |      |      |      |      |      |       |       |
| LnGrp Delay(d),s/veh         | 27.5                                                                               | 0.0  | 0.0  | 120.9 | 0.0   | 0.0  | 43.1 | 41.7 | 41.6 | 29.0 | 121.4 | 122.9 |
| LnGrp LOS                    | C                                                                                  | A    | A    | F     | A     | A    | D    | D    | D    | C    | F     | F     |
| Approach Vol, veh/h          |                                                                                    | 278  |      |       | 631   |      |      | 1006 |      |      | 1677  |       |
| Approach Delay, s/veh        |                                                                                    | 27.5 |      |       | 120.9 |      |      | 41.7 |      |      | 119.8 |       |
| Approach LOS                 |                                                                                    | C    |      |       | F     |      |      | D    |      |      | F     |       |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4     | 5     | 6    |      | 8    |      |      |       |       |
| Phs Duration (G+Y+Rc), s     | 11.4                                                                               | 65.6 |      | 73.0  | 11.4  | 65.6 |      | 73.0 |      |      |       |       |
| Change Period (Y+Rc), s      | 5.4                                                                                | 6.0  |      | 5.9   | 5.4   | 6.0  |      | 5.9  |      |      |       |       |
| Max Green Setting (Gmax), s  | 6.0                                                                                | 59.6 |      | 67.1  | 6.2   | 59.4 |      | 67.1 |      |      |       |       |
| Max Q Clear Time (g_c+I1), s | 5.5                                                                                | 61.6 |      | 17.6  | 4.0   | 36.5 |      | 69.1 |      |      |       |       |
| Green Ext Time (p_c), s      | 0.0                                                                                | 0.0  |      | 2.1   | 0.0   | 10.3 |      | 0.0  |      |      |       |       |
| <b>Intersection Summary</b>  |                                                                                    |      |      |       |       |      |      |      |      |      |       |       |
| HCM 6th Ctrl Delay           |                                                                                    |      |      | 91.0  |       |      |      |      |      |      |       |       |
| HCM 6th LOS                  |                                                                                    |      |      | F     |       |      |      |      |      |      |       |       |

| Intersection             |                                                                                   |      |                                                                                   |       |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 2.3                                                                               |      |                                                                                   |       |                                                                                   |      |
| Movement                 | EBT                                                                               | EBR  | WBL                                                                               | WBT   | NBL                                                                               | NBR  |
| Lane Configurations      |  |      |  |       |  |      |
| Traffic Vol, veh/h       | 173                                                                               | 24   | 55                                                                                | 271   | 47                                                                                | 21   |
| Future Vol, veh/h        | 173                                                                               | 24   | 55                                                                                | 271   | 47                                                                                | 21   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0     | 0                                                                                 | 0    |
| Sign Control             | Free                                                                              | Free | Free                                                                              | Free  | Stop                                                                              | Stop |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None  | -                                                                                 | None |
| Storage Length           | -                                                                                 | -    | -                                                                                 | -     | 0                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -                                                                                 | 0     | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -                                                                                 | 0     | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 92                                                                                | 92    | 92                                                                                | 92   |
| Heavy Vehicles, %        | 0                                                                                 | 4    | 22                                                                                | 3     | 0                                                                                 | 20   |
| Mvmt Flow                | 188                                                                               | 26   | 60                                                                                | 295   | 51                                                                                | 23   |
|                          |                                                                                   |      |                                                                                   |       |                                                                                   |      |
| Major/Minor              | Major1                                                                            |      | Major2                                                                            |       | Minor1                                                                            |      |
| Conflicting Flow All     | 0                                                                                 | 0    | 214                                                                               | 0     | 616                                                                               | 201  |
| Stage 1                  | -                                                                                 | -    | -                                                                                 | -     | 201                                                                               | -    |
| Stage 2                  | -                                                                                 | -    | -                                                                                 | -     | 415                                                                               | -    |
| Critical Hdwy            | -                                                                                 | -    | 4.32                                                                              | -     | 6.4                                                                               | 6.4  |
| Critical Hdwy Stg 1      | -                                                                                 | -    | -                                                                                 | -     | 5.4                                                                               | -    |
| Critical Hdwy Stg 2      | -                                                                                 | -    | -                                                                                 | -     | 5.4                                                                               | -    |
| Follow-up Hdwy           | -                                                                                 | -    | 2.398                                                                             | -     | 3.5                                                                               | 3.48 |
| Pot Cap-1 Maneuver       | -                                                                                 | -    | 1246                                                                              | -     | 457                                                                               | 796  |
| Stage 1                  | -                                                                                 | -    | -                                                                                 | -     | 838                                                                               | -    |
| Stage 2                  | -                                                                                 | -    | -                                                                                 | -     | 671                                                                               | -    |
| Platoon blocked, %       | -                                                                                 | -    |                                                                                   | -     |                                                                                   |      |
| Mov Cap-1 Maneuver       | -                                                                                 | -    | 1246                                                                              | -     | 430                                                                               | 796  |
| Mov Cap-2 Maneuver       | -                                                                                 | -    | -                                                                                 | -     | 430                                                                               | -    |
| Stage 1                  | -                                                                                 | -    | -                                                                                 | -     | 789                                                                               | -    |
| Stage 2                  | -                                                                                 | -    | -                                                                                 | -     | 671                                                                               | -    |
|                          |                                                                                   |      |                                                                                   |       |                                                                                   |      |
| Approach                 | EB                                                                                |      | WB                                                                                |       | NB                                                                                |      |
| HCM Control Delay, s     | 0                                                                                 |      | 1.4                                                                               |       | 13.4                                                                              |      |
| HCM LOS                  | B                                                                                 |      |                                                                                   |       |                                                                                   |      |
|                          |                                                                                   |      |                                                                                   |       |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT  | EBR                                                                               | WBL   | WBT                                                                               |      |
| Capacity (veh/h)         | 501                                                                               | -    | -                                                                                 | 1246  | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.148                                                                             | -    | -                                                                                 | 0.048 | -                                                                                 |      |
| HCM Control Delay (s)    | 13.4                                                                              | -    | -                                                                                 | 8     | 0                                                                                 |      |
| HCM Lane LOS             | B                                                                                 | -    | -                                                                                 | A     | A                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0.5                                                                               | -    | -                                                                                 | 0.2   | -                                                                                 |      |

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 18.1 |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 50   | 38   | 180  | 53   | 119  | 7    | 90   | 145  | 8    | 6    | 302  | 39   |
| Future Vol, veh/h         | 50   | 38   | 180  | 53   | 119  | 7    | 90   | 145  | 8    | 6    | 302  | 39   |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0    | 0    | 2    | 2    | 2    | 2    | 6    | 6    | 33   | 50   | 2    | 0    |
| Mvmt Flow                 | 54   | 41   | 196  | 58   | 129  | 8    | 98   | 158  | 9    | 7    | 328  | 42   |

| Major/Minor          | Minor2 |     | Minor1 |       | Major1 |       | Major2 |   |   |      |   |   |
|----------------------|--------|-----|--------|-------|--------|-------|--------|---|---|------|---|---|
| Conflicting Flow All | 790    | 726 | 349    | 841   | 743    | 163   | 370    | 0 | 0 | 167  | 0 | 0 |
| Stage 1              | 363    | 363 | -      | 359   | 359    | -     | -      | - | - | -    | - | - |
| Stage 2              | 427    | 363 | -      | 482   | 384    | -     | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.1    | 6.5 | 6.22   | 7.12  | 6.52   | 6.22  | 4.16   | - | - | 4.6  | - | - |
| Critical Hdwy Stg 1  | 6.1    | 5.5 | -      | 6.12  | 5.52   | -     | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.1    | 5.5 | -      | 6.12  | 5.52   | -     | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.5    | 4   | 3.318  | 3.518 | 4.018  | 3.318 | 2.254  | - | - | 2.65 | - | - |
| Pot Cap-1 Maneuver   | 310    | 354 | 694    | 284   | 343    | 882   | 1167   | - | - | 1166 | - | - |
| Stage 1              | 660    | 628 | -      | 659   | 627    | -     | -      | - | - | -    | - | - |
| Stage 2              | 610    | 628 | -      | 565   | 611    | -     | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |     |        |       |        |       |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 192    | 319 | 694    | 170   | 309    | 882   | 1167   | - | - | 1166 | - | - |
| Mov Cap-2 Maneuver   | 192    | 319 | -      | 170   | 309    | -     | -      | - | - | -    | - | - |
| Stage 1              | 599    | 623 | -      | 598   | 569    | -     | -      | - | - | -    | - | - |
| Stage 2              | 424    | 570 | -      | 376   | 606    | -     | -      | - | - | -    | - | - |

| Approach             | EB |  | WB |  | NB  |  | SB  |  |
|----------------------|----|--|----|--|-----|--|-----|--|
| HCM Control Delay, s | 31 |  | 54 |  | 3.1 |  | 0.1 |  |
| HCM LOS              | D  |  | F  |  |     |  |     |  |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn  | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1167  | -   | -   | 419   | 254   | 1166  | -   | -   |
| HCM Lane V/C Ratio    | 0.084 | -   | -   | 0.695 | 0.766 | 0.006 | -   | -   |
| HCM Control Delay (s) | 8.4   | 0   | -   | 31    | 54    | 8.1   | 0   | -   |
| HCM Lane LOS          | A     | A   | -   | D     | F     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0.3   | -   | -   | 5.2   | 5.6   | 0     | -   | -   |

# **AM Phase II Modified**



| Intersection             |                                                                                   |                                                                                   |                                                                                   |       |       |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|-------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 7.4                                                                               |                                                                                   |                                                                                   |       |       |                                                                                   |
| Movement                 | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR   | SBL   | SBT                                                                               |
| Lane Configurations      |  |  |  |       |       |  |
| Traffic Vol, veh/h       | 103                                                                               | 224                                                                               | 441                                                                               | 109   | 107   | 337                                                                               |
| Future Vol, veh/h        | 103                                                                               | 224                                                                               | 441                                                                               | 109   | 107   | 337                                                                               |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0     | 0     | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free  | Free  | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None  | -     | None                                                                              |
| Storage Length           | 150                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | -                                                                                 | -     | -     | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -     | -     | 0                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92    | 92    | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 7                                                                                 | 3                                                                                 | 6     | 8     | 3                                                                                 |
| Mvmt Flow                | 112                                                                               | 243                                                                               | 479                                                                               | 118   | 116   | 366                                                                               |
| Major/Minor              | Minor1                                                                            | Major1                                                                            | Major2                                                                            |       |       |                                                                                   |
| Conflicting Flow All     | 1136                                                                              | 538                                                                               | 0                                                                                 | 0     | 597   | 0                                                                                 |
| Stage 1                  | 538                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Stage 2                  | 598                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Critical Hdwy            | 6.4                                                                               | 6.27                                                                              | -                                                                                 | -     | 4.18  | -                                                                                 |
| Critical Hdwy Stg 1      | 5.4                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Critical Hdwy Stg 2      | 5.4                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Follow-up Hdwy           | 3.5                                                                               | 3.363                                                                             | -                                                                                 | -     | 2.272 | -                                                                                 |
| Pot Cap-1 Maneuver       | 225                                                                               | 534                                                                               | -                                                                                 | -     | 951   | -                                                                                 |
| Stage 1                  | 589                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Stage 2                  | 553                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Platoon blocked, %       |                                                                                   |                                                                                   | -                                                                                 | -     |       | -                                                                                 |
| Mov Cap-1 Maneuver       | 191                                                                               | 534                                                                               | -                                                                                 | -     | 951   | -                                                                                 |
| Mov Cap-2 Maneuver       | 191                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Stage 1                  | 499                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Stage 2                  | 553                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Approach                 | WB                                                                                | NB                                                                                | SB                                                                                |       |       |                                                                                   |
| HCM Control Delay, s     | 26.8                                                                              | 0                                                                                 | 2.2                                                                               |       |       |                                                                                   |
| HCM LOS                  | D                                                                                 |                                                                                   |                                                                                   |       |       |                                                                                   |
| Minor Lane/Major Mvmt    | NBT                                                                               | NBWB                                                                              | NBWB                                                                              | NBWB  | SBL   | SBT                                                                               |
| Capacity (veh/h)         | -                                                                                 | -                                                                                 | 191                                                                               | 534   | 951   | -                                                                                 |
| HCM Lane V/C Ratio       | -                                                                                 | -                                                                                 | 0.586                                                                             | 0.456 | 0.122 | -                                                                                 |
| HCM Control Delay (s)    | -                                                                                 | -                                                                                 | 47.5                                                                              | 17.3  | 9.3   | 0                                                                                 |
| HCM Lane LOS             | -                                                                                 | -                                                                                 | E                                                                                 | C     | A     | A                                                                                 |
| HCM 95th %tile Q(veh)    | -                                                                                 | -                                                                                 | 3.2                                                                               | 2.4   | 0.4   | -                                                                                 |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 27                                                                                | 110                                                                               | 119                                                                               | 335                                                                               | 169                                                                               | 76                                                                                | 63                                                                                  | 790                                                                                 | 73                                                                                  | 39                                                                                  | 1460                                                                                | 44                                                                                  |
| Future Volume (veh/h)        | 27                                                                                | 110                                                                               | 119                                                                               | 335                                                                               | 169                                                                               | 76                                                                                | 63                                                                                  | 790                                                                                 | 73                                                                                  | 39                                                                                  | 1460                                                                                | 44                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1870                                                                              | 1856                                                                              | 1841                                                                              | 1841                                                                              | 1811                                                                                | 1767                                                                                | 1900                                                                                | 1900                                                                                | 1870                                                                                | 1707                                                                                |
| Adj Flow Rate, veh/h         | 29                                                                                | 120                                                                               | 129                                                                               | 364                                                                               | 184                                                                               | 83                                                                                | 68                                                                                  | 859                                                                                 | 79                                                                                  | 42                                                                                  | 1587                                                                                | 48                                                                                  |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 4                                                                                 | 6                                                                                   | 9                                                                                   | 0                                                                                   | 0                                                                                   | 2                                                                                   | 13                                                                                  |
| Cap, veh/h                   | 202                                                                               | 211                                                                               | 176                                                                               | 355                                                                               | 247                                                                               | 112                                                                               | 200                                                                                 | 1533                                                                                | 735                                                                                 | 364                                                                                 | 1623                                                                                | 661                                                                                 |
| Arrive On Green              | 0.03                                                                              | 0.11                                                                              | 0.11                                                                              | 0.12                                                                              | 0.21                                                                              | 0.21                                                                              | 0.07                                                                                | 0.46                                                                                | 0.46                                                                                | 0.07                                                                                | 0.46                                                                                | 0.46                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 1900                                                                              | 1585                                                                              | 1767                                                                              | 1201                                                                              | 542                                                                               | 1725                                                                                | 3357                                                                                | 1610                                                                                | 1810                                                                                | 3554                                                                                | 1447                                                                                |
| Grp Volume(v), veh/h         | 29                                                                                | 120                                                                               | 129                                                                               | 364                                                                               | 0                                                                                 | 267                                                                               | 68                                                                                  | 859                                                                                 | 79                                                                                  | 42                                                                                  | 1587                                                                                | 48                                                                                  |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                              | 1585                                                                              | 1767                                                                              | 0                                                                                 | 1743                                                                              | 1725                                                                                | 1678                                                                                | 1610                                                                                | 1810                                                                                | 1777                                                                                | 1447                                                                                |
| Q Serve(g_s), s              | 1.1                                                                               | 5.4                                                                               | 7.1                                                                               | 11.1                                                                              | 0.0                                                                               | 12.9                                                                              | 1.8                                                                                 | 16.8                                                                                | 2.5                                                                                 | 1.0                                                                                 | 39.5                                                                                | 1.7                                                                                 |
| Cycle Q Clear(g_c), s        | 1.1                                                                               | 5.4                                                                               | 7.1                                                                               | 11.1                                                                              | 0.0                                                                               | 12.9                                                                              | 1.8                                                                                 | 16.8                                                                                | 2.5                                                                                 | 1.0                                                                                 | 39.5                                                                                | 1.7                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.31                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 202                                                                               | 211                                                                               | 176                                                                               | 355                                                                               | 0                                                                                 | 359                                                                               | 200                                                                                 | 1533                                                                                | 735                                                                                 | 364                                                                                 | 1623                                                                                | 661                                                                                 |
| V/C Ratio(X)                 | 0.14                                                                              | 0.57                                                                              | 0.73                                                                              | 1.02                                                                              | 0.00                                                                              | 0.74                                                                              | 0.34                                                                                | 0.56                                                                                | 0.11                                                                                | 0.12                                                                                | 0.98                                                                                | 0.07                                                                                |
| Avail Cap(c_a), veh/h        | 251                                                                               | 211                                                                               | 176                                                                               | 355                                                                               | 0                                                                                 | 359                                                                               | 200                                                                                 | 1533                                                                                | 735                                                                                 | 364                                                                                 | 1623                                                                                | 661                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 27.8                                                                              | 38.0                                                                              | 38.7                                                                              | 35.1                                                                              | 0.0                                                                               | 33.5                                                                              | 20.0                                                                                | 17.9                                                                                | 14.0                                                                                | 12.2                                                                                | 24.0                                                                                | 13.7                                                                                |
| Incr Delay (d2), s/veh       | 0.3                                                                               | 3.7                                                                               | 14.7                                                                              | 54.1                                                                              | 0.0                                                                               | 8.3                                                                               | 0.8                                                                                 | 0.8                                                                                 | 0.1                                                                                 | 0.1                                                                                 | 17.4                                                                                | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.5                                                                               | 2.7                                                                               | 3.3                                                                               | 7.5                                                                               | 0.0                                                                               | 6.0                                                                               | 0.6                                                                                 | 5.7                                                                                 | 0.9                                                                                 | 0.4                                                                                 | 17.6                                                                                | 0.5                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 28.1                                                                              | 41.7                                                                              | 53.4                                                                              | 89.2                                                                              | 0.0                                                                               | 41.9                                                                              | 20.8                                                                                | 18.6                                                                                | 14.1                                                                                | 12.3                                                                                | 41.4                                                                                | 13.8                                                                                |
| LnGrp LOS                    | C                                                                                 | D                                                                                 | D                                                                                 | F                                                                                 | A                                                                                 | D                                                                                 | C                                                                                   | B                                                                                   | B                                                                                   | B                                                                                   | D                                                                                   | B                                                                                   |
| Approach Vol, veh/h          | 278                                                                               |                                                                                   |                                                                                   |                                                                                   | 631                                                                               |                                                                                   |                                                                                     |                                                                                     | 1006                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 45.7                                                                              |                                                                                   |                                                                                   |                                                                                   | 69.2                                                                              |                                                                                   |                                                                                     |                                                                                     | 18.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.4                                                                              | 47.1                                                                              | 15.6                                                                              | 15.9                                                                              | 11.4                                                                              | 47.1                                                                              | 7.1                                                                                 | 24.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.4                                                                               | 6.0                                                                               | 4.5                                                                               | 5.9                                                                               | 5.4                                                                               | 6.0                                                                               | 4.5                                                                                 | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.0                                                                               | 41.1                                                                              | 11.1                                                                              | 10.0                                                                              | 6.0                                                                               | 41.1                                                                              | 5.0                                                                                 | 16.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.8                                                                               | 41.5                                                                              | 13.1                                                                              | 9.1                                                                               | 3.0                                                                               | 18.8                                                                              | 3.1                                                                                 | 14.9                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 10.3                                                                              | 0.0                                                                                 | 0.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 39.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |                                                                                   |      |        |                                                                                   |        |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 2.3                                                                               |      |        |                                                                                   |        |                                                                                   |
| Movement                 | EBT                                                                               | EBR  | WBL    | WBT                                                                               | NBL    | NBR                                                                               |
| Lane Configurations      |  |      |        |  |        |  |
| Traffic Vol, veh/h       | 173                                                                               | 24   | 55     | 271                                                                               | 47     | 21                                                                                |
| Future Vol, veh/h        | 173                                                                               | 24   | 55     | 271                                                                               | 47     | 21                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0      | 0                                                                                 | 0      | 0                                                                                 |
| Sign Control             | Free                                                                              | Free | Free   | Free                                                                              | Stop   | Stop                                                                              |
| RT Channelized           | -                                                                                 | None | -      | None                                                                              | -      | None                                                                              |
| Storage Length           | -                                                                                 | -    | -      | -                                                                                 | 0      | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | -      | 0                                                                                 | 0      | -                                                                                 |
| Grade, %                 | 0                                                                                 | -    | -      | 0                                                                                 | 0      | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92   | 92     | 92                                                                                | 92     | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 4    | 22     | 3                                                                                 | 0      | 20                                                                                |
| Mvmt Flow                | 188                                                                               | 26   | 60     | 295                                                                               | 51     | 23                                                                                |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Major/Minor              | Major1                                                                            |      | Major2 |                                                                                   | Minor1 |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0    | 214    | 0                                                                                 | 616    | 201                                                                               |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 201    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 415    | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -    | 4.32   | -                                                                                 | 6.4    | 6.4                                                                               |
| Critical Hdwy Stg 1      | -                                                                                 | -    | -      | -                                                                                 | 5.4    | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -    | -      | -                                                                                 | 5.4    | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -    | 2.398  | -                                                                                 | 3.5    | 3.48                                                                              |
| Pot Cap-1 Maneuver       | -                                                                                 | -    | 1246   | -                                                                                 | 457    | 796                                                                               |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 838    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 671    | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -    |        | -                                                                                 |        |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -    | 1246   | -                                                                                 | 430    | 796                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -    | -      | -                                                                                 | 430    | -                                                                                 |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 789    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 671    | -                                                                                 |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Approach                 | EB                                                                                |      | WB     |                                                                                   | NB     |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 |      | 1.4    |                                                                                   | 13.4   |                                                                                   |
| HCM LOS                  | B                                                                                 |      |        |                                                                                   |        |                                                                                   |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT  | EBR    | WBL                                                                               | WBT    |                                                                                   |
| Capacity (veh/h)         | 501                                                                               | -    | -      | 1246                                                                              | -      |                                                                                   |
| HCM Lane V/C Ratio       | 0.148                                                                             | -    | -      | 0.048                                                                             | -      |                                                                                   |
| HCM Control Delay (s)    | 13.4                                                                              | -    | -      | 8                                                                                 | 0      |                                                                                   |
| HCM Lane LOS             | B                                                                                 | -    | -      | A                                                                                 | A      |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.5                                                                               | -    | -      | 0.2                                                                               | -      |                                                                                   |

# HCM 6th Signalized Intersection Summary

## 8: Coldwater Rd & Cedar Canyons Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |      | ↔    |      |      | ↔    |      |      | ↔    |      |
| Traffic Volume (veh/h)       | 50                                                                                 | 38   | 180  | 53   | 119  | 7    | 90   | 145  | 8    | 6    | 302  | 39   |
| Future Volume (veh/h)        | 50                                                                                 | 38   | 180  | 53   | 119  | 7    | 90   | 145  | 8    | 6    | 302  | 39   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1870 | 1870 | 1870 | 1811 | 1811 | 1811 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h         | 54                                                                                 | 41   | 196  | 58   | 129  | 8    | 98   | 158  | 9    | 7    | 328  | 42   |
| 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 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 2    | 2    | 2    | 6    | 6    | 6    | 2    | 2    | 2    |
| Cap, veh/h                   | 239                                                                                | 94   | 307  | 296  | 372  | 20   | 349  | 370  | 18   | 162  | 530  | 67   |
| Arrive On Green              | 0.28                                                                               | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| Sat Flow, veh/h              | 193                                                                                | 333  | 1084 | 332  | 1317 | 71   | 414  | 1125 | 54   | 13   | 1611 | 204  |
| Grp Volume(v), veh/h         | 291                                                                                | 0    | 0    | 195  | 0    | 0    | 265  | 0    | 0    | 377  | 0    | 0    |
| Grp Sat Flow(s),veh/h/ln     | 1610                                                                               | 0    | 0    | 1720 | 0    | 0    | 1593 | 0    | 0    | 1827 | 0    | 0    |
| Q Serve(g_s), s              | 1.4                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Cycle Q Clear(g_c), s        | 3.6                                                                                | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.7  | 0.0  | 0.0  | 4.0  | 0.0  | 0.0  |
| Prop In Lane                 | 0.19                                                                               |      | 0.67 | 0.30 |      | 0.04 | 0.37 |      | 0.03 | 0.02 |      | 0.11 |
| Lane Grp Cap(c), veh/h       | 639                                                                                | 0    | 0    | 688  | 0    | 0    | 736  | 0    | 0    | 759  | 0    | 0    |
| V/C Ratio(X)                 | 0.46                                                                               | 0.00 | 0.00 | 0.28 | 0.00 | 0.00 | 0.36 | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h        | 1413                                                                               | 0    | 0    | 1460 | 0    | 0    | 1351 | 0    | 0    | 1572 | 0    | 0    |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh     | 7.2                                                                                | 0.0  | 0.0  | 6.7  | 0.0  | 0.0  | 6.1  | 0.0  | 0.0  | 6.6  | 0.0  | 0.0  |
| Incr Delay (d2), s/veh       | 0.5                                                                                | 0.0  | 0.0  | 0.2  | 0.0  | 0.0  | 0.3  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 0.5                                                                                | 0.0  | 0.0  | 0.3  | 0.0  | 0.0  | 0.3  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 7.7                                                                                | 0.0  | 0.0  | 6.9  | 0.0  | 0.0  | 6.4  | 0.0  | 0.0  | 7.1  | 0.0  | 0.0  |
| LnGrp LOS                    | A                                                                                  | A    | A    | A    | A    | A    | A    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h          |                                                                                    | 291  |      |      | 195  |      |      | 265  |      |      | 377  |      |
| Approach Delay, s/veh        |                                                                                    | 7.7  |      |      | 6.9  |      |      | 6.4  |      |      | 7.1  |      |
| Approach LOS                 |                                                                                    | A    |      |      | A    |      |      | A    |      |      | A    |      |
| Timer - Assigned Phs         |                                                                                    | 2    |      | 4    |      | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |                                                                                    | 12.1 |      | 11.1 |      | 12.1 |      | 11.1 |      |      |      |      |
| Change Period (Y+Rc), s      |                                                                                    | 4.5  |      | 4.5  |      | 4.5  |      | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s  |                                                                                    | 18.0 |      | 18.0 |      | 18.0 |      | 18.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |                                                                                    | 4.7  |      | 5.6  |      | 6.0  |      | 4.0  |      |      |      |      |
| Green Ext Time (p_c), s      |                                                                                    | 1.2  |      | 1.3  |      | 1.6  |      | 0.8  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |                                                                                    |      |      | 7.1  |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |                                                                                    |      |      | A    |      |      |      |      |      |      |      |      |

## **PM Phase II**



| Intersection             |        |        |        |       |       |      |
|--------------------------|--------|--------|--------|-------|-------|------|
| Int Delay, s/veh         | 9.3    |        |        |       |       |      |
| Movement                 | WBL    | WBR    | NBT    | NBR   | SBL   | SBT  |
| Lane Configurations      | W      | W      | T      | T     | T     | T    |
| Traffic Vol, veh/h       | 85     | 75     | 454    | 96    | 160   | 316  |
| Future Vol, veh/h        | 85     | 75     | 454    | 96    | 160   | 316  |
| Conflicting Peds, #/hr   | 0      | 0      | 0      | 0     | 0     | 0    |
| Sign Control             | Stop   | Stop   | Free   | Free  | Free  | Free |
| RT Channelized           | -      | None   | -      | None  | -     | None |
| Storage Length           | -      | -      | -      | -     | -     | -    |
| Veh in Median Storage, # | -      | -      | 0      | -     | -     | 0    |
| Grade, %                 | 0      | -      | 0      | -     | -     | 0    |
| Peak Hour Factor         | 92     | 92     | 92     | 92    | 92    | 92   |
| Heavy Vehicles, %        | 3      | 9      | 3      | 4     | 9     | 2    |
| Mvmt Flow                | 92     | 82     | 493    | 104   | 174   | 343  |
| Major/Minor              | Minor1 | Major1 | Major2 |       |       |      |
| Conflicting Flow All     | 1236   | 545    | 0      | 0     | 597   | 0    |
| Stage 1                  | 545    | -      | -      | -     | -     | -    |
| Stage 2                  | 691    | -      | -      | -     | -     | -    |
| Critical Hdwy            | 6.43   | 6.29   | -      | -     | 4.19  | -    |
| Critical Hdwy Stg 1      | 5.43   | -      | -      | -     | -     | -    |
| Critical Hdwy Stg 2      | 5.43   | -      | -      | -     | -     | -    |
| Follow-up Hdwy           | 3.527  | 3.381  | -      | -     | 2.281 | -    |
| Pot Cap-1 Maneuver       | 194    | 525    | -      | -     | 946   | -    |
| Stage 1                  | 579    | -      | -      | -     | -     | -    |
| Stage 2                  | 495    | -      | -      | -     | -     | -    |
| Platoon blocked, %       | -      | -      | -      | -     | -     | -    |
| Mov Cap-1 Maneuver       | 150    | 525    | -      | -     | 946   | -    |
| Mov Cap-2 Maneuver       | 150    | -      | -      | -     | -     | -    |
| Stage 1                  | 448    | -      | -      | -     | -     | -    |
| Stage 2                  | 495    | -      | -      | -     | -     | -    |
| Approach                 | WB     | NB     | SB     |       |       |      |
| HCM Control Delay, s     | 9.7    | 0      | 3.2    |       |       |      |
| HCM LOS                  | F      |        |        |       |       |      |
| Minor Lane/Major Mvmt    | NBT    | NBWB   | NBLn1  | SBL   | SBT   |      |
| Capacity (veh/h)         | -      | -      | 226    | 946   | -     |      |
| HCM Lane V/C Ratio       | -      | -      | 0.77   | 0.184 | -     |      |
| HCM Control Delay (s)    | -      | -      | 59.7   | 9.7   | 0     |      |
| HCM Lane LOS             | -      | -      | F      | A     | A     |      |
| HCM 95th %tile Q(veh)    | -      | -      | 5.5    | 0.7   | -     |      |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |      | ↔    |      | ↔    | ↔    |      | ↔    | ↔    |      |
| Traffic Volume (veh/h)       | 47                                                                                 | 142  | 75   | 129  | 101  | 73   | 80   | 1510 | 277  | 96   | 1178 | 31   |
| Future Volume (veh/h)        | 47                                                                                 | 142  | 75   | 129  | 101  | 73   | 80   | 1510 | 277  | 96   | 1178 | 31   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900 | 1900 | 1900 | 1856 | 1885 | 1885 | 1826 | 1856 | 1856 |
| Adj Flow Rate, veh/h         | 51                                                                                 | 154  | 82   | 140  | 110  | 79   | 87   | 1641 | 301  | 104  | 1280 | 34   |
| 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 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 3    | 1    | 1    | 5    | 3    | 3    |
| Cap, veh/h                   | 92                                                                                 | 266  | 131  | 173  | 120  | 81   | 245  | 1662 | 296  | 126  | 1925 | 51   |
| Arrive On Green              | 0.29                                                                               | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 | 0.04 | 0.55 | 0.55 | 0.04 | 0.55 | 0.55 |
| Sat Flow, veh/h              | 215                                                                                | 927  | 457  | 478  | 420  | 284  | 1767 | 3038 | 540  | 1739 | 3508 | 93   |
| Grp Volume(v), veh/h         | 287                                                                                | 0    | 0    | 329  | 0    | 0    | 87   | 946  | 996  | 104  | 643  | 671  |
| Grp Sat Flow(s),veh/h/ln     | 1599                                                                               | 0    | 0    | 1181 | 0    | 0    | 1767 | 1791 | 1788 | 1739 | 1763 | 1839 |
| Q Serve(g_s), s              | 0.0                                                                                | 0.0  | 0.0  | 17.9 | 0.0  | 0.0  | 3.0  | 71.1 | 76.6 | 4.1  | 36.3 | 36.3 |
| Cycle Q Clear(g_c), s        | 21.1                                                                               | 0.0  | 0.0  | 38.9 | 0.0  | 0.0  | 3.0  | 71.1 | 76.6 | 4.1  | 36.3 | 36.3 |
| Prop In Lane                 | 0.18                                                                               |      | 0.29 | 0.43 |      | 0.24 | 1.00 |      | 0.30 | 1.00 |      | 0.05 |
| Lane Grp Cap(c), veh/h       | 488                                                                                | 0    | 0    | 375  | 0    | 0    | 245  | 980  | 978  | 126  | 967  | 1009 |
| V/C Ratio(X)                 | 0.59                                                                               | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.36 | 0.97 | 1.02 | 0.82 | 0.66 | 0.67 |
| Avail Cap(c_a), veh/h        | 488                                                                                | 0    | 0    | 375  | 0    | 0    | 295  | 980  | 978  | 136  | 967  | 1009 |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.71 | 0.71 | 0.71 |
| Uniform Delay (d), s/veh     | 42.8                                                                               | 0.0  | 0.0  | 51.3 | 0.0  | 0.0  | 18.3 | 30.5 | 31.7 | 36.7 | 22.4 | 22.5 |
| Incr Delay (d2), s/veh       | 1.9                                                                                | 0.0  | 0.0  | 20.4 | 0.0  | 0.0  | 0.7  | 21.6 | 33.4 | 22.9 | 2.6  | 2.5  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 8.6                                                                                | 0.0  | 0.0  | 13.3 | 0.0  | 0.0  | 1.2  | 35.5 | 40.9 | 2.7  | 15.5 | 16.2 |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 44.7                                                                               | 0.0  | 0.0  | 71.7 | 0.0  | 0.0  | 19.1 | 52.1 | 65.1 | 59.5 | 25.0 | 24.9 |
| LnGrp LOS                    | D                                                                                  | A    | A    | E    | A    | A    | B    | D    | F    | E    | C    | C    |
| Approach Vol, veh/h          |                                                                                    | 287  |      |      | 329  |      |      | 2029 |      |      | 1418 |      |
| Approach Delay, s/veh        |                                                                                    | 44.7 |      |      | 71.7 |      |      | 57.1 |      |      | 27.5 |      |
| Approach LOS                 |                                                                                    | D    |      |      | E    |      |      | E    |      |      | C    |      |
| Timer - Assigned Phs         | 1                                                                                  | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 11.2                                                                               | 82.8 |      | 46.0 | 11.4 | 82.6 |      | 46.0 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.4                                                                                | 6.0  |      | 5.9  | 5.4  | 6.0  |      | 5.9  |      |      |      |      |
| Max Green Setting (Gmax), s  | 9.8                                                                                | 72.8 |      | 40.1 | 6.8  | 75.8 |      | 40.1 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 5.0                                                                                | 38.3 |      | 23.1 | 6.1  | 78.6 |      | 40.9 |      |      |      |      |
| Green Ext Time (p_c), s      | 0.1                                                                                | 21.5 |      | 1.5  | 0.0  | 0.0  |      | 0.0  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |                                                                                    |      | 47.1 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |                                                                                    |      | D    |      |      |      |      |      |      |      |      |      |

| Intersection             |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 3                                                                                 |      |      |                                                                                   |                                                                                   |      |
| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 204                                                                               | 71   | 71   | 211                                                                               | 54                                                                                | 53   |
| Future Vol, veh/h        | 204                                                                               | 71   | 71   | 211                                                                               | 54                                                                                | 53   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Free                                                                              | Free | Free | Free                                                                              | Stop                                                                              | Stop |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | -                                                                                 | -    | -    | -                                                                                 | 0                                                                                 | -    |
| Veh in Median Storage, # | -                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 92   | 92                                                                                | 92                                                                                | 92   |
| Heavy Vehicles, %        | 0                                                                                 | 2    | 0    | 1                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 222                                                                               | 77   | 77   | 229                                                                               | 59                                                                                | 58   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 299    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.1    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.2    |
| Pot Cap-1 Maneuver   | -      | -      | 1274   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1274   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB | NB   |
|----------------------|----|----|------|
| HCM Control Delay, s | 0  | 2  | 13.5 |
| HCM LOS              |    |    | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 537   | -   | -   | 1274  | -   |
| HCM Lane V/C Ratio    | 0.217 | -   | -   | 0.061 | -   |
| HCM Control Delay (s) | 13.5  | -   | -   | 8     | 0   |
| HCM Lane LOS          | B     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | 0.8   | -   | -   | 0.2   | -   |

| Intersection               |        |                        |          |                            |        |       |        |                                |      |      |      |      |
|----------------------------|--------|------------------------|----------|----------------------------|--------|-------|--------|--------------------------------|------|------|------|------|
| Int Delay, s/veh           | 104    |                        |          |                            |        |       |        |                                |      |      |      |      |
| Movement                   | EBL    | EBT                    | EBR      | WBL                        | WBT    | WBR   | NBL    | NBT                            | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations        |        | ↕                      |          |                            | ↕      |       |        | ↕                              |      |      | ↕    |      |
| Traffic Vol, veh/h         | 53     | 74                     | 112      | 25                         | 57     | 4     | 188    | 440                            | 88   | 16   | 268  | 65   |
| Future Vol, veh/h          | 53     | 74                     | 112      | 25                         | 57     | 4     | 188    | 440                            | 88   | 16   | 268  | 65   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0        | 0                          | 0      | 0     | 0      | 0                              | 0    | 0    | 0    | 0    |
| Sign Control               | Stop   | Stop                   | Stop     | Stop                       | Stop   | Stop  | Free   | Free                           | Free | Free | Free | Free |
| RT Channelized             | -      | -                      | None     | -                          | -      | None  | -      | -                              | None | -    | -    | None |
| Storage Length             | -      | -                      | -        | -                          | -      | -     | -      | -                              | -    | -    | -    | -    |
| Veh in Median Storage, #-  | 0      | -                      | -        | -                          | 0      | -     | -      | 0                              | -    | -    | 0    | -    |
| Grade, %                   | -      | 0                      | -        | -                          | 0      | -     | -      | 0                              | -    | -    | 0    | -    |
| Peak Hour Factor           | 92     | 92                     | 92       | 92                         | 92     | 92    | 92     | 92                             | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %          | 8      | 0                      | 0        | 0                          | 4      | 0     | 0      | 1                              | 0    | 0    | 3    | 0    |
| Mvmt Flow                  | 58     | 80                     | 122      | 27                         | 62     | 4     | 204    | 478                            | 96   | 17   | 291  | 71   |
|                            |        |                        |          |                            |        |       |        |                                |      |      |      |      |
| Major/Minor                | Minor2 |                        | Minor1   |                            | Major1 |       | Major2 |                                |      |      |      |      |
| Conflicting Flow All       | 1328   | 1343                   | 327      | 1396                       | 1330   | 526   | 362    | 0                              | 0    | 574  | 0    | 0    |
| Stage 1                    | 361    | 361                    | -        | 934                        | 934    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 967    | 982                    | -        | 462                        | 396    | -     | -      | -                              | -    | -    | -    | -    |
| Critical Hdwy              | 7.18   | 6.5                    | 6.2      | 7.1                        | 6.54   | 6.2   | 4.1    | -                              | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1        | 6.18   | 5.5                    | -        | 6.1                        | 5.54   | -     | -      | -                              | -    | -    | -    | -    |
| Critical Hdwy Stg 2        | 6.18   | 5.5                    | -        | 6.1                        | 5.54   | -     | -      | -                              | -    | -    | -    | -    |
| Follow-up Hdwy             | 3.572  | 4                      | 3.3      | 3.5                        | 4.036  | 3.3   | 2.2    | -                              | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver         | 128    | 153                    | 719      | 120                        | 153    | 556   | 1208   | -                              | -    | 1009 | -    | -    |
| Stage 1                    | 645    | 629                    | -        | 322                        | 342    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 298    | 330                    | -        | 584                        | 601    | -     | -      | -                              | -    | -    | -    | -    |
| Platoon blocked, %         |        |                        |          |                            |        |       |        | -                              | -    | -    | -    | -    |
| Mov Cap-1 Maneuver         | 58     | 112                    | 719      | 34                         | 112    | 556   | 1208   | -                              | -    | 1009 | -    | -    |
| Mov Cap-2 Maneuver         | 58     | 112                    | -        | 34                         | 112    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 1                    | 482    | 616                    | -        | 241                        | 256    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 168    | 247                    | -        | 413                        | 588    | -     | -      | -                              | -    | -    | -    | -    |
|                            |        |                        |          |                            |        |       |        |                                |      |      |      |      |
| Approach                   | EB     |                        | WB       |                            | NB     |       | SB     |                                |      |      |      |      |
| HCM Control Delay, s       | 47.7   |                        | \$ 332.4 |                            | 2.3    |       | 0.4    |                                |      |      |      |      |
| HCM LOS                    | F      |                        | F        |                            |        |       |        |                                |      |      |      |      |
|                            |        |                        |          |                            |        |       |        |                                |      |      |      |      |
| Minor Lane/Major Mvmt      | NBL    | NBT                    | NBR      | EBLn                       | WBLn   | SBL   | SBT    | SBR                            |      |      |      |      |
| Capacity (veh/h)           | 1208   | -                      | -        | 138                        | 69     | 1009  | -      | -                              |      |      |      |      |
| HCM Lane V/C Ratio         | 0.169  | -                      | -        | 1.882                      | 1.355  | 0.017 | -      | -                              |      |      |      |      |
| HCM Control Delay (s)      | 8.6    | 0                      | \$ 477.7 | \$ 332.4                   | 8.6    | 0     | -      | -                              |      |      |      |      |
| HCM Lane LOS               | A      | A                      | -        | F                          | F      | A     | A      | -                              |      |      |      |      |
| HCM 95th %tile Q(veh)      | 0.6    | -                      | -        | 20.1                       | 7.6    | 0.1   | -      | -                              |      |      |      |      |
|                            |        |                        |          |                            |        |       |        |                                |      |      |      |      |
| Notes                      |        |                        |          |                            |        |       |        |                                |      |      |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |          | +: Computation Not Defined |        |       |        | *: All major volume in platoon |      |      |      |      |

## **PM Phase II Modified**



| Intersection             |                                                                                   |                                                                                   |                                                                                   |       |       |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|-------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 3.6                                                                               |                                                                                   |                                                                                   |       |       |                                                                                   |
| Movement                 | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR   | SBL   | SBT                                                                               |
| Lane Configurations      |  |  |  |       |       |  |
| Traffic Vol, veh/h       | 85                                                                                | 75                                                                                | 454                                                                               | 96    | 160   | 316                                                                               |
| Future Vol, veh/h        | 85                                                                                | 75                                                                                | 454                                                                               | 96    | 160   | 316                                                                               |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0     | 0     | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free  | Free  | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None  | -     | None                                                                              |
| Storage Length           | 150                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | -                                                                                 | -     | -     | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -     | -     | 0                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92    | 92    | 92                                                                                |
| Heavy Vehicles, %        | 3                                                                                 | 9                                                                                 | 3                                                                                 | 4     | 9     | 2                                                                                 |
| Mvmt Flow                | 92                                                                                | 82                                                                                | 493                                                                               | 104   | 174   | 343                                                                               |
| Major/Minor              | Minor1                                                                            | Major1                                                                            | Major2                                                                            |       |       |                                                                                   |
| Conflicting Flow All     | 1236                                                                              | 545                                                                               | 0                                                                                 | 0     | 597   | 0                                                                                 |
| Stage 1                  | 545                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Stage 2                  | 691                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Critical Hdwy            | 4.4                                                                               | 4.4                                                                               | -                                                                                 | -     | 4.19  | -                                                                                 |
| Critical Hdwy Stg 1      | 5.43                                                                              | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Critical Hdwy Stg 2      | 5.43                                                                              | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Follow-up Hdwy           | 3.527                                                                             | 3.381                                                                             | -                                                                                 | -     | 2.281 | -                                                                                 |
| Pot Cap-1 Maneuver       | 389                                                                               | 699                                                                               | -                                                                                 | -     | 946   | -                                                                                 |
| Stage 1                  | 579                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Stage 2                  | 495                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Platoon blocked, %       |                                                                                   |                                                                                   | -                                                                                 | -     |       | -                                                                                 |
| Mov Cap-1 Maneuver       | 301                                                                               | 699                                                                               | -                                                                                 | -     | 946   | -                                                                                 |
| Mov Cap-2 Maneuver       | 301                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Stage 1                  | 448                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Stage 2                  | 495                                                                               | -                                                                                 | -                                                                                 | -     | -     | -                                                                                 |
| Approach                 | WB                                                                                | NB                                                                                | SB                                                                                |       |       |                                                                                   |
| HCM Control Delay, s     | 6.9                                                                               | 0                                                                                 | 3.2                                                                               |       |       |                                                                                   |
| HCM LOS                  | C                                                                                 |                                                                                   |                                                                                   |       |       |                                                                                   |
| Minor Lane/Major Mvmt    | NBT                                                                               | NBL                                                                               | WBLn                                                                              | WBLn2 | SBL   | SBT                                                                               |
| Capacity (veh/h)         | -                                                                                 | -                                                                                 | 301                                                                               | 699   | 946   | -                                                                                 |
| HCM Lane V/C Ratio       | -                                                                                 | -                                                                                 | 0.307                                                                             | 0.117 | 0.184 | -                                                                                 |
| HCM Control Delay (s)    | -                                                                                 | -                                                                                 | 22.2                                                                              | 10.8  | 9.7   | 0                                                                                 |
| HCM Lane LOS             | -                                                                                 | -                                                                                 | C                                                                                 | B     | A     | A                                                                                 |
| HCM 95th %tile Q(veh)    | -                                                                                 | -                                                                                 | 1.3                                                                               | 0.4   | 0.7   | -                                                                                 |

# HCM 6th Signalized Intersection Summary

## 6: State Road 1 & Cedar Canyons Rd

04/19/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 47                                                                                | 142                                                                               | 75                                                                                | 129                                                                               | 101                                                                               | 73                                                                                | 80                                                                                  | 1510                                                                                | 277                                                                                 | 96                                                                                  | 1178                                                                                | 31                                                                                  |
| Future Volume (veh/h)        | 47                                                                                | 142                                                                               | 75                                                                                | 129                                                                               | 101                                                                               | 73                                                                                | 80                                                                                  | 1510                                                                                | 277                                                                                 | 96                                                                                  | 1178                                                                                | 31                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1856                                                                                | 1885                                                                                | 1885                                                                                | 1826                                                                                | 1856                                                                                | 1811                                                                                |
| Adj Flow Rate, veh/h         | 51                                                                                | 154                                                                               | 82                                                                                | 140                                                                               | 110                                                                               | 79                                                                                | 87                                                                                  | 1641                                                                                | 301                                                                                 | 104                                                                                 | 1280                                                                                | 34                                                                                  |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                   | 1                                                                                   | 1                                                                                   | 5                                                                                   | 3                                                                                   | 6                                                                                   |
| Cap, veh/h                   | 186                                                                               | 221                                                                               | 187                                                                               | 225                                                                               | 136                                                                               | 97                                                                                | 291                                                                                 | 1878                                                                                | 837                                                                                 | 214                                                                                 | 1857                                                                                | 809                                                                                 |
| Arrive On Green              | 0.04                                                                              | 0.12                                                                              | 0.12                                                                              | 0.06                                                                              | 0.13                                                                              | 0.13                                                                              | 0.06                                                                                | 0.52                                                                                | 0.52                                                                                | 0.06                                                                                | 0.53                                                                                | 0.53                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 1900                                                                              | 1610                                                                              | 1810                                                                              | 1028                                                                              | 739                                                                               | 1767                                                                                | 3582                                                                                | 1598                                                                                | 1739                                                                                | 3526                                                                                | 1535                                                                                |
| Grp Volume(v), veh/h         | 51                                                                                | 154                                                                               | 82                                                                                | 140                                                                               | 0                                                                                 | 189                                                                               | 87                                                                                  | 1641                                                                                | 301                                                                                 | 104                                                                                 | 1280                                                                                | 34                                                                                  |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                              | 1610                                                                              | 1810                                                                              | 0                                                                                 | 1767                                                                              | 1767                                                                                | 1791                                                                                | 1598                                                                                | 1739                                                                                | 1763                                                                                | 1535                                                                                |
| Q Serve(g_s), s              | 2.2                                                                               | 7.0                                                                               | 4.3                                                                               | 5.0                                                                               | 0.0                                                                               | 9.4                                                                               | 1.9                                                                                 | 36.2                                                                                | 9.9                                                                                 | 2.4                                                                                 | 24.3                                                                                | 1.0                                                                                 |
| Cycle Q Clear(g_c), s        | 2.2                                                                               | 7.0                                                                               | 4.3                                                                               | 5.0                                                                               | 0.0                                                                               | 9.4                                                                               | 1.9                                                                                 | 36.2                                                                                | 9.9                                                                                 | 2.4                                                                                 | 24.3                                                                                | 1.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.42                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 186                                                                               | 221                                                                               | 187                                                                               | 225                                                                               | 0                                                                                 | 233                                                                               | 291                                                                                 | 1878                                                                                | 837                                                                                 | 214                                                                                 | 1857                                                                                | 809                                                                                 |
| V/C Ratio(X)                 | 0.27                                                                              | 0.70                                                                              | 0.44                                                                              | 0.62                                                                              | 0.00                                                                              | 0.81                                                                              | 0.30                                                                                | 0.87                                                                                | 0.36                                                                                | 0.48                                                                                | 0.69                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 214                                                                               | 380                                                                               | 322                                                                               | 225                                                                               | 0                                                                                 | 353                                                                               | 304                                                                                 | 1878                                                                                | 837                                                                                 | 223                                                                                 | 1857                                                                                | 809                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.71                                                                                | 0.71                                                                                | 0.71                                                                                |
| Uniform Delay (d), s/veh     | 32.3                                                                              | 38.2                                                                              | 37.0                                                                              | 35.1                                                                              | 0.0                                                                               | 38.0                                                                              | 12.3                                                                                | 18.8                                                                                | 12.6                                                                                | 19.1                                                                                | 15.8                                                                                | 10.3                                                                                |
| Incr Delay (d2), s/veh       | 0.8                                                                               | 4.3                                                                               | 1.7                                                                               | 5.2                                                                               | 0.0                                                                               | 8.9                                                                               | 0.5                                                                                 | 6.0                                                                                 | 1.2                                                                                 | 1.1                                                                                 | 1.5                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.9                                                                               | 3.4                                                                               | 1.7                                                                               | 0.7                                                                               | 0.0                                                                               | 4.4                                                                               | 0.7                                                                                 | 15.2                                                                                | 3.4                                                                                 | 1.1                                                                                 | 9.4                                                                                 | 0.3                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 33.0                                                                              | 42.5                                                                              | 38.8                                                                              | 40.3                                                                              | 0.0                                                                               | 46.9                                                                              | 12.7                                                                                | 24.8                                                                                | 13.8                                                                                | 20.2                                                                                | 17.3                                                                                | 10.4                                                                                |
| LnGrp LOS                    | C                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | A                                                                                 | D                                                                                 | B                                                                                   | C                                                                                   | B                                                                                   | C                                                                                   | B                                                                                   | B                                                                                   |
| Approach Vol, veh/h          | 287                                                                               |                                                                                   |                                                                                   | 329                                                                               |                                                                                   |                                                                                   | 2029                                                                                |                                                                                     |                                                                                     | 1418                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 39.8                                                                              |                                                                                   |                                                                                   | 44.1                                                                              |                                                                                   |                                                                                   | 22.7                                                                                |                                                                                     |                                                                                     | 17.4                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | C                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.7                                                                              | 53.4                                                                              | 9.5                                                                               | 16.4                                                                              | 11.0                                                                              | 53.2                                                                              | 8.1                                                                                 | 17.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.4                                                                               | 6.0                                                                               | 4.5                                                                               | 5.9                                                                               | 5.4                                                                               | 6.0                                                                               | 4.5                                                                                 | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.0                                                                               | 39.2                                                                              | 5.0                                                                               | 18.0                                                                              | 6.0                                                                               | 39.2                                                                              | 5.0                                                                                 | 18.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.9                                                                               | 26.3                                                                              | 7.0                                                                               | 9.0                                                                               | 4.4                                                                               | 38.2                                                                              | 4.2                                                                                 | 11.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 10.2                                                                              | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                                 | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 23.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 3      |        |      |        |      |      |
| Movement                 | EBT    | EBR    | WBL  | WBT    | NBL  | NBR  |
| Lane Configurations      |        |        |      |        |      |      |
| Traffic Vol, veh/h       | 204    | 71     | 71   | 211    | 54   | 53   |
| Future Vol, veh/h        | 204    | 71     | 71   | 211    | 54   | 53   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | -      | 0    | -    |
| Veh in Median Storage, # | 0      | -      | -    | 0      | 0    | -    |
| Grade, %                 | 0      | -      | -    | 0      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 0      | 2      | 0    | 1      | 0    | 0    |
| Mvmt Flow                | 222    | 77     | 77   | 229    | 59   | 58   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor1 |      |      |
| Conflicting Flow All     | 0      | 0      | 299  | 0      | 644  | 261  |
| Stage 1                  | -      | -      | -    | -      | 261  | -    |
| Stage 2                  | -      | -      | -    | -      | 383  | -    |
| Critical Hdwy            | -      | -      | 4.1  | -      | 6.4  | 6.2  |
| Critical Hdwy Stg 1      | -      | -      | -    | -      | 5.4  | -    |
| Critical Hdwy Stg 2      | -      | -      | -    | -      | 5.4  | -    |
| Follow-up Hdwy           | -      | -      | 2.2  | -      | 3.5  | 3.3  |
| Pot Cap-1 Maneuver       | -      | -      | 1274 | -      | 440  | 783  |
| Stage 1                  | -      | -      | -    | -      | 787  | -    |
| Stage 2                  | -      | -      | -    | -      | 694  | -    |
| Platoon blocked, %       | -      | -      |      | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | 1274 | -      | 410  | 783  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | 410  | -    |
| Stage 1                  | -      | -      | -    | -      | 733  | -    |
| Stage 2                  | -      | -      | -    | -      | 694  | -    |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | NB     |      |      |
| HCM Control Delay, s     | 0      | 2      |      | 13.5   |      |      |
| HCM LOS                  | B      |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT    | EBR  | WBL    | WBT  |      |
| Capacity (veh/h)         | 537    | -      | -    | 1274   | -    |      |
| HCM Lane V/C Ratio       | 0.217  | -      | -    | 0.061  | -    |      |
| HCM Control Delay (s)    | 13.5   | -      | -    | 8      | 0    |      |
| HCM Lane LOS             | B      | -      | -    | A      | A    |      |
| HCM 95th %tile Q(veh)    | 0.8    | -      | -    | 0.2    | -    |      |

# HCM 6th Signalized Intersection Summary

## 8: Coldwater Rd & Cedar Canyons Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Volume (veh/h)       | 53                                                                                 | 74   | 112  | 25   | 57   | 4    | 188  | 440  | 88   | 16   | 268  | 65   |
| Future Volume (veh/h)        | 53                                                                                 | 74   | 112  | 25   | 57   | 4    | 188  | 440  | 88   | 16   | 268  | 65   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1841 | 1841 | 1841 | 1885 | 1885 | 1885 | 1856 | 1856 | 1856 |
| Adj Flow Rate, veh/h         | 58                                                                                 | 80   | 122  | 27   | 62   | 4    | 204  | 478  | 96   | 17   | 291  | 71   |
| 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 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 4    | 4    | 4    | 1    | 1    | 1    | 3    | 3    | 3    |
| Cap, veh/h                   | 157                                                                                | 131  | 164  | 167  | 292  | 16   | 307  | 603  | 113  | 103  | 816  | 192  |
| Arrive On Green              | 0.21                                                                               | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| Sat Flow, veh/h              | 258                                                                                | 621  | 777  | 279  | 1387 | 75   | 346  | 1041 | 195  | 27   | 1409 | 331  |
| Grp Volume(v), veh/h         | 260                                                                                | 0    | 0    | 93   | 0    | 0    | 778  | 0    | 0    | 379  | 0    | 0    |
| Grp Sat Flow(s),veh/h/ln     | 1657                                                                               | 0    | 0    | 1742 | 0    | 0    | 1583 | 0    | 0    | 1767 | 0    | 0    |
| Q Serve(g_s), s              | 3.7                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 12.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Cycle Q Clear(g_c), s        | 6.2                                                                                | 0.0  | 0.0  | 1.8  | 0.0  | 0.0  | 16.8 | 0.0  | 0.0  | 4.8  | 0.0  | 0.0  |
| Prop In Lane                 | 0.22                                                                               |      | 0.47 | 0.29 |      | 0.04 | 0.26 |      | 0.12 | 0.04 |      | 0.19 |
| Lane Grp Cap(c), veh/h       | 452                                                                                | 0    | 0    | 475  | 0    | 0    | 1023 | 0    | 0    | 1112 | 0    | 0    |
| V/C Ratio(X)                 | 0.58                                                                               | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.76 | 0.00 | 0.00 | 0.34 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h        | 795                                                                                | 0    | 0    | 806  | 0    | 0    | 1664 | 0    | 0    | 1830 | 0    | 0    |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh     | 15.7                                                                               | 0.0  | 0.0  | 14.1 | 0.0  | 0.0  | 7.0  | 0.0  | 0.0  | 4.8  | 0.0  | 0.0  |
| Incr Delay (d2), s/veh       | 1.2                                                                                | 0.0  | 0.0  | 0.2  | 0.0  | 0.0  | 1.2  | 0.0  | 0.0  | 0.2  | 0.0  | 0.0  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 1.9                                                                                | 0.0  | 0.0  | 0.6  | 0.0  | 0.0  | 2.3  | 0.0  | 0.0  | 0.8  | 0.0  | 0.0  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 16.9                                                                               | 0.0  | 0.0  | 14.3 | 0.0  | 0.0  | 8.2  | 0.0  | 0.0  | 5.0  | 0.0  | 0.0  |
| LnGrp LOS                    | B                                                                                  | A    | A    | B    | A    | A    | A    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h          |                                                                                    | 260  |      |      | 93   |      |      | 778  |      |      | 379  |      |
| Approach Delay, s/veh        |                                                                                    | 16.9 |      |      | 14.3 |      |      | 8.2  |      |      | 5.0  |      |
| Approach LOS                 |                                                                                    | B    |      |      | B    |      |      | A    |      |      | A    |      |
| Timer - Assigned Phs         |                                                                                    | 2    |      | 4    |      | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |                                                                                    | 29.3 |      | 13.5 |      | 29.3 |      | 13.5 |      |      |      |      |
| Change Period (Y+Rc), s      |                                                                                    | 4.5  |      | 4.5  |      | 4.5  |      | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s  |                                                                                    | 42.9 |      | 18.1 |      | 42.9 |      | 18.1 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |                                                                                    | 18.8 |      | 8.2  |      | 6.8  |      | 3.8  |      |      |      |      |
| Green Ext Time (p_c), s      |                                                                                    | 6.0  |      | 0.9  |      | 2.3  |      | 0.3  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |                                                                                    |      | 9.3  |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |                                                                                    |      | A    |      |      |      |      |      |      |      |      |      |

# Appendix C

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## **Corridor 3: Shoaff Road from Hand Road to Coldwater Road Existing, Phase I, and Phase II Synchro 10 outputs**



**AM Existing**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

04/19/2019

| Intersection              |        |       |       |        |       |       |        |       |      |        |       |      |  |
|---------------------------|--------|-------|-------|--------|-------|-------|--------|-------|------|--------|-------|------|--|
| Int Delay, s/veh          | 7.7    |       |       |        |       |       |        |       |      |        |       |      |  |
| Movement                  | EBL    | EBT   | EBR   | WBL    | WBT   | WBR   | NBL    | NBT   | NBR  | SBL    | SBT   | SBR  |  |
| Lane Configurations       |        | ↕     |       |        | ↕     |       |        | ↕     |      |        | ↕     |      |  |
| Traffic Vol, veh/h        | 3      | 23    | 21    | 23     | 12    | 7     | 8      | 13    | 10   | 6      | 57    | 0    |  |
| Future Vol, veh/h         | 3      | 23    | 21    | 23     | 12    | 7     | 8      | 13    | 10   | 6      | 57    | 0    |  |
| Conflicting Peds, #/hr    | 0      | 0     | 0     | 0      | 0     | 0     | 0      | 0     | 0    | 0      | 0     | 0    |  |
| Sign Control              | Free   | Free  | Free  | Free   | Free  | Free  | Stop   | Stop  | Stop | Stop   | Stop  | Stop |  |
| RT Channelized            | -      | -     | Free  | -      | -     | Free  | -      | -     | None | -      | -     | None |  |
| Storage Length            | -      | -     | -     | -      | -     | -     | -      | -     | -    | -      | -     | -    |  |
| Veh in Median Storage, #- |        | 0     | -     | -      | 0     | -     | -      | 0     | -    | -      | 0     | -    |  |
| Grade, %                  | -      | 0     | -     | -      | 0     | -     | -      | 0     | -    | -      | 0     | -    |  |
| Peak Hour Factor          | 38     | 82    | 88    | 72     | 50    | 58    | 67     | 54    | 36   | 50     | 68    | 92   |  |
| Heavy Vehicles, %         | 100    | 0     | 5     | 9      | 0     | 0     | 13     | 8     | 10   | 17     | 2     | 0    |  |
| Mvmt Flow                 | 8      | 28    | 24    | 32     | 24    | 12    | 12     | 24    | 28   | 12     | 84    | 0    |  |
|                           |        |       |       |        |       |       |        |       |      |        |       |      |  |
| Major/Minor               | Major1 |       |       | Major2 |       |       | Minor1 |       |      | Minor2 |       |      |  |
| Conflicting Flow All      | 24     | 0     | -     | 28     | 0     | 0     | 174    | 132   | 28   | 158    | 132   | 24   |  |
| Stage 1                   | -      | -     | -     | -      | -     | -     | 44     | 44    | -    | 88     | 88    | -    |  |
| Stage 2                   | -      | -     | -     | -      | -     | -     | 130    | 88    | -    | 70     | 44    | -    |  |
| Critical Hdwy             | 5.1    | -     | -     | 4.19   | -     | -     | 7.23   | 6.58  | 6.3  | 7.27   | 6.52  | 6.2  |  |
| Critical Hdwy Stg 1       | -      | -     | -     | -      | -     | -     | 6.23   | 5.58  | -    | 6.27   | 5.52  | -    |  |
| Critical Hdwy Stg 2       | -      | -     | -     | -      | -     | -     | 6.23   | 5.58  | -    | 6.27   | 5.52  | -    |  |
| Follow-up Hdwy            | 3.1    | -     | -     | 2.281  | -     | -     | 3.617  | 4.072 | 3.39 | 3.653  | 4.018 | 3.3  |  |
| Pot Cap-1 Maneuver        | 1134   | -     | 0     | 1541   | -     | 0     | 765    | 748   | 1025 | 775    | 759   | 1058 |  |
| Stage 1                   | -      | -     | 0     | -      | -     | 0     | 943    | 847   | -    | 884    | 822   | -    |  |
| Stage 2                   | -      | -     | 0     | -      | -     | 0     | 848    | 810   | -    | 904    | 858   | -    |  |
| Platoon blocked, %        |        | -     |       |        | -     |       |        |       |      |        |       |      |  |
| Mov Cap-1 Maneuver        | 134    | -     | -     | 1541   | -     | -     | 684    | 727   | 1025 | 719    | 738   | 1058 |  |
| Mov Cap-2 Maneuver        |        | -     | -     | -      | -     | -     | 684    | 727   | -    | 719    | 738   | -    |  |
| Stage 1                   |        | -     | -     | -      | -     | -     | 936    | 841   | -    | 878    | 805   | -    |  |
| Stage 2                   |        | -     | -     | -      | -     | -     | 744    | 793   | -    | 848    | 852   | -    |  |
|                           |        |       |       |        |       |       |        |       |      |        |       |      |  |
| Approach                  | EB     |       |       | WB     |       |       | NB     |       |      | SB     |       |      |  |
| HCM Control Delay, s      | 1.8    |       |       | 4.2    |       |       | 9.8    |       |      | 10.6   |       |      |  |
| HCM LOS                   |        |       |       |        |       |       | A      |       |      | B      |       |      |  |
|                           |        |       |       |        |       |       |        |       |      |        |       |      |  |
| Minor Lane/Major Mvmt     | NBLn1  | EBL   | EBT   | WBL    | WBT   | SBLn1 |        |       |      |        |       |      |  |
| Capacity (veh/h)          |        | 821   | 1134  | -      | 1541  | -     | 736    |       |      |        |       |      |  |
| HCM Lane V/C Ratio        |        | 0.078 | 0.007 | -      | 0.021 | -     | 0.13   |       |      |        |       |      |  |
| HCM Control Delay (s)     |        | 9.8   | 8.2   | 0      | 7.4   | 0     | 10.6   |       |      |        |       |      |  |
| HCM Lane LOS              |        | A     | A     | A      | A     | A     | B      |       |      |        |       |      |  |
| HCM 95th %tile Q(veh)     |        | 0.3   | 0     | -      | 0.1   | -     | 0.4    |       |      |        |       |      |  |

**HCM 6th TWSC**  
**10: Old State Road 1 & Shoaff Rd**

04/19/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 5    |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↔    |      |      | ↔    |      |      | ↔    |      |      | ↔    |      |
| Traffic Vol, veh/h        | 6    | 11   | 38   | 22   | 8    | 4    | 33   | 30   | 10   | 10   | 87   | 9    |
| Future Vol, veh/h         | 6    | 11   | 38   | 22   | 8    | 4    | 33   | 30   | 10   | 10   | 87   | 9    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 50   | 69   | 79   | 69   | 67   | 33   | 64   | 83   | 50   | 83   | 81   | 45   |
| Heavy Vehicles, %         | 50   | 0    | 3    | 5    | 0    | 0    | 6    | 7    | 0    | 10   | 5    | 11   |
| Mvmt Flow                 | 12   | 16   | 48   | 32   | 12   | 12   | 52   | 36   | 20   | 12   | 107  | 20   |

| Major/Minor          | Minor2 |     | Minor1 |       | Major1 |      | Major2 |   |   |      |   |   |
|----------------------|--------|-----|--------|-------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 303    | 301 | 117    | 323   | 301    | 46   | 127    | 0 | 0 | 56   | 0 | 0 |
| Stage 1              | 141    | 141 | -      | 150   | 150    | -    | -      | - | - | -    | - | - |
| Stage 2              | 162    | 160 | -      | 173   | 151    | -    | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.6    | 6.5 | 6.23   | 7.15  | 6.5    | 6.2  | 4.16   | - | - | 4.2  | - | - |
| Critical Hdwy Stg 1  | 6.6    | 5.5 | -      | 6.15  | 5.5    | -    | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.6    | 5.5 | -      | 6.15  | 5.5    | -    | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.95   | 4   | 3.327  | 3.545 | 4      | 3.3  | 2.254  | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver   | 565    | 615 | 932    | 624   | 615    | 1029 | 1435   | - | - | 1499 | - | - |
| Stage 1              | 760    | 784 | -      | 845   | 777    | -    | -      | - | - | -    | - | - |
| Stage 2              | 739    | 769 | -      | 822   | 776    | -    | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |     |        |       |        |      |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 531    | 587 | 932    | 559   | 587    | 1029 | 1435   | - | - | 1499 | - | - |
| Mov Cap-2 Maneuver   | 531    | 587 | -      | 559   | 587    | -    | -      | - | - | -    | - | - |
| Stage 1              | 732    | 777 | -      | 814   | 748    | -    | -      | - | - | -    | - | - |
| Stage 2              | 692    | 741 | -      | 757   | 769    | -    | -      | - | - | -    | - | - |

| Approach             | EB  | WB   | NB  | SB  |
|----------------------|-----|------|-----|-----|
| HCM Control Delay, s | 0.3 | 11.3 | 3.6 | 0.6 |
| HCM LOS              | B   | B    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn  | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1435  | -   | -   | 750   | 627   | 1499  | -   | -   |
| HCM Lane V/C Ratio    | 0.036 | -   | -   | 0.101 | 0.089 | 0.008 | -   | -   |
| HCM Control Delay (s) | 7.6   | 0   | -   | 10.3  | 11.3  | 7.4   | 0   | -   |
| HCM Lane LOS          | A     | A   | -   | B     | B     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | 0.3   | 0.3   | 0     | -   | -   |

| Intersection              |        |      |        |       |        |       |        |      |      |      |      |      |
|---------------------------|--------|------|--------|-------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 2.4    |      |        |       |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |       | ↕      |       | ↕      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 13     | 3    | 21     | 13    | 12     | 3     | 6      | 473  | 6    | 3    | 768  | 6    |
| Future Vol, veh/h         | 13     | 3    | 21     | 13    | 12     | 3     | 6      | 473  | 6    | 3    | 768  | 6    |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -     | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -    | -      | -     | -      | -     | 450    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 65     | 38   | 88     | 81    | 50     | 38    | 75     | 95   | 50   | 75   | 80   | 75   |
| Heavy Vehicles, %         | 15     | 0    | 5      | 0     | 0      | 0     | 17     | 5    | 33   | 0    | 2    | 0    |
| Mvmt Flow                 | 20     | 8    | 24     | 16    | 24     | 8     | 8      | 498  | 12   | 4    | 960  | 8    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |      | Minor1 |       | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 1249   | 1498 | 484    | 1012  | 1496   | 255   | 968    | 0    | 0    | 510  | 0    | 0    |
| Stage 1                   | 972    | 972  | -      | 520   | 520    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 277    | 526  | -      | 492   | 976    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.8    | 6.5  | 7      | 7.5   | 6.5    | 6.9   | 4.44   | -    | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.8    | 5.5  | -      | 6.5   | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.8    | 5.5  | -      | 6.5   | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.65   | 4    | 3.35   | 3.5   | 4      | 3.3   | 2.37   | -    | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 116    | 124  | 521    | 196   | 124    | 750   | 622    | -    | -    | 1065 | -    | -    |
| Stage 1                   | 247    | 333  | -      | 512   | 535    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 670    | 532  | -      | 532   | 332    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |      |        |       |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 96     | 121  | 521    | 175   | 121    | 750   | 622    | -    | -    | 1065 | -    | -    |
| Mov Cap-2 Maneuver        | 96     | 121  | -      | 175   | 121    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 244    | 330  | -      | 505   | 528    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 625    | 525  | -      | 492   | 329    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Approach                  | EB     |      | WB     |       | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 7.3    |      | 36.8   |       | 0.2    |       | 0      |      |      |      |      |      |
| HCM LOS                   | E      |      | E      |       |        |       |        |      |      |      |      |      |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn  | WBLn   | 1     | SBL    | SBT  | SBR  |      |      |      |
| Capacity (veh/h)          | 622    | -    | -      | 162   | 160    | 1065  | -      | -    | -    |      |      |      |
| HCM Lane V/C Ratio        | 0.013  | -    | -      | 0.319 | 0.3    | 0.004 | -      | -    | -    |      |      |      |
| HCM Control Delay (s)     | 10.9   | -    | -      | 37.3  | 36.8   | 8.4   | 0      | -    | -    |      |      |      |
| HCM Lane LOS              | B      | -    | -      | E     | E      | A     | A      | -    | -    |      |      |      |
| HCM 95th %tile Q(veh)     | 0      | -    | -      | 1.3   | 1.2    | 0     | -      | -    | -    |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection              |        |        |       |        |      |      |
|---------------------------|--------|--------|-------|--------|------|------|
| Int Delay, s/veh          | 1.5    |        |       |        |      |      |
| Movement                  | EBL    | EBR    | NBL   | NBT    | SBT  | SBR  |
| Lane Configurations       | YY     |        |       | 4      | 4    |      |
| Traffic Vol, veh/h        | 13     | 14     | 2     | 107    | 174  | 12   |
| Future Vol, veh/h         | 13     | 14     | 2     | 107    | 174  | 12   |
| Conflicting Peds, #/hr    | 0      | 0      | 0     | 0      | 0    | 0    |
| Sign Control              | Stop   | Stop   | Free  | Free   | Free | Free |
| RT Channelized            | -      | None   | -     | None   | -    | None |
| Storage Length            | -      | -      | -     | -      | -    | -    |
| Veh in Median Storage, #0 | -      | -      | 0     | 0      | -    | -    |
| Grade, %                  | 0      | -      | -     | 0      | 0    | -    |
| Peak Hour Factor          | 41     | 70     | 25    | 79     | 84   | 75   |
| Heavy Vehicles, %         | 15     | 7      | 0     | 5      | 1    | 16   |
| Mvmt Flow                 | 32     | 20     | 8     | 135    | 207  | 16   |
| Major/Minor               | Minor2 | Major1 |       | Major2 |      |      |
| Conflicting Flow All      | 366    | 215    | 223   | 0      | -    | 0    |
| Stage 1                   | 215    | -      | -     | -      | -    | -    |
| Stage 2                   | 151    | -      | -     | -      | -    | -    |
| Critical Hdwy             | 6.55   | 6.27   | 4.1   | -      | -    | -    |
| Critical Hdwy Stg 1       | 5.55   | -      | -     | -      | -    | -    |
| Critical Hdwy Stg 2       | 5.55   | -      | -     | -      | -    | -    |
| Follow-up Hdwy            | 3.635  | 3.363  | 2.2   | -      | -    | -    |
| Pot Cap-1 Maneuver        | 609    | 813    | 1358  | -      | -    | -    |
| Stage 1                   | 791    | -      | -     | -      | -    | -    |
| Stage 2                   | 846    | -      | -     | -      | -    | -    |
| Platoon blocked, %        |        |        |       | -      | -    | -    |
| Mov Cap-1 Maneuver        | 605    | 813    | 1358  | -      | -    | -    |
| Mov Cap-2 Maneuver        | 605    | -      | -     | -      | -    | -    |
| Stage 1                   | 786    | -      | -     | -      | -    | -    |
| Stage 2                   | 846    | -      | -     | -      | -    | -    |
| Approach                  | EB     | NB     |       | SB     |      |      |
| HCM Control Delay, s      | 0.8    | 0.4    |       | 0      |      |      |
| HCM LOS                   | B      |        |       |        |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT    | EBLn1 | SBT    | SBR  |      |
| Capacity (veh/h)          | 1358   | -      | 671   | -      | -    |      |
| HCM Lane V/C Ratio        | 0.006  | -      | 0.077 | -      | -    |      |
| HCM Control Delay (s)     | 7.7    | 0      | 10.8  | -      | -    |      |
| HCM Lane LOS              | A      | A      | B     | -      | -    |      |
| HCM 95th %tile Q(veh)     | 0      | -      | 0.2   | -      | -    |      |

**PM Existing**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

04/19/2019

| Intersection              |        |      |      |        |      |       |        |      |      |        |       |      |
|---------------------------|--------|------|------|--------|------|-------|--------|------|------|--------|-------|------|
| Int Delay, s/veh          | 7.5    |      |      |        |      |       |        |      |      |        |       |      |
| Movement                  | EBL    | EBT  | EBR  | WBL    | WBT  | WBR   | NBL    | NBT  | NBR  | SBL    | SBT   | SBR  |
| Lane Configurations       |        | ↕    |      |        | ↕    |       |        | ↕    |      |        | ↕     |      |
| Traffic Vol, veh/h        | 0      | 14   | 11   | 5      | 22   | 5     | 14     | 62   | 13   | 6      | 33    | 0    |
| Future Vol, veh/h         | 0      | 14   | 11   | 5      | 22   | 5     | 14     | 62   | 13   | 6      | 33    | 0    |
| Conflicting Peds, #/hr    | 0      | 0    | 0    | 0      | 0    | 0     | 0      | 0    | 0    | 0      | 0     | 0    |
| Sign Control              | Free   | Free | Free | Free   | Free | Free  | Stop   | Stop | Stop | Stop   | Stop  | Stop |
| RT Channelized            | -      | -    | Free | -      | -    | Free  | -      | -    | None | -      | -     | None |
| Storage Length            | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -     | -    |
| Veh in Median Storage, #- |        | 0    | -    | -      | 0    | -     | -      | 0    | -    | -      | 0     | -    |
| Grade, %                  | -      | 0    | -    | -      | 0    | -     | -      | 0    | -    | -      | 0     | -    |
| Peak Hour Factor          | 92     | 58   | 55   | 40     | 69   | 63    | 58     | 82   | 81   | 50     | 75    | 92   |
| Heavy Vehicles, %         | 0      | 7    | 9    | 20     | 9    | 0     | 7      | 0    | 0    | 0      | 9     | 0    |
| Mvmt Flow                 | 0      | 24   | 20   | 13     | 32   | 8     | 24     | 76   | 16   | 12     | 44    | 0    |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Major/Minor               | Major1 |      |      | Major2 |      |       | Minor1 |      |      | Minor2 |       |      |
| Conflicting Flow All      | 32     | 0    | -    | 24     | 0    | 0     | 104    | 82   | 24   | 128    | 82    | 32   |
| Stage 1                   | -      | -    | -    | -      | -    | -     | 24     | 24   | -    | 58     | 58    | -    |
| Stage 2                   | -      | -    | -    | -      | -    | -     | 80     | 58   | -    | 70     | 24    | -    |
| Critical Hdwy             | 4.1    | -    | -    | 4.3    | -    | -     | 7.17   | 6.5  | 6.2  | 7.1    | 6.59  | 6.2  |
| Critical Hdwy Stg 1       | -      | -    | -    | -      | -    | -     | 6.17   | 5.5  | -    | 6.1    | 5.59  | -    |
| Critical Hdwy Stg 2       | -      | -    | -    | -      | -    | -     | 6.17   | 5.5  | -    | 6.1    | 5.59  | -    |
| Follow-up Hdwy            | 2.2    | -    | -    | 2.38   | -    | -     | 3.563  | 4    | 3.3  | 3.5    | 4.081 | 3.3  |
| Pot Cap-1 Maneuver        | 1593   | -    | 0    | 1482   | -    | 0     | 864    | 812  | 1058 | 850    | 795   | 1048 |
| Stage 1                   | -      | -    | 0    | -      | -    | 0     | 981    | 879  | -    | 959    | 833   | -    |
| Stage 2                   | -      | -    | 0    | -      | -    | 0     | 916    | 851  | -    | 945    | 861   | -    |
| Platoon blocked, %        |        | -    |      |        | -    |       |        |      |      |        |       |      |
| Mov Cap-1 Maneuver        | 1593   | -    | -    | 1482   | -    | -     | 822    | 805  | 1058 | 772    | 788   | 1048 |
| Mov Cap-2 Maneuver        | -      | -    | -    | -      | -    | -     | 822    | 805  | -    | 772    | 788   | -    |
| Stage 1                   | -      | -    | -    | -      | -    | -     | 981    | 879  | -    | 959    | 826   | -    |
| Stage 2                   | -      | -    | -    | -      | -    | -     | 859    | 843  | -    | 851    | 861   | -    |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Approach                  | EB     |      |      | WB     |      |       | NB     |      |      | SB     |       |      |
| HCM Control Delay, s      | 0      |      |      | 2.1    |      |       | 10     |      |      | 9.9    |       |      |
| HCM LOS                   |        |      |      |        |      |       | B      |      |      | A      |       |      |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Minor Lane/Major Mvmt     | NBLn1  | EBL  | EBT  | WBL    | WBT  | SBLn1 |        |      |      |        |       |      |
| Capacity (veh/h)          | 836    | 1593 | -    | 1482   | -    | 785   |        |      |      |        |       |      |
| HCM Lane V/C Ratio        | 0.139  | -    | -    | 0.008  | -    | 0.071 |        |      |      |        |       |      |
| HCM Control Delay (s)     | 10     | 0    | -    | 7.5    | 0    | 9.9   |        |      |      |        |       |      |
| HCM Lane LOS              | B      | A    | -    | A      | A    | A     |        |      |      |        |       |      |
| HCM 95th %tile Q(veh)     | 0.5    | 0    | -    | 0      | -    | 0.2   |        |      |      |        |       |      |

**HCM 6th TWSC**  
**10: Old State Road 1 & Shoaff Rd**

04/19/2019

| Intersection              |        |      |        |       |       |        |      |      |        |      |      |      |
|---------------------------|--------|------|--------|-------|-------|--------|------|------|--------|------|------|------|
| Int Delay, s/veh          | 4.9    |      |        |       |       |        |      |      |        |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL   | WBT   | WBR    | NBL  | NBT  | NBR    | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |       | ↕     |        |      | ↕    |        |      | ↕    |      |
| Traffic Vol, veh/h        | 8      | 17   | 22     | 17    | 16    | 10     | 32   | 74   | 17     | 9    | 49   | 3    |
| Future Vol, veh/h         | 8      | 17   | 22     | 17    | 16    | 10     | 32   | 74   | 17     | 9    | 49   | 3    |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0     | 0     | 0      | 0    | 0    | 0      | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop  | Stop  | Stop   | Free | Free | Free   | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -     | -     | None   | -    | -    | None   | -    | -    | None |
| Storage Length            | -      | -    | -      | -     | -     | -      | -    | -    | -      | -    | -    | -    |
| Veh in Median Storage, #- | 0      | -    | -      | 0     | -     | -      | 0    | -    | -      | 0    | -    | -    |
| Grade, %                  | -      | 0    | -      | -     | 0     | -      | -    | 0    | -      | -    | 0    | -    |
| Peak Hour Factor          | 50     | 71   | 55     | 85    | 67    | 63     | 67   | 84   | 43     | 75   | 77   | 38   |
| Heavy Vehicles, %         | 50     | 0    | 0      | 6     | 0     | 0      | 0    | 3    | 6      | 0    | 4    | 0    |
| Mvmt Flow                 | 16     | 24   | 40     | 20    | 24    | 16     | 48   | 88   | 40     | 12   | 64   | 8    |
| Major/Minor               | Minor2 |      | Minor1 |       |       | Major1 |      |      | Major2 |      |      |      |
| Conflicting Flow All      | 316    | 316  | 68     | 328   | 300   | 108    | 72   | 0    | 0      | 128  | 0    | 0    |
| Stage 1                   | 92     | 92   | -      | 204   | 204   | -      | -    | -    | -      | -    | -    | -    |
| Stage 2                   | 224    | 224  | -      | 124   | 96    | -      | -    | -    | -      | -    | -    | -    |
| Critical Hdwy             | 7.6    | 6.5  | 6.2    | 7.16  | 6.5   | 6.2    | 4.1  | -    | -      | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.6    | 5.5  | -      | 6.16  | 5.5   | -      | -    | -    | -      | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.6    | 5.5  | -      | 6.16  | 5.5   | -      | -    | -    | -      | -    | -    | -    |
| Follow-up Hdwy            | 3.95   | 4    | 3.3    | 3.554 | 4     | 3.3    | 2.2  | -    | -      | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 553    | 603  | 1001   | 618   | 616   | 951    | 1541 | -    | -      | 1470 | -    | -    |
| Stage 1                   | 809    | 823  | -      | 789   | 737   | -      | -    | -    | -      | -    | -    | -    |
| Stage 2                   | 682    | 722  | -      | 870   | 819   | -      | -    | -    | -      | -    | -    | -    |
| Platoon blocked, %        |        |      |        |       |       |        |      | -    | -      | -    | -    | -    |
| Mov Cap-1 Maneuver        | 510    | 577  | 1001   | 556   | 590   | 951    | 1541 | -    | -      | 1470 | -    | -    |
| Mov Cap-2 Maneuver        | 510    | 577  | -      | 556   | 590   | -      | -    | -    | -      | -    | -    | -    |
| Stage 1                   | 781    | 816  | -      | 762   | 712   | -      | -    | -    | -      | -    | -    | -    |
| Stage 2                   | 626    | 697  | -      | 803   | 812   | -      | -    | -    | -      | -    | -    | -    |
| Approach                  | EB     |      | WB     |       |       | NB     |      |      | SB     |      |      |      |
| HCM Control Delay, s      | 0.7    |      | 11.2   |       |       | 2      |      |      | 1.1    |      |      |      |
| HCM LOS                   | B      |      | B      |       |       |        |      |      |        |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn  | WBLn1 | SBL    | SBT  | SBR  |        |      |      |      |
| Capacity (veh/h)          | 1541   | -    | -      | 709   | 642   | 1470   | -    | -    |        |      |      |      |
| HCM Lane V/C Ratio        | 0.031  | -    | -      | 0.113 | 0.093 | 0.008  | -    | -    |        |      |      |      |
| HCM Control Delay (s)     | 7.4    | 0    | -      | 10.7  | 11.2  | 7.5    | 0    | -    |        |      |      |      |
| HCM Lane LOS              | A      | A    | -      | B     | B     | A      | A    | -    |        |      |      |      |
| HCM 95th %tile Q(veh)     | 0.1    | -    | -      | 0.4   | 0.3   | 0      | -    | -    |        |      |      |      |

| Intersection              |        |      |        |      |        |       |        |      |      |      |      |      |
|---------------------------|--------|------|--------|------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 2.7    |      |        |      |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL  | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |      | ↕      |       | ↵      | ↕↵   |      |      | ↕↵   |      |
| Traffic Vol, veh/h        | 11     | 14   | 24     | 7    | 6      | 8     | 23     | 636  | 16   | 3    | 689  | 7    |
| Future Vol, veh/h         | 11     | 14   | 24     | 7    | 6      | 8     | 23     | 636  | 16   | 3    | 689  | 7    |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0    | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -    | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -    | -      | -    | -      | -     | 450    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0    | -      | -    | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0    | -      | -    | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 69     | 70   | 60     | 58   | 50     | 50    | 64     | 91   | 67   | 38   | 95   | 58   |
| Heavy Vehicles, %         | 0      | 0    | 4      | 14   | 0      | 0     | 0      | 1    | 13   | 0    | 5    | 14   |
| Mvmt Flow                 | 16     | 20   | 40     | 12   | 12     | 16    | 36     | 699  | 24   | 8    | 725  | 12   |
|                           |        |      |        |      |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |      | Minor1 |      | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 1175   | 1542 | 369    | 1172 | 1536   | 362   | 737    | 0    | 0    | 723  | 0    | 0    |
| Stage 1                   | 747    | 747  | -      | 783  | 783    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 428    | 795  | -      | 389  | 753    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.5    | 6.5  | 6.98   | 7.78 | 6.5    | 6.9   | 4.1    | -    | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.5    | 5.5  | -      | 6.78 | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.5    | 5.5  | -      | 6.78 | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.5    | 4    | 3.34   | 3.64 | 4      | 3.3   | 2.2    | -    | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 149    | 116  | 622    | 134  | 117    | 641   | 878    | -    | -    | 889  | -    | -    |
| Stage 1                   | 376    | 423  | -      | 328  | 407    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 581    | 402  | -      | 575  | 420    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |      |        |      |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 128    | 110  | 622    | 103  | 111    | 641   | 878    | -    | -    | 889  | -    | -    |
| Mov Cap-2 Maneuver        | 128    | 110  | -      | 103  | 111    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 361    | 417  | -      | 315  | 390    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 527    | 386  | -      | 505  | 414    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |      |        |      |        |       |        |      |      |      |      |      |
| Approach                  | EB     |      | WB     |      | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 2.5    |      | 34.9   |      | 0.4    |       | 0.2    |      |      |      |      |      |
| HCM LOS                   | D      |      | D      |      |        |       |        |      |      |      |      |      |
|                           |        |      |        |      |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn | WBLn   | WBLn1 | SBL    | SBT  | SBR  |      |      |      |
| Capacity (veh/h)          | 878    | -    | -      | 205  | 160    | 889   | -      | -    | -    |      |      |      |
| HCM Lane V/C Ratio        | 0.041  | -    | -      | 0.37 | 0.25   | 0.009 | -      | -    | -    |      |      |      |
| HCM Control Delay (s)     | 9.3    | -    | -      | 32.5 | 34.9   | 9.1   | 0.1    | -    | -    |      |      |      |
| HCM Lane LOS              | A      | -    | -      | D    | D      | A     | A      | -    | -    |      |      |      |
| HCM 95th %tile Q(veh)     | 0.1    | -    | -      | 1.6  | 0.9    | 0     | -      | -    | -    |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |                                                                                   |        |                                                                                   |        |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 1.5                                                                               |        |                                                                                   |        |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL                                                                               | NBT    | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |  |        |  |      |
| Traffic Vol, veh/h       | 23                                                                                | 12     | 12                                                                                | 219    | 147                                                                               | 13   |
| Future Vol, veh/h        | 23                                                                                | 12     | 12                                                                                | 219    | 147                                                                               | 13   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0                                                                                 | 0      | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop   | Free                                                                              | Free   | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None   | -                                                                                 | None   | -                                                                                 | None |
| Storage Length           | -                                                                                 | -      | -                                                                                 | -      | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Peak Hour Factor         | 64                                                                                | 60     | 50                                                                                | 75     | 94                                                                                | 65   |
| Heavy Vehicles, %        | 4                                                                                 | 0      | 0                                                                                 | 0      | 1                                                                                 | 8    |
| Mvmt Flow                | 36                                                                                | 20     | 24                                                                                | 292    | 156                                                                               | 20   |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Major/Minor              | Minor2                                                                            | Major1 |                                                                                   | Major2 |                                                                                   |      |
| Conflicting Flow All     | 506                                                                               | 166    | 176                                                                               | 0      | -                                                                                 | 0    |
| Stage 1                  | 166                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 340                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy            | 6.44                                                                              | 6.2    | 4.1                                                                               | -      | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.44                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.44                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Follow-up Hdwy           | 3.536                                                                             | 3.3    | 2.2                                                                               | -      | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 523                                                                               | 884    | 1412                                                                              | -      | -                                                                                 | -    |
| Stage 1                  | 859                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 716                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |                                                                                   | -      | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 513                                                                               | 884    | 1412                                                                              | -      | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 513                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 1                  | 842                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 716                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Approach                 | EB                                                                                | NB     |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s     | 1.6                                                                               | 0.6    |                                                                                   | 0      |                                                                                   |      |
| HCM LOS                  | B                                                                                 |        |                                                                                   |        |                                                                                   |      |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBTLN1 | SBT                                                                               | SBR    |                                                                                   |      |
| Capacity (veh/h)         | 1412                                                                              | -      | 604                                                                               | -      | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.017                                                                             | -      | 0.093                                                                             | -      | -                                                                                 |      |
| HCM Control Delay (s)    | 7.6                                                                               | 0      | 11.6                                                                              | -      | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | A      | B                                                                                 | -      | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0.1                                                                               | -      | 0.3                                                                               | -      | -                                                                                 |      |

# **AM Phase I**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

04/19/2019

| Intersection              |        |                                                                                   |       |        |                                                                                   |       |        |                                                                                   |      |        |                                                                                     |      |  |
|---------------------------|--------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|--------|-------------------------------------------------------------------------------------|------|--|
| Int Delay, s/veh          | 7.3    |                                                                                   |       |        |                                                                                   |       |        |                                                                                   |      |        |                                                                                     |      |  |
| Movement                  | EBL    | EBT                                                                               | EBR   | WBL    | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL    | SBT                                                                                 | SBR  |  |
| Lane Configurations       |        |  |       |        |  |       |        |  |      |        |  |      |  |
| Traffic Vol, veh/h        | 3      | 25                                                                                | 24    | 28     | 14                                                                                | 8     | 9      | 15                                                                                | 11   | 6      | 63                                                                                  | 0    |  |
| Future Vol, veh/h         | 3      | 25                                                                                | 24    | 28     | 14                                                                                | 8     | 9      | 15                                                                                | 11   | 6      | 63                                                                                  | 0    |  |
| Conflicting Peds, #/hr    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0      | 0                                                                                   | 0    |  |
| Sign Control              | Free   | Free                                                                              | Free  | Free   | Free                                                                              | Free  | Stop   | Stop                                                                              | Stop | Stop   | Stop                                                                                | Stop |  |
| RT Channelized            | -      | -                                                                                 | Free  | -      | -                                                                                 | Free  | -      | -                                                                                 | None | -      | -                                                                                   | None |  |
| Storage Length            | -      | -                                                                                 | -     | -      | -                                                                                 | -     | -      | -                                                                                 | -    | -      | -                                                                                   | -    |  |
| Veh in Median Storage, #- |        | 0                                                                                 | -     | -      | 0                                                                                 | -     | -      | 0                                                                                 | -    | -      | 0                                                                                   | -    |  |
| Grade, %                  | -      | 0                                                                                 | -     | -      | 0                                                                                 | -     | -      | 0                                                                                 | -    | -      | 0                                                                                   | -    |  |
| Peak Hour Factor          | 92     | 92                                                                                | 92    | 92     | 92                                                                                | 92    | 92     | 92                                                                                | 92   | 92     | 92                                                                                  | 92   |  |
| Heavy Vehicles, %         | 100    | 0                                                                                 | 5     | 9      | 0                                                                                 | 0     | 13     | 8                                                                                 | 10   | 17     | 2                                                                                   | 0    |  |
| Mvmt Flow                 | 3      | 27                                                                                | 26    | 30     | 15                                                                                | 9     | 10     | 16                                                                                | 12   | 7      | 68                                                                                  | 0    |  |
|                           |        |                                                                                   |       |        |                                                                                   |       |        |                                                                                   |      |        |                                                                                     |      |  |
| Major/Minor               | Major1 |                                                                                   |       | Major2 |                                                                                   |       | Minor1 |                                                                                   |      | Minor2 |                                                                                     |      |  |
| Conflicting Flow All      | 15     | 0                                                                                 | -     | 27     | 0                                                                                 | 0     | 142    | 108                                                                               | 27   | 122    | 108                                                                                 | 15   |  |
| Stage 1                   | -      | -                                                                                 | -     | -      | -                                                                                 | -     | 33     | 33                                                                                | -    | 75     | 75                                                                                  | -    |  |
| Stage 2                   | -      | -                                                                                 | -     | -      | -                                                                                 | -     | 109    | 75                                                                                | -    | 47     | 33                                                                                  | -    |  |
| Critical Hdwy             | 5.1    | -                                                                                 | -     | 4.19   | -                                                                                 | -     | 7.23   | 6.58                                                                              | 6.3  | 7.27   | 6.52                                                                                | 6.2  |  |
| Critical Hdwy Stg 1       | -      | -                                                                                 | -     | -      | -                                                                                 | -     | 6.23   | 5.58                                                                              | -    | 6.27   | 5.52                                                                                | -    |  |
| Critical Hdwy Stg 2       | -      | -                                                                                 | -     | -      | -                                                                                 | -     | 6.23   | 5.58                                                                              | -    | 6.27   | 5.52                                                                                | -    |  |
| Follow-up Hdwy            | 3.1    | -                                                                                 | -     | 2.281  | -                                                                                 | -     | 3.617  | 4.072                                                                             | 3.39 | 3.653  | 4.018                                                                               | 3.3  |  |
| Pot Cap-1 Maneuver        | 1144   | -                                                                                 | 0     | 1543   | -                                                                                 | 0     | 803    | 771                                                                               | 1026 | 819    | 782                                                                                 | 1070 |  |
| Stage 1                   | -      | -                                                                                 | 0     | -      | -                                                                                 | 0     | 956    | 856                                                                               | -    | 898    | 833                                                                                 | -    |  |
| Stage 2                   | -      | -                                                                                 | 0     | -      | -                                                                                 | 0     | 870    | 821                                                                               | -    | 930    | 868                                                                                 | -    |  |
| Platoon blocked, %        |        | -                                                                                 |       |        | -                                                                                 |       |        |                                                                                   |      |        |                                                                                     |      |  |
| Mov Cap-1 Maneuver        | 144    | -                                                                                 | -     | 1543   | -                                                                                 | -     | 735    | 753                                                                               | 1026 | 782    | 764                                                                                 | 1070 |  |
| Mov Cap-2 Maneuver        |        | -                                                                                 | -     | -      | -                                                                                 | -     | 735    | 753                                                                               | -    | 782    | 764                                                                                 | -    |  |
| Stage 1                   |        | -                                                                                 | -     | -      | -                                                                                 | -     | 953    | 853                                                                               | -    | 895    | 816                                                                                 | -    |  |
| Stage 2                   |        | -                                                                                 | -     | -      | -                                                                                 | -     | 781    | 805                                                                               | -    | 899    | 865                                                                                 | -    |  |
|                           |        |                                                                                   |       |        |                                                                                   |       |        |                                                                                   |      |        |                                                                                     |      |  |
| Approach                  | EB     |                                                                                   |       | WB     |                                                                                   |       | NB     |                                                                                   |      | SB     |                                                                                     |      |  |
| HCM Control Delay, s      | 0.9    |                                                                                   |       | 4.9    |                                                                                   |       | 9.6    |                                                                                   |      | 10.2   |                                                                                     |      |  |
| HCM LOS                   |        |                                                                                   |       |        |                                                                                   |       | A      |                                                                                   |      | B      |                                                                                     |      |  |
|                           |        |                                                                                   |       |        |                                                                                   |       |        |                                                                                   |      |        |                                                                                     |      |  |
| Minor Lane/Major Mvmt     | NBLn1  | EBL                                                                               | EBT   | WBL    | WBT                                                                               | SBLn1 |        |                                                                                   |      |        |                                                                                     |      |  |
| Capacity (veh/h)          |        | 816                                                                               | 1144  | -      | 1543                                                                              | -     | 766    |                                                                                   |      |        |                                                                                     |      |  |
| HCM Lane V/C Ratio        |        | 0.047                                                                             | 0.003 | -      | 0.02                                                                              | -     | 0.098  |                                                                                   |      |        |                                                                                     |      |  |
| HCM Control Delay (s)     |        | 9.6                                                                               | 8.2   | 0      | 7.4                                                                               | 0     | 10.2   |                                                                                   |      |        |                                                                                     |      |  |
| HCM Lane LOS              |        | A                                                                                 | A     | A      | A                                                                                 | A     | B      |                                                                                   |      |        |                                                                                     |      |  |
| HCM 95th %tile Q(veh)     |        | 0.1                                                                               | 0     | -      | 0.1                                                                               | -     | 0.3    |                                                                                   |      |        |                                                                                     |      |  |

**HCM 6th TWSC**  
**10: Old State Road 1 & Shoaff Rd**

04/19/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 5.7  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 8    | 12   | 45   | 76   | 27   | 15   | 36   | 55   | 16   | 16   | 146  | 15   |
| Future Vol, veh/h         | 8    | 12   | 45   | 76   | 27   | 15   | 36   | 55   | 16   | 16   | 146  | 15   |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 50   | 0    | 3    | 5    | 0    | 0    | 6    | 7    | 0    | 10   | 5    | 11   |
| Mvmt Flow                 | 9    | 13   | 49   | 83   | 29   | 16   | 39   | 60   | 17   | 17   | 159  | 16   |

| Major/Minor          | Minor2 |     | Minor1 |       | Major1 |      | Major2 |   |   |      |   |   |
|----------------------|--------|-----|--------|-------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 370    | 356 | 167    | 379   | 356    | 69   | 175    | 0 | 0 | 77   | 0 | 0 |
| Stage 1              | 201    | 201 | -      | 147   | 147    | -    | -      | - | - | -    | - | - |
| Stage 2              | 169    | 155 | -      | 232   | 209    | -    | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.6    | 6.5 | 6.23   | 7.15  | 6.5    | 6.2  | 4.16   | - | - | 4.2  | - | - |
| Critical Hdwy Stg 1  | 6.6    | 5.5 | -      | 6.15  | 5.5    | -    | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.6    | 5.5 | -      | 6.15  | 5.5    | -    | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.95   | 4   | 3.327  | 3.545 | 4      | 3.3  | 2.254  | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver   | 508    | 573 | 875    | 573   | 573    | 1000 | 1378   | - | - | 1472 | - | - |
| Stage 1              | 703    | 739 | -      | 849   | 779    | -    | -      | - | - | -    | - | - |
| Stage 2              | 732    | 773 | -      | 764   | 733    | -    | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |     |        |       |        |      |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 464    | 548 | 875    | 514   | 548    | 1000 | 1378   | - | - | 1472 | - | - |
| Mov Cap-2 Maneuver   | 464    | 548 | -      | 514   | 548    | -    | -      | - | - | -    | - | - |
| Stage 1              | 682    | 729 | -      | 824   | 756    | -    | -      | - | - | -    | - | - |
| Stage 2              | 671    | 750 | -      | 699   | 723    | -    | -      | - | - | -    | - | - |

| Approach             | EB  |  | WB   |  | NB  |  | SB  |  |
|----------------------|-----|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 0.6 |  | 13.4 |  | 2.6 |  | 0.7 |  |
| HCM LOS              | B   |  | B    |  |     |  |     |  |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn  | WBLn  | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1378  | -   | -   | 718   | 556   | 1472  | -   | -   |
| HCM Lane V/C Ratio    | 0.028 | -   | -   | 0.098 | 0.231 | 0.012 | -   | -   |
| HCM Control Delay (s) | 7.7   | 0   | -   | 10.6  | 13.4  | 7.5   | 0   | -   |
| HCM Lane LOS          | A     | A   | -   | B     | B     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | 0.3   | 0.9   | 0     | -   | -   |

# HCM 6th TWSC

## 11: State Road 1 & Shoaff Rd

04/19/2019

| Intersection               |        |                        |           |                            |        |       |        |                                |      |      |      |      |
|----------------------------|--------|------------------------|-----------|----------------------------|--------|-------|--------|--------------------------------|------|------|------|------|
| Int Delay, s/veh           | 109.6  |                        |           |                            |        |       |        |                                |      |      |      |      |
| Movement                   | EBL    | EBT                    | EBR       | WBL                        | WBT    | WBR   | NBL    | NBT                            | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations        |        | ↕                      |           |                            | ↕      |       | ↕      |                                | ↕    |      | ↕    |      |
| Traffic Vol, veh/h         | 16     | 20                     | 30        | 100                        | 91     | 22    | 8      | 654                            | 41   | 21   | 978  | 6    |
| Future Vol, veh/h          | 16     | 20                     | 30        | 100                        | 91     | 22    | 8      | 654                            | 41   | 21   | 978  | 6    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0         | 0                          | 0      | 0     | 0      | 0                              | 0    | 0    | 0    | 0    |
| Sign Control               | Stop   | Stop                   | Stop      | Stop                       | Stop   | Stop  | Free   | Free                           | Free | Free | Free | Free |
| RT Channelized             | -      | -                      | None      | -                          | -      | None  | -      | -                              | None | -    | -    | None |
| Storage Length             | -      | -                      | -         | -                          | -      | -     | 450    | -                              | -    | -    | -    | -    |
| Veh in Median Storage, #-  | 0      | -                      | -         | -                          | 0      | -     | -      | 0                              | -    | -    | 0    | -    |
| Grade, %                   | -      | 0                      | -         | -                          | 0      | -     | -      | 0                              | -    | -    | 0    | -    |
| Peak Hour Factor           | 90     | 92                     | 92        | 92                         | 92     | 92    | 92     | 92                             | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %          | 15     | 0                      | 5         | 0                          | 0      | 0     | 17     | 5                              | 33   | 0    | 2    | 0    |
| Mvmt Flow                  | 18     | 22                     | 33        | 109                        | 99     | 24    | 9      | 711                            | 45   | 23   | 1063 | 7    |
|                            |        |                        |           |                            |        |       |        |                                |      |      |      |      |
| Major/Minor                | Minor2 |                        | Minor1    |                            | Major1 |       | Major2 |                                |      |      |      |      |
| Conflicting Flow All       | 1536   | 1887                   | 535       | 1341                       | 1868   | 378   | 1070   | 0                              | 0    | 756  | 0    | 0    |
| Stage 1                    | 1113   | 1113                   | -         | 752                        | 752    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 423    | 774                    | -         | 589                        | 1116   | -     | -      | -                              | -    | -    | -    | -    |
| Critical Hdwy              | 7.8    | 6.5                    | 7         | 7.5                        | 6.5    | 6.9   | 4.44   | -                              | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1        | 6.8    | 5.5                    | -         | 6.5                        | 5.5    | -     | -      | -                              | -    | -    | -    | -    |
| Critical Hdwy Stg 2        | 6.8    | 5.5                    | -         | 6.5                        | 5.5    | -     | -      | -                              | -    | -    | -    | -    |
| Follow-up Hdwy             | 3.65   | 4                      | 3.35      | 3.5                        | 4      | 3.3   | 2.37   | -                              | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver         | 70     | 71                     | 482       | 113                        | ~ 73   | 625   | 566    | -                              | -    | 864  | -    | -    |
| Stage 1                    | 201    | 286                    | -         | 373                        | 421    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 546    | 411                    | -         | 466                        | 285    | -     | -      | -                              | -    | -    | -    | -    |
| Platoon blocked, %         |        |                        |           |                            |        |       |        | -                              | -    | -    | -    | -    |
| Mov Cap-1 Maneuver         | -      | 65                     | 482       | ~ 73                       | ~ 67   | 625   | 566    | -                              | -    | 864  | -    | -    |
| Mov Cap-2 Maneuver         | -      | 65                     | -         | ~ 73                       | ~ 67   | -     | -      | -                              | -    | -    | -    | -    |
| Stage 1                    | 198    | 267                    | -         | 367                        | 414    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 393    | 404                    | -         | 373                        | 266    | -     | -      | -                              | -    | -    | -    | -    |
|                            |        |                        |           |                            |        |       |        |                                |      |      |      |      |
| Approach                   | EB     |                        | WB        |                            | NB     |       | SB     |                                |      |      |      |      |
| HCM Control Delay, s       |        |                        | \$ 1020.1 |                            | 0.1    |       | 0.5    |                                |      |      |      |      |
| HCM LOS                    | -      |                        | F         |                            |        |       |        |                                |      |      |      |      |
|                            |        |                        |           |                            |        |       |        |                                |      |      |      |      |
| Minor Lane/Major Mvmt      | NBL    | NBT                    | NBR       | EBLn                       | WBLn1  | SBL   | SBT    | SBR                            |      |      |      |      |
| Capacity (veh/h)           | 566    | -                      | -         | -                          | 77     | 864   | -      | -                              |      |      |      |      |
| HCM Lane V/C Ratio         | 0.015  | -                      | -         | -                          | 3.007  | 0.026 | -      | -                              |      |      |      |      |
| HCM Control Delay (s)      | 11.5   | -                      | -         | \$-1020.1                  | 9.3    | 0.3   | -      | -                              |      |      |      |      |
| HCM Lane LOS               | B      | -                      | -         | -                          | F      | A     | A      | -                              |      |      |      |      |
| HCM 95th %tile Q(veh)      | 0      | -                      | -         | -                          | 23.1   | 0.1   | -      | -                              |      |      |      |      |
| Notes                      |        |                        |           |                            |        |       |        |                                |      |      |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |           | +: Computation Not Defined |        |       |        | *: All major volume in platoon |      |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |                                                                                   |        |                                                                                   |        |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 3.1                                                                               |        |                                                                                   |        |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL                                                                               | NBT    | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |  |        |  |      |
| Traffic Vol, veh/h       | 65                                                                                | 68     | 9                                                                                 | 151    | 200                                                                               | 47   |
| Future Vol, veh/h        | 65                                                                                | 68     | 9                                                                                 | 151    | 200                                                                               | 47   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0                                                                                 | 0      | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop   | Free                                                                              | Free   | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None   | -                                                                                 | None   | -                                                                                 | None |
| Storage Length           | -                                                                                 | -      | -                                                                                 | -      | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92     | 92                                                                                | 92     | 92                                                                                | 92   |
| Heavy Vehicles, %        | 15                                                                                | 7      | 0                                                                                 | 5      | 1                                                                                 | 16   |
| Mvmt Flow                | 71                                                                                | 74     | 10                                                                                | 164    | 217                                                                               | 51   |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Major/Minor              | Minor2                                                                            | Major1 |                                                                                   | Major2 |                                                                                   |      |
| Conflicting Flow All     | 427                                                                               | 243    | 268                                                                               | 0      | -                                                                                 | 0    |
| Stage 1                  | 243                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 184                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy            | 6.55                                                                              | 6.27   | 4.1                                                                               | -      | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.55                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.55                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Follow-up Hdwy           | 3.635                                                                             | 3.363  | 2.2                                                                               | -      | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 561                                                                               | 784    | 1307                                                                              | -      | -                                                                                 | -    |
| Stage 1                  | 768                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 817                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |                                                                                   | -      | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 557                                                                               | 784    | 1307                                                                              | -      | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 557                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 1                  | 762                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 817                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Approach                 | EB                                                                                | NB     |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s     | 2.1                                                                               | 0.4    |                                                                                   | 0      |                                                                                   |      |
| HCM LOS                  | B                                                                                 |        |                                                                                   |        |                                                                                   |      |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBTLn1 | SBT                                                                               | SBR    |                                                                                   |      |
| Capacity (veh/h)         | 1307                                                                              | -      | 654                                                                               | -      | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.007                                                                             | -      | 0.221                                                                             | -      | -                                                                                 |      |
| HCM Control Delay (s)    | 7.8                                                                               | 0      | 12.1                                                                              | -      | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | A      | B                                                                                 | -      | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0                                                                                 | -      | 0.8                                                                               | -      | -                                                                                 |      |

# **AM Phase I Modified**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

04/19/2019

| Intersection              |        |       |       |        |      |       |        |       |      |        |       |      |
|---------------------------|--------|-------|-------|--------|------|-------|--------|-------|------|--------|-------|------|
| Int Delay, s/veh          | 7.3    |       |       |        |      |       |        |       |      |        |       |      |
| Movement                  | EBL    | EBT   | EBR   | WBL    | WBT  | WBR   | NBL    | NBT   | NBR  | SBL    | SBT   | SBR  |
| Lane Configurations       |        | ↕     |       |        | ↕    |       |        | ↕     |      |        | ↕     |      |
| Traffic Vol, veh/h        | 3      | 25    | 24    | 28     | 14   | 8     | 9      | 15    | 11   | 6      | 63    | 0    |
| Future Vol, veh/h         | 3      | 25    | 24    | 28     | 14   | 8     | 9      | 15    | 11   | 6      | 63    | 0    |
| Conflicting Peds, #/hr    | 0      | 0     | 0     | 0      | 0    | 0     | 0      | 0     | 0    | 0      | 0     | 0    |
| Sign Control              | Free   | Free  | Free  | Free   | Free | Free  | Stop   | Stop  | Stop | Stop   | Stop  | Stop |
| RT Channelized            | -      | -     | Free  | -      | -    | Free  | -      | -     | None | -      | -     | None |
| Storage Length            | -      | -     | -     | -      | -    | -     | -      | -     | -    | -      | -     | -    |
| Veh in Median Storage, #- |        | 0     | -     | -      | 0    | -     | -      | 0     | -    | -      | 0     | -    |
| Grade, %                  | -      | 0     | -     | -      | 0    | -     | -      | 0     | -    | -      | 0     | -    |
| Peak Hour Factor          | 92     | 92    | 92    | 92     | 92   | 92    | 92     | 92    | 92   | 92     | 92    | 92   |
| Heavy Vehicles, %         | 100    | 0     | 5     | 9      | 0    | 0     | 13     | 8     | 10   | 17     | 2     | 0    |
| Mvmt Flow                 | 3      | 27    | 26    | 30     | 15   | 9     | 10     | 16    | 12   | 7      | 68    | 0    |
|                           |        |       |       |        |      |       |        |       |      |        |       |      |
| Major/Minor               | Major1 |       |       | Major2 |      |       | Minor1 |       |      | Minor2 |       |      |
| Conflicting Flow All      | 15     | 0     | -     | 27     | 0    | 0     | 142    | 108   | 27   | 122    | 108   | 15   |
| Stage 1                   | -      | -     | -     | -      | -    | -     | 33     | 33    | -    | 75     | 75    | -    |
| Stage 2                   | -      | -     | -     | -      | -    | -     | 109    | 75    | -    | 47     | 33    | -    |
| Critical Hdwy             | 5.1    | -     | -     | 4.19   | -    | -     | 7.23   | 6.58  | 6.3  | 7.27   | 6.52  | 6.2  |
| Critical Hdwy Stg 1       | -      | -     | -     | -      | -    | -     | 6.23   | 5.58  | -    | 6.27   | 5.52  | -    |
| Critical Hdwy Stg 2       | -      | -     | -     | -      | -    | -     | 6.23   | 5.58  | -    | 6.27   | 5.52  | -    |
| Follow-up Hdwy            | 3.1    | -     | -     | 2.281  | -    | -     | 3.617  | 4.072 | 3.39 | 3.653  | 4.018 | 3.3  |
| Pot Cap-1 Maneuver        | 1144   | -     | 0     | 1543   | -    | 0     | 803    | 771   | 1026 | 819    | 782   | 1070 |
| Stage 1                   | -      | -     | 0     | -      | -    | 0     | 956    | 856   | -    | 898    | 833   | -    |
| Stage 2                   | -      | -     | 0     | -      | -    | 0     | 870    | 821   | -    | 930    | 868   | -    |
| Platoon blocked, %        |        | -     |       |        | -    |       |        |       |      |        |       |      |
| Mov Cap-1 Maneuver        | 144    | -     | -     | 1543   | -    | -     | 735    | 753   | 1026 | 782    | 764   | 1070 |
| Mov Cap-2 Maneuver        |        | -     | -     | -      | -    | -     | 735    | 753   | -    | 782    | 764   | -    |
| Stage 1                   |        | -     | -     | -      | -    | -     | 953    | 853   | -    | 895    | 816   | -    |
| Stage 2                   |        | -     | -     | -      | -    | -     | 781    | 805   | -    | 899    | 865   | -    |
|                           |        |       |       |        |      |       |        |       |      |        |       |      |
| Approach                  | EB     |       |       | WB     |      |       | NB     |       |      | SB     |       |      |
| HCM Control Delay, s      | 0.9    |       |       | 4.9    |      |       | 9.6    |       |      | 10.2   |       |      |
| HCM LOS                   |        |       |       |        |      |       | A      |       |      | B      |       |      |
|                           |        |       |       |        |      |       |        |       |      |        |       |      |
| Minor Lane/Major Mvmt     | NBLn1  | EBL   | EBT   | WBL    | WBT  | SBLn1 |        |       |      |        |       |      |
| Capacity (veh/h)          |        | 816   | 1144  | -      | 1543 | -     | 766    |       |      |        |       |      |
| HCM Lane V/C Ratio        |        | 0.047 | 0.003 | -      | 0.02 | -     | 0.098  |       |      |        |       |      |
| HCM Control Delay (s)     |        | 9.6   | 8.2   | 0      | 7.4  | 0     | 10.2   |       |      |        |       |      |
| HCM Lane LOS              |        | A     | A     | A      | A    | A     | B      |       |      |        |       |      |
| HCM 95th %tile Q(veh)     |        | 0.1   | 0     | -      | 0.1  | -     | 0.3    |       |      |        |       |      |

**HCM 6th TWSC**  
**10: Old State Road 1 & Shoaff Rd**

04/19/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 5.7  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 8    | 12   | 45   | 76   | 27   | 15   | 36   | 55   | 16   | 16   | 146  | 15   |
| Future Vol, veh/h         | 8    | 12   | 45   | 76   | 27   | 15   | 36   | 55   | 16   | 16   | 146  | 15   |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized            | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |      | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 50   | 0    | 3    | 5    | 0    | 0    | 6    | 7    | 0    | 10   | 5    | 11   |
| Mvmt Flow                 | 9    | 13   | 49   | 83   | 29   | 16   | 39   | 60   | 17   | 17   | 159  | 16   |

| Major/Minor          | Minor2 |     | Minor1 |       | Major1 |      | Major2 |   |   |      |   |   |
|----------------------|--------|-----|--------|-------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 370    | 356 | 167    | 379   | 356    | 69   | 175    | 0 | 0 | 77   | 0 | 0 |
| Stage 1              | 201    | 201 | -      | 147   | 147    | -    | -      | - | - | -    | - | - |
| Stage 2              | 169    | 155 | -      | 232   | 209    | -    | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.6    | 6.5 | 6.23   | 7.15  | 6.5    | 6.2  | 4.16   | - | - | 4.2  | - | - |
| Critical Hdwy Stg 1  | 6.6    | 5.5 | -      | 6.15  | 5.5    | -    | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.6    | 5.5 | -      | 6.15  | 5.5    | -    | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.95   | 4   | 3.327  | 3.545 | 4      | 3.3  | 2.254  | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver   | 508    | 573 | 875    | 573   | 573    | 1000 | 1378   | - | - | 1472 | - | - |
| Stage 1              | 703    | 739 | -      | 849   | 779    | -    | -      | - | - | -    | - | - |
| Stage 2              | 732    | 773 | -      | 764   | 733    | -    | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |     |        |       |        |      |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 464    | 548 | 875    | 514   | 548    | 1000 | 1378   | - | - | 1472 | - | - |
| Mov Cap-2 Maneuver   | 464    | 548 | -      | 514   | 548    | -    | -      | - | - | -    | - | - |
| Stage 1              | 682    | 729 | -      | 824   | 756    | -    | -      | - | - | -    | - | - |
| Stage 2              | 671    | 750 | -      | 699   | 723    | -    | -      | - | - | -    | - | - |

| Approach             | EB  |  | WB   |  | NB  |  | SB  |  |
|----------------------|-----|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 0.6 |  | 13.4 |  | 2.6 |  | 0.7 |  |
| HCM LOS              | B   |  | B    |  |     |  |     |  |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn  | WBLn  | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1378  | -   | -   | 718   | 556   | 1472  | -   | -   |
| HCM Lane V/C Ratio    | 0.028 | -   | -   | 0.098 | 0.231 | 0.012 | -   | -   |
| HCM Control Delay (s) | 7.7   | 0   | -   | 10.6  | 13.4  | 7.5   | 0   | -   |
| HCM Lane LOS          | A     | A   | -   | B     | B     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | 0.3   | 0.9   | 0     | -   | -   |

# HCM 6th Signalized Intersection Summary

## 11: State Road 1 & Shoaff Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↕    |      |      | ↕    |      | ↙    | ↕    |      |      | ↕    |      |
| Traffic Volume (veh/h)       | 16                                                                                 | 20   | 30   | 100  | 91   | 22   | 8    | 654  | 41   | 21   | 978  | 6    |
| Future Volume (veh/h)        | 16                                                                                 | 20   | 30   | 100  | 91   | 22   | 8    | 654  | 41   | 21   | 978  | 6    |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900 | 1900 | 1900 | 1648 | 1826 | 1826 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h         | 18                                                                                 | 22   | 33   | 109  | 99   | 24   | 9    | 711  | 45   | 23   | 1063 | 7    |
| Peak Hour Factor             | 0.90                                                                               | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 17   | 5    | 5    | 2    | 2    | 2    |
| Cap, veh/h                   | 202                                                                                | 148  | 161  | 318  | 167  | 35   | 364  | 1601 | 101  | 141  | 1679 | 11   |
| Arrive On Green              | 0.21                                                                               | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.48 | 0.48 | 0.48 | 0.48 | 0.48 | 0.48 |
| Sat Flow, veh/h              | 229                                                                                | 709  | 774  | 658  | 803  | 169  | 465  | 3313 | 210  | 27   | 3475 | 23   |
| Grp Volume(v), veh/h         | 73                                                                                 | 0    | 0    | 232  | 0    | 0    | 9    | 372  | 384  | 568  | 0    | 525  |
| Grp Sat Flow(s),veh/h/ln     | 1712                                                                               | 0    | 0    | 1629 | 0    | 0    | 465  | 1735 | 1788 | 1827 | 0    | 1698 |
| Q Serve(g_s), s              | 0.0                                                                                | 0.0  | 0.0  | 2.8  | 0.0  | 0.0  | 0.4  | 4.1  | 4.1  | 0.0  | 0.0  | 6.7  |
| Cycle Q Clear(g_c), s        | 1.0                                                                                | 0.0  | 0.0  | 3.8  | 0.0  | 0.0  | 7.2  | 4.1  | 4.1  | 6.6  | 0.0  | 6.7  |
| Prop In Lane                 | 0.25                                                                               |      | 0.45 | 0.47 |      | 0.10 | 1.00 |      | 0.12 | 0.04 |      | 0.01 |
| Lane Grp Cap(c), veh/h       | 511                                                                                | 0    | 0    | 521  | 0    | 0    | 364  | 838  | 864  | 1011 | 0    | 820  |
| V/C Ratio(X)                 | 0.14                                                                               | 0.00 | 0.00 | 0.45 | 0.00 | 0.00 | 0.02 | 0.44 | 0.44 | 0.56 | 0.00 | 0.64 |
| Avail Cap(c_a), veh/h        | 1158                                                                               | 0    | 0    | 1167 | 0    | 0    | 505  | 1367 | 1409 | 1546 | 0    | 1338 |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 9.5                                                                                | 0.0  | 0.0  | 10.6 | 0.0  | 0.0  | 8.3  | 5.0  | 5.0  | 5.6  | 0.0  | 5.6  |
| Incr Delay (d2), s/veh       | 0.1                                                                                | 0.0  | 0.0  | 0.6  | 0.0  | 0.0  | 0.0  | 0.4  | 0.4  | 0.5  | 0.0  | 0.8  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                                | 0.0  | 0.0  | 0.9  | 0.0  | 0.0  | 0.0  | 0.2  | 0.2  | 0.3  | 0.0  | 0.3  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 9.7                                                                                | 0.0  | 0.0  | 11.2 | 0.0  | 0.0  | 8.4  | 5.3  | 5.3  | 6.1  | 0.0  | 6.5  |
| LnGrp LOS                    | A                                                                                  | A    | A    | B    | A    | A    | A    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h          |                                                                                    | 73   |      |      | 232  |      |      | 765  |      |      | 1093 |      |
| Approach Delay, s/veh        |                                                                                    | 9.7  |      |      | 11.2 |      |      | 5.4  |      |      | 6.3  |      |
| Approach LOS                 |                                                                                    | A    |      |      | B    |      |      | A    |      |      | A    |      |
| Timer - Assigned Phs         |                                                                                    | 2    |      | 4    |      | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |                                                                                    | 18.6 |      | 10.6 |      | 18.6 |      | 10.6 |      |      |      |      |
| Change Period (Y+Rc), s      |                                                                                    | 4.5  |      | 4.5  |      | 4.5  |      | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s  |                                                                                    | 23.0 |      | 18.0 |      | 23.0 |      | 18.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |                                                                                    | 9.2  |      | 3.0  |      | 8.7  |      | 5.8  |      |      |      |      |
| Green Ext Time (p_c), s      |                                                                                    | 3.5  |      | 0.2  |      | 5.4  |      | 0.9  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |                                                                                    |      | 6.6  |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |                                                                                    |      | A    |      |      |      |      |      |      |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |                                                                                   |        |                                                                                   |        |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 3.1                                                                               |        |                                                                                   |        |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL                                                                               | NBT    | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |  |        |  |      |
| Traffic Vol, veh/h       | 65                                                                                | 68     | 9                                                                                 | 151    | 200                                                                               | 47   |
| Future Vol, veh/h        | 65                                                                                | 68     | 9                                                                                 | 151    | 200                                                                               | 47   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0                                                                                 | 0      | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop   | Free                                                                              | Free   | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None   | -                                                                                 | None   | -                                                                                 | None |
| Storage Length           | -                                                                                 | -      | -                                                                                 | -      | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92     | 92                                                                                | 92     | 92                                                                                | 92   |
| Heavy Vehicles, %        | 15                                                                                | 7      | 0                                                                                 | 5      | 1                                                                                 | 16   |
| Mvmt Flow                | 71                                                                                | 74     | 10                                                                                | 164    | 217                                                                               | 51   |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Major/Minor              | Minor2                                                                            | Major1 |                                                                                   | Major2 |                                                                                   |      |
| Conflicting Flow All     | 427                                                                               | 243    | 268                                                                               | 0      | -                                                                                 | 0    |
| Stage 1                  | 243                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 184                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy            | 6.55                                                                              | 6.27   | 4.1                                                                               | -      | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.55                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.55                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Follow-up Hdwy           | 3.635                                                                             | 3.363  | 2.2                                                                               | -      | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 561                                                                               | 784    | 1307                                                                              | -      | -                                                                                 | -    |
| Stage 1                  | 768                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 817                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |                                                                                   | -      | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 557                                                                               | 784    | 1307                                                                              | -      | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 557                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 1                  | 762                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 817                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Approach                 | EB                                                                                | NB     |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s     | 2.1                                                                               | 0.4    |                                                                                   | 0      |                                                                                   |      |
| HCM LOS                  | B                                                                                 |        |                                                                                   |        |                                                                                   |      |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBTL   | EBLn1                                                                             | SBT    | SBR                                                                               |      |
| Capacity (veh/h)         | 1307                                                                              | -      | 654                                                                               | -      | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.007                                                                             | -      | 0.221                                                                             | -      | -                                                                                 |      |
| HCM Control Delay (s)    | 7.8                                                                               | 0      | 12.1                                                                              | -      | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | A      | B                                                                                 | -      | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0                                                                                 | -      | 0.8                                                                               | -      | -                                                                                 |      |

# PM Phase I



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

04/19/2019

| Intersection              |        |      |      |        |      |       |        |      |      |        |       |      |
|---------------------------|--------|------|------|--------|------|-------|--------|------|------|--------|-------|------|
| Int Delay, s/veh          | 7.6    |      |      |        |      |       |        |      |      |        |       |      |
| Movement                  | EBL    | EBT  | EBR  | WBL    | WBT  | WBR   | NBL    | NBT  | NBR  | SBL    | SBT   | SBR  |
| Lane Configurations       |        | ↕    |      |        | ↕    |       |        | ↕    |      |        | ↕     |      |
| Traffic Vol, veh/h        | 0      | 15   | 13   | 5      | 24   | 5     | 16     | 71   | 15   | 6      | 37    | 0    |
| Future Vol, veh/h         | 0      | 15   | 13   | 5      | 24   | 5     | 16     | 71   | 15   | 6      | 37    | 0    |
| Conflicting Peds, #/hr    | 0      | 0    | 0    | 0      | 0    | 0     | 0      | 0    | 0    | 0      | 0     | 0    |
| Sign Control              | Free   | Free | Free | Free   | Free | Free  | Stop   | Stop | Stop | Stop   | Stop  | Stop |
| RT Channelized            | -      | -    | Free | -      | -    | Free  | -      | -    | None | -      | -     | None |
| Storage Length            | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -     | -    |
| Veh in Median Storage, #- | 0      | -    | -    | -      | 0    | -     | -      | 0    | -    | -      | 0     | -    |
| Grade, %                  | -      | 0    | -    | -      | 0    | -     | -      | 0    | -    | -      | 0     | -    |
| Peak Hour Factor          | 92     | 92   | 92   | 92     | 92   | 92    | 92     | 92   | 92   | 92     | 92    | 92   |
| Heavy Vehicles, %         | 0      | 7    | 9    | 20     | 9    | 0     | 7      | 0    | 0    | 0      | 9     | 0    |
| Mvmt Flow                 | 0      | 16   | 14   | 5      | 26   | 5     | 17     | 77   | 16   | 7      | 40    | 0    |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Major/Minor               | Major1 |      |      | Major2 |      |       | Minor1 |      |      | Minor2 |       |      |
| Conflicting Flow All      | 26     | 0    | -    | 16     | 0    | 0     | 72     | 52   | 16   | 99     | 52    | 26   |
| Stage 1                   | -      | -    | -    | -      | -    | -     | 16     | 16   | -    | 36     | 36    | -    |
| Stage 2                   | -      | -    | -    | -      | -    | -     | 56     | 36   | -    | 63     | 16    | -    |
| Critical Hdwy             | 4.1    | -    | -    | 4.3    | -    | -     | 7.17   | 6.5  | 6.2  | 7.1    | 6.59  | 6.2  |
| Critical Hdwy Stg 1       | -      | -    | -    | -      | -    | -     | 6.17   | 5.5  | -    | 6.1    | 5.59  | -    |
| Critical Hdwy Stg 2       | -      | -    | -    | -      | -    | -     | 6.17   | 5.5  | -    | 6.1    | 5.59  | -    |
| Follow-up Hdwy            | 2.2    | -    | -    | 2.38   | -    | -     | 3.563  | 4    | 3.3  | 3.5    | 4.081 | 3.3  |
| Pot Cap-1 Maneuver 1601   | -      | 0    | 1492 | -      | 0    | 907   | 843    | 1069 | 888  | 826    | 1056  | -    |
| Stage 1                   | -      | -    | 0    | -      | -    | 0     | 991    | 886  | -    | 985    | 851   | -    |
| Stage 2                   | -      | -    | 0    | -      | -    | 0     | 944    | 869  | -    | 953    | 868   | -    |
| Platoon blocked, %        | -      |      |      | -      |      |       |        |      |      |        |       |      |
| Mov Cap-1 Maneuver 1601   | -      | -    | 1492 | -      | -    | 872   | 840    | 1069 | 811  | 824    | 1056  | -    |
| Mov Cap-2 Maneuver        | -      | -    | -    | -      | -    | 872   | 840    | -    | 811  | 824    | -     | -    |
| Stage 1                   | -      | -    | -    | -      | -    | 991   | 886    | -    | 985  | 848    | -     | -    |
| Stage 2                   | -      | -    | -    | -      | -    | 897   | 866    | -    | 857  | 868    | -     | -    |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Approach                  | EB     |      |      | WB     |      |       | NB     |      |      | SB     |       |      |
| HCM Control Delay, s      | 0      |      |      | 1.3    |      |       | 9.7    |      |      | 9.6    |       |      |
| HCM LOS                   |        |      |      |        |      |       | A      |      |      | A      |       |      |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Minor Lane/Major Mvmt     | NBLn1  | EBL  | EBT  | WBL    | WBT  | SBLn1 |        |      |      |        |       |      |
| Capacity (veh/h)          | 873    | 1601 | -    | 1492   | -    | 822   |        |      |      |        |       |      |
| HCM Lane V/C Ratio        | 0.127  | -    | -    | 0.004  | -    | 0.057 |        |      |      |        |       |      |
| HCM Control Delay (s)     | 9.7    | 0    | -    | 7.4    | 0    | 9.6   |        |      |      |        |       |      |
| HCM Lane LOS              | A      | A    | -    | A      | A    | A     |        |      |      |        |       |      |
| HCM 95th %tile Q(veh)     | 0.4    | 0    | -    | 0      | -    | 0.2   |        |      |      |        |       |      |

**HCM 6th TWSC**  
**10: Old State Road 1 & Shoaff Rd**

04/19/2019

| Intersection              |        |      |        |       |        |       |        |      |      |      |      |      |
|---------------------------|--------|------|--------|-------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 4.5    |      |        |       |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |       | ↕      |       |        | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 13     | 18   | 30     | 23    | 28     | 28    | 48     | 158  | 26   | 14   | 89   | 4    |
| Future Vol, veh/h         | 13     | 18   | 30     | 23    | 28     | 28    | 48     | 158  | 26   | 14   | 89   | 4    |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -     | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -    | -      | -     | -      | -     | -      | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92     | 92   | 92     | 92    | 92     | 92    | 92     | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 50     | 0    | 0      | 6     | 0      | 0     | 0      | 3    | 6    | 0    | 4    | 0    |
| Mvmt Flow                 | 14     | 20   | 33     | 25    | 30     | 30    | 52     | 172  | 28   | 15   | 97   | 4    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |      | Minor1 |       | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 449    | 433  | 99     | 446   | 421    | 186   | 101    | 0    | 0    | 200  | 0    | 0    |
| Stage 1                   | 129    | 129  | -      | 290   | 290    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 320    | 304  | -      | 156   | 131    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.6    | 6.5  | 6.2    | 7.16  | 6.5    | 6.2   | 4.1    | -    | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.6    | 5.5  | -      | 6.16  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.6    | 5.5  | -      | 6.16  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.95   | 4    | 3.3    | 3.554 | 4      | 3.3   | 2.2    | -    | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 447    | 519  | 962    | 516   | 527    | 861   | 1504   | -    | -    | 1384 | -    | -    |
| Stage 1                   | 772    | 793  | -      | 709   | 676    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 601    | 667  | -      | 837   | 792    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |      |        |       |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 396    | 493  | 962    | 465   | 501    | 861   | 1504   | -    | -    | 1384 | -    | -    |
| Mov Cap-2 Maneuver        | 396    | 493  | -      | 465   | 501    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 742    | 784  | -      | 681   | 650    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 531    | 641  | -      | 780   | 783    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Approach                  | EB     |      | WB     |       | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 1.7    |      | 12.4   |       | 1.5    |       | 1      |      |      |      |      |      |
| HCM LOS                   | B      |      | B      |       |        |       |        |      |      |      |      |      |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn  | WBLn   | 1     | SBL    | SBT  | SBR  |      |      |      |
| Capacity (veh/h)          | 1504   | -    | -      | 607   | 573    | 1384  | -      | -    |      |      |      |      |
| HCM Lane V/C Ratio        | 0.035  | -    | -      | 0.109 | 0.15   | 0.011 | -      | -    |      |      |      |      |
| HCM Control Delay (s)     | 7.5    | 0    | -      | 11.7  | 12.4   | 7.6   | 0      | -    |      |      |      |      |
| HCM Lane LOS              | A      | A    | -      | B     | B      | A     | A      | -    |      |      |      |      |
| HCM 95th %tile Q(veh)     | 0.1    | -    | -      | 0.4   | 0.5    | 0     | -      | -    |      |      |      |      |

| Intersection               |        |                        |        |                            |        |       |        |                                |      |      |      |      |
|----------------------------|--------|------------------------|--------|----------------------------|--------|-------|--------|--------------------------------|------|------|------|------|
| Int Delay, s/veh           | 0.5    |                        |        |                            |        |       |        |                                |      |      |      |      |
| Movement                   | EBL    | EBT                    | EBR    | WBL                        | WBT    | WBR   | NBL    | NBT                            | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations        |        | ↕                      |        |                            | ↕      |       | ↱      | ↕↕                             |      |      | ↕↕   |      |
| Traffic Vol, veh/h         | 13     | 108                    | 34     | 50                         | 41     | 55    | 35     | 883                            | 119  | 23   | 925  | 9    |
| Future Vol, veh/h          | 13     | 108                    | 34     | 50                         | 41     | 55    | 35     | 883                            | 119  | 23   | 925  | 9    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0      | 0                          | 0      | 0     | 0      | 0                              | 0    | 0    | 0    | 0    |
| Sign Control               | Stop   | Stop                   | Stop   | Stop                       | Stop   | Stop  | Free   | Free                           | Free | Free | Free | Free |
| RT Channelized             | -      | -                      | None   | -                          | -      | None  | -      | -                              | None | -    | -    | None |
| Storage Length             | -      | -                      | -      | -                          | -      | -     | 450    | -                              | -    | -    | -    | -    |
| Veh in Median Storage, #   | -      | 0                      | -      | -                          | 0      | -     | -      | 0                              | -    | -    | 0    | -    |
| Grade, %                   | -      | 0                      | -      | -                          | 0      | -     | -      | 0                              | -    | -    | 0    | -    |
| Peak Hour Factor           | 92     | 92                     | 92     | 92                         | 92     | 92    | 92     | 92                             | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %          | 0      | 0                      | 4      | 14                         | 0      | 0     | 0      | 1                              | 13   | 0    | 5    | 14   |
| Mvmt Flow                  | 14     | 117                    | 37     | 54                         | 45     | 60    | 38     | 960                            | 129  | 25   | 1005 | 10   |
|                            |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| Major/Minor                | Minor2 |                        | Minor1 |                            | Major1 |       | Major2 |                                |      |      |      |      |
| Conflicting Flow All       | 1639   | 2225                   | 508    | 1712                       | 2166   | 545   | 1015   | 0                              | 0    | 1089 | 0    | 0    |
| Stage 1                    | 1060   | 1060                   | -      | 1101                       | 1101   | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 579    | 1165                   | -      | 611                        | 1065   | -     | -      | -                              | -    | -    | -    | -    |
| Critical Hdwy              | 7.5    | 6.5                    | 6.98   | 7.78                       | 6.5    | 6.9   | 4.1    | -                              | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1        | 6.5    | 5.5                    | -      | 6.78                       | 5.5    | -     | -      | -                              | -    | -    | -    | -    |
| Critical Hdwy Stg 2        | 6.5    | 5.5                    | -      | 6.78                       | 5.5    | -     | -      | -                              | -    | -    | -    | -    |
| Follow-up Hdwy             | 3.5    | 4                      | 3.34   | 3.64                       | 4      | 3.3   | 2.2    | -                              | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver         | 68     | ~ 44                   | 505    | ~ 51                       | 48     | 488   | 691    | -                              | -    | 648  | -    | -    |
| Stage 1                    | 243    | 303                    | -      | 206                        | 290    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 473    | 271                    | -      | 419                        | 302    | -     | -      | -                              | -    | -    | -    | -    |
| Platoon blocked, %         |        |                        |        |                            |        |       |        | -                              | -    |      | -    | -    |
| Mov Cap-1 Maneuver         | -      | ~ 38                   | 505    | -                          | ~ 41   | 488   | 691    | -                              | -    | 648  | -    | -    |
| Mov Cap-2 Maneuver         | -      | ~ 38                   | -      | -                          | ~ 41   | -     | -      | -                              | -    | -    | -    | -    |
| Stage 1                    | 230    | 276                    | -      | 195                        | 274    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 328    | 256                    | -      | 203                        | 275    | -     | -      | -                              | -    | -    | -    | -    |
|                            |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| Approach                   | EB     |                        | WB     |                            | NB     |       | SB     |                                |      |      |      |      |
| HCM Control Delay, s       |        |                        |        |                            | 0.4    |       | 0.7    |                                |      |      |      |      |
| HCM LOS                    | -      |                        | -      |                            |        |       |        |                                |      |      |      |      |
|                            |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| Minor Lane/Major Mvmt      | NBL    | NBT                    | NBR    | EBLn1                      | WBLn1  | SBL   | SBT    | SBR                            |      |      |      |      |
| Capacity (veh/h)           | 691    | -                      | -      | -                          | -      | 648   | -      | -                              |      |      |      |      |
| HCM Lane V/C Ratio         | 0.055  | -                      | -      | -                          | -      | 0.039 | -      | -                              |      |      |      |      |
| HCM Control Delay (s)      | 10.5   | -                      | -      | -                          | -      | 10.8  | 0.5    | -                              |      |      |      |      |
| HCM Lane LOS               | B      | -                      | -      | -                          | -      | B     | A      | -                              |      |      |      |      |
| HCM 95th %tile Q(veh)      | 0.2    | -                      | -      | -                          | -      | 0.1   | -      | -                              |      |      |      |      |
|                            |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| Notes                      |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |        | +: Computation Not Defined |        |       |        | *: All major volume in platoon |      |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |        |        |       |        |      |      |
|--------------------------|--------|--------|-------|--------|------|------|
| Int Delay, s/veh         | 3.2    |        |       |        |      |      |
| Movement                 | EBL    | EBR    | NBL   | NBT    | SBT  | SBR  |
| Lane Configurations      | T      |        | T     |        | T    |      |
| Traffic Vol, veh/h       | 70     | 40     | 75    | 273    | 193  | 75   |
| Future Vol, veh/h        | 70     | 40     | 75    | 273    | 193  | 75   |
| Conflicting Peds, #/hr   | 0      | 0      | 0     | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop   | Free  | Free   | Free | Free |
| RT Channelized           | -      | None   | -     | None   | -    | None |
| Storage Length           | -      | -      | -     | -      | -    | -    |
| Veh in Median Storage, # | 0      | -      | -     | 0      | 0    | -    |
| Grade, %                 | 0      | -      | -     | 0      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92    | 92     | 92   | 92   |
| Heavy Vehicles, %        | 4      | 0      | 0     | 0      | 1    | 8    |
| Mvmt Flow                | 76     | 43     | 82    | 297    | 210  | 82   |
|                          |        |        |       |        |      |      |
| Major/Minor              | Minor2 | Major1 |       | Major2 |      |      |
| Conflicting Flow All     | 712    | 251    | 292   | 0      | -    | 0    |
| Stage 1                  | 251    | -      | -     | -      | -    | -    |
| Stage 2                  | 461    | -      | -     | -      | -    | -    |
| Critical Hdwy            | 6.44   | 6.2    | 4.1   | -      | -    | -    |
| Critical Hdwy Stg 1      | 5.44   | -      | -     | -      | -    | -    |
| Critical Hdwy Stg 2      | 5.44   | -      | -     | -      | -    | -    |
| Follow-up Hdwy           | 3.536  | 3.3    | 2.2   | -      | -    | -    |
| Pot Cap-1 Maneuver       | 396    | 793    | 1281  | -      | -    | -    |
| Stage 1                  | 786    | -      | -     | -      | -    | -    |
| Stage 2                  | 631    | -      | -     | -      | -    | -    |
| Platoon blocked, %       |        |        |       | -      | -    | -    |
| Mov Cap-1 Maneuver       | 366    | 793    | 1281  | -      | -    | -    |
| Mov Cap-2 Maneuver       | 366    | -      | -     | -      | -    | -    |
| Stage 1                  | 725    | -      | -     | -      | -    | -    |
| Stage 2                  | 631    | -      | -     | -      | -    | -    |
|                          |        |        |       |        |      |      |
| Approach                 | EB     | NB     |       | SB     |      |      |
| HCM Control Delay, s     | 5.7    | 1.7    |       | 0      |      |      |
| HCM LOS                  | C      |        |       |        |      |      |
|                          |        |        |       |        |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBTL   | EBLn1 | SBT    | SBR  |      |
| Capacity (veh/h)         | 1281   | -      | 455   | -      | -    |      |
| HCM Lane V/C Ratio       | 0.064  | -      | 0.263 | -      | -    |      |
| HCM Control Delay (s)    | 8      | 0      | 15.7  | -      | -    |      |
| HCM Lane LOS             | A      | A      | C     | -      | -    |      |
| HCM 95th %tile Q(veh)    | 0.2    | -      | 1     | -      | -    |      |

# **PM Phase I Modified**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

04/19/2019

| Intersection              |        |      |      |        |      |       |        |      |      |        |       |      |
|---------------------------|--------|------|------|--------|------|-------|--------|------|------|--------|-------|------|
| Int Delay, s/veh          | 7.6    |      |      |        |      |       |        |      |      |        |       |      |
| Movement                  | EBL    | EBT  | EBR  | WBL    | WBT  | WBR   | NBL    | NBT  | NBR  | SBL    | SBT   | SBR  |
| Lane Configurations       |        | ↕    |      |        | ↕    |       |        | ↕    |      |        | ↕     |      |
| Traffic Vol, veh/h        | 0      | 15   | 13   | 5      | 24   | 5     | 16     | 71   | 15   | 6      | 37    | 0    |
| Future Vol, veh/h         | 0      | 15   | 13   | 5      | 24   | 5     | 16     | 71   | 15   | 6      | 37    | 0    |
| Conflicting Peds, #/hr    | 0      | 0    | 0    | 0      | 0    | 0     | 0      | 0    | 0    | 0      | 0     | 0    |
| Sign Control              | Free   | Free | Free | Free   | Free | Free  | Stop   | Stop | Stop | Stop   | Stop  | Stop |
| RT Channelized            | -      | -    | Free | -      | -    | Free  | -      | -    | None | -      | -     | None |
| Storage Length            | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -     | -    |
| Veh in Median Storage, #- |        | 0    | -    | -      | 0    | -     | -      | 0    | -    | -      | 0     | -    |
| Grade, %                  | -      | 0    | -    | -      | 0    | -     | -      | 0    | -    | -      | 0     | -    |
| Peak Hour Factor          | 92     | 92   | 92   | 92     | 92   | 92    | 92     | 92   | 92   | 92     | 92    | 92   |
| Heavy Vehicles, %         | 0      | 7    | 9    | 20     | 9    | 0     | 7      | 0    | 0    | 0      | 9     | 0    |
| Mvmt Flow                 | 0      | 16   | 14   | 5      | 26   | 5     | 17     | 77   | 16   | 7      | 40    | 0    |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Major/Minor               | Major1 |      |      | Major2 |      |       | Minor1 |      |      | Minor2 |       |      |
| Conflicting Flow All      | 26     | 0    | -    | 16     | 0    | 0     | 72     | 52   | 16   | 99     | 52    | 26   |
| Stage 1                   | -      | -    | -    | -      | -    | -     | 16     | 16   | -    | 36     | 36    | -    |
| Stage 2                   | -      | -    | -    | -      | -    | -     | 56     | 36   | -    | 63     | 16    | -    |
| Critical Hdwy             | 4.1    | -    | -    | 4.3    | -    | -     | 7.17   | 6.5  | 6.2  | 7.1    | 6.59  | 6.2  |
| Critical Hdwy Stg 1       | -      | -    | -    | -      | -    | -     | 6.17   | 5.5  | -    | 6.1    | 5.59  | -    |
| Critical Hdwy Stg 2       | -      | -    | -    | -      | -    | -     | 6.17   | 5.5  | -    | 6.1    | 5.59  | -    |
| Follow-up Hdwy            | 2.2    | -    | -    | 2.38   | -    | -     | 3.563  | 4    | 3.3  | 3.5    | 4.081 | 3.3  |
| Pot Cap-1 Maneuver 1601   | -      | 0    | 1492 | -      | 0    | 907   | 843    | 1069 | 888  | 826    | 1056  | -    |
| Stage 1                   | -      | -    | 0    | -      | -    | 0     | 991    | 886  | -    | 985    | 851   | -    |
| Stage 2                   | -      | -    | 0    | -      | -    | 0     | 944    | 869  | -    | 953    | 868   | -    |
| Platoon blocked, %        | -      |      | -    |        |      |       |        |      |      |        |       |      |
| Mov Cap-1 Maneuver 1601   | -      | -    | 1492 | -      | -    | 872   | 840    | 1069 | 811  | 824    | 1056  | -    |
| Mov Cap-2 Maneuver        | -      | -    | -    | -      | -    | -     | 872    | 840  | -    | 811    | 824   | -    |
| Stage 1                   | -      | -    | -    | -      | -    | -     | 991    | 886  | -    | 985    | 848   | -    |
| Stage 2                   | -      | -    | -    | -      | -    | -     | 897    | 866  | -    | 857    | 868   | -    |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Approach                  | EB     |      |      | WB     |      |       | NB     |      |      | SB     |       |      |
| HCM Control Delay, s      | 0      |      |      | 1.3    |      |       | 9.7    |      |      | 9.6    |       |      |
| HCM LOS                   |        |      |      |        |      |       | A      |      |      | A      |       |      |
|                           |        |      |      |        |      |       |        |      |      |        |       |      |
| Minor Lane/Major Mvmt     | NBLn1  | EBL  | EBT  | WBL    | WBT  | SBLn1 |        |      |      |        |       |      |
| Capacity (veh/h)          | 873    | 1601 | -    | 1492   | -    | 822   |        |      |      |        |       |      |
| HCM Lane V/C Ratio        | 0.127  | -    | -    | 0.004  | -    | 0.057 |        |      |      |        |       |      |
| HCM Control Delay (s)     | 9.7    | 0    | -    | 7.4    | 0    | 9.6   |        |      |      |        |       |      |
| HCM Lane LOS              | A      | A    | -    | A      | A    | A     |        |      |      |        |       |      |
| HCM 95th %tile Q(veh)     | 0.4    | 0    | -    | 0      | -    | 0.2   |        |      |      |        |       |      |

**HCM 6th TWSC**  
**10: Old State Road 1 & Shoaff Rd**

04/19/2019

| Intersection              |        |      |        |       |        |       |        |      |      |      |      |      |
|---------------------------|--------|------|--------|-------|--------|-------|--------|------|------|------|------|------|
| Int Delay, s/veh          | 4.5    |      |        |       |        |       |        |      |      |      |      |      |
| Movement                  | EBL    | EBT  | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |        | ↕    |        |       | ↕      |       |        | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 13     | 18   | 30     | 23    | 28     | 28    | 48     | 158  | 26   | 14   | 89   | 4    |
| Future Vol, veh/h         | 13     | 18   | 30     | 23    | 28     | 28    | 48     | 158  | 26   | 14   | 89   | 4    |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Stop   | Stop | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free | Free | Free |
| RT Channelized            | -      | -    | None   | -     | -      | None  | -      | -    | None | -    | -    | None |
| Storage Length            | -      | -    | -      | -     | -      | -     | -      | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- |        | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Grade, %                  | -      | 0    | -      | -     | 0      | -     | -      | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92     | 92   | 92     | 92    | 92     | 92    | 92     | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 50     | 0    | 0      | 6     | 0      | 0     | 0      | 3    | 6    | 0    | 4    | 0    |
| Mvmt Flow                 | 14     | 20   | 33     | 25    | 30     | 30    | 52     | 172  | 28   | 15   | 97   | 4    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Major/Minor               | Minor2 |      | Minor1 |       | Major1 |       | Major2 |      |      |      |      |      |
| Conflicting Flow All      | 449    | 433  | 99     | 446   | 421    | 186   | 101    | 0    | 0    | 200  | 0    | 0    |
| Stage 1                   | 129    | 129  | -      | 290   | 290    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 320    | 304  | -      | 156   | 131    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy             | 7.6    | 6.5  | 6.2    | 7.16  | 6.5    | 6.2   | 4.1    | -    | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1       | 6.6    | 5.5  | -      | 6.16  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Critical Hdwy Stg 2       | 6.6    | 5.5  | -      | 6.16  | 5.5    | -     | -      | -    | -    | -    | -    | -    |
| Follow-up Hdwy            | 3.95   | 4    | 3.3    | 3.554 | 4      | 3.3   | 2.2    | -    | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver        | 447    | 519  | 962    | 516   | 527    | 861   | 1504   | -    | -    | 1384 | -    | -    |
| Stage 1                   | 772    | 793  | -      | 709   | 676    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 601    | 667  | -      | 837   | 792    | -     | -      | -    | -    | -    | -    | -    |
| Platoon blocked, %        |        |      |        |       |        |       |        | -    | -    |      | -    | -    |
| Mov Cap-1 Maneuver        | 396    | 493  | 962    | 465   | 501    | 861   | 1504   | -    | -    | 1384 | -    | -    |
| Mov Cap-2 Maneuver        | 396    | 493  | -      | 465   | 501    | -     | -      | -    | -    | -    | -    | -    |
| Stage 1                   | 742    | 784  | -      | 681   | 650    | -     | -      | -    | -    | -    | -    | -    |
| Stage 2                   | 531    | 641  | -      | 780   | 783    | -     | -      | -    | -    | -    | -    | -    |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Approach                  | EB     |      | WB     |       | NB     |       | SB     |      |      |      |      |      |
| HCM Control Delay, s      | 1.7    |      | 12.4   |       | 1.5    |       | 1      |      |      |      |      |      |
| HCM LOS                   | B      |      | B      |       |        |       |        |      |      |      |      |      |
|                           |        |      |        |       |        |       |        |      |      |      |      |      |
| Minor Lane/Major Mvmt     | NBL    | NBT  | NBR    | EBLn  | WBLn   | 1     | SBL    | SBT  | SBR  |      |      |      |
| Capacity (veh/h)          | 1504   | -    | -      | 607   | 573    | 1384  | -      | -    | -    |      |      |      |
| HCM Lane V/C Ratio        | 0.035  | -    | -      | 0.109 | 0.15   | 0.011 | -      | -    | -    |      |      |      |
| HCM Control Delay (s)     | 7.5    | 0    | -      | 11.7  | 12.4   | 7.6   | 0      | -    | -    |      |      |      |
| HCM Lane LOS              | A      | A    | -      | B     | B      | A     | A      | -    | -    |      |      |      |
| HCM 95th %tile Q(veh)     | 0.1    | -    | -      | 0.4   | 0.5    | 0     | -      | -    | -    |      |      |      |

# HCM 6th Signalized Intersection Summary

## 11: State Road 1 & Shoaff Rd

04/19/2019

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 13                                                                                | 108                                                                               | 34                                                                                | 50                                                                                | 41                                                                                | 55                                                                                | 35                                                                                  | 883                                                                                 | 119                                                                                 | 23                                                                                  | 925                                                                                 | 9                                                                                   |
| Future Volume (veh/h)        | 13                                                                                | 108                                                                               | 34                                                                                | 50                                                                                | 41                                                                                | 55                                                                                | 35                                                                                  | 883                                                                                 | 119                                                                                 | 23                                                                                  | 925                                                                                 | 9                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1885                                                                                | 1885                                                                                | 1826                                                                                | 1826                                                                                | 1826                                                                                |
| Adj Flow Rate, veh/h         | 14                                                                                | 117                                                                               | 37                                                                                | 54                                                                                | 45                                                                                | 60                                                                                | 38                                                                                  | 960                                                                                 | 129                                                                                 | 25                                                                                  | 1005                                                                                | 10                                                                                  |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 1                                                                                   | 1                                                                                   | 5                                                                                   | 5                                                                                   | 5                                                                                   |
| Cap, veh/h                   | 147                                                                               | 212                                                                               | 64                                                                                | 238                                                                               | 94                                                                                | 103                                                                               | 430                                                                                 | 1698                                                                                | 228                                                                                 | 142                                                                                 | 1790                                                                                | 18                                                                                  |
| Arrive On Green              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.54                                                                                | 0.54                                                                                | 0.54                                                                                | 0.54                                                                                | 0.54                                                                                | 0.54                                                                                |
| Sat Flow, veh/h              | 92                                                                                | 1314                                                                              | 397                                                                               | 467                                                                               | 586                                                                               | 638                                                                               | 564                                                                                 | 3173                                                                                | 426                                                                                 | 28                                                                                  | 3346                                                                                | 33                                                                                  |
| Grp Volume(v), veh/h         | 168                                                                               | 0                                                                                 | 0                                                                                 | 159                                                                               | 0                                                                                 | 0                                                                                 | 38                                                                                  | 542                                                                                 | 547                                                                                 | 536                                                                                 | 0                                                                                   | 504                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1802                                                                              | 0                                                                                 | 0                                                                                 | 1691                                                                              | 0                                                                                 | 0                                                                                 | 564                                                                                 | 1791                                                                                | 1808                                                                                | 1752                                                                                | 0                                                                                   | 1656                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 6.0                                                                                 |
| Cycle Q Clear(g_c), s        | 2.5                                                                               | 0.0                                                                               | 0.0                                                                               | 2.4                                                                               | 0.0                                                                               | 0.0                                                                               | 7.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 5.7                                                                                 | 0.0                                                                                 | 6.0                                                                                 |
| Prop In Lane                 | 0.08                                                                              |                                                                                   | 0.22                                                                              | 0.34                                                                              |                                                                                   | 0.38                                                                              | 1.00                                                                                |                                                                                     | 0.24                                                                                | 0.05                                                                                |                                                                                     | 0.02                                                                                |
| Lane Grp Cap(c), veh/h       | 422                                                                               | 0                                                                                 | 0                                                                                 | 435                                                                               | 0                                                                                 | 0                                                                                 | 430                                                                                 | 958                                                                                 | 968                                                                                 | 1065                                                                                | 0                                                                                   | 886                                                                                 |
| V/C Ratio(X)                 | 0.40                                                                              | 0.00                                                                              | 0.00                                                                              | 0.37                                                                              | 0.00                                                                              | 0.00                                                                              | 0.09                                                                                | 0.57                                                                                | 0.57                                                                                | 0.50                                                                                | 0.00                                                                                | 0.57                                                                                |
| Avail Cap(c_a), veh/h        | 1210                                                                              | 0                                                                                 | 0                                                                                 | 1118                                                                              | 0                                                                                 | 0                                                                                 | 567                                                                                 | 1391                                                                                | 1405                                                                                | 1458                                                                                | 0                                                                                   | 1286                                                                                |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 11.5                                                                              | 0.0                                                                               | 0.0                                                                               | 11.4                                                                              | 0.0                                                                               | 0.0                                                                               | 7.1                                                                                 | 4.6                                                                                 | 4.6                                                                                 | 4.5                                                                                 | 0.0                                                                                 | 4.6                                                                                 |
| Incr Delay (d2), s/veh       | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 0.5                                                                                 | 0.5                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.6                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 0.9                                                                                 | 0.9                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.8                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 12.1                                                                              | 0.0                                                                               | 0.0                                                                               | 11.9                                                                              | 0.0                                                                               | 0.0                                                                               | 7.2                                                                                 | 5.1                                                                                 | 5.1                                                                                 | 4.9                                                                                 | 0.0                                                                                 | 5.2                                                                                 |
| LnGrp LOS                    | B                                                                                 | A                                                                                 | A                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 168                                                                               |                                                                                   |                                                                                   | 159                                                                               |                                                                                   |                                                                                     | 1127                                                                                |                                                                                     |                                                                                     | 1040                                                                                |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 12.1                                                                              |                                                                                   |                                                                                   | 11.9                                                                              |                                                                                   |                                                                                     | 5.2                                                                                 |                                                                                     |                                                                                     | 5.0                                                                                 |                                                                                     |
| Approach LOS                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Timer - Assigned Phs         |                                                                                   | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     |                                                                                   | 20.3                                                                              |                                                                                   | 9.3                                                                               |                                                                                   | 20.3                                                                              |                                                                                     | 9.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                               |                                                                                     | 4.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  |                                                                                   | 23.0                                                                              |                                                                                   | 18.0                                                                              |                                                                                   | 23.0                                                                              |                                                                                     | 18.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s |                                                                                   | 9.4                                                                               |                                                                                   | 4.5                                                                               |                                                                                   | 8.0                                                                               |                                                                                     | 4.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      |                                                                                   | 6.4                                                                               |                                                                                   | 0.6                                                                               |                                                                                   | 6.3                                                                               |                                                                                     | 0.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |        |        |       |        |      |      |
|--------------------------|--------|--------|-------|--------|------|------|
| Int Delay, s/veh         | 3.2    |        |       |        |      |      |
| Movement                 | EBL    | EBR    | NBL   | NBT    | SBT  | SBR  |
| Lane Configurations      | T      |        | T     |        | T    |      |
| Traffic Vol, veh/h       | 70     | 40     | 75    | 273    | 193  | 75   |
| Future Vol, veh/h        | 70     | 40     | 75    | 273    | 193  | 75   |
| Conflicting Peds, #/hr   | 0      | 0      | 0     | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop   | Free  | Free   | Free | Free |
| RT Channelized           | -      | None   | -     | None   | -    | None |
| Storage Length           | -      | -      | -     | -      | -    | -    |
| Veh in Median Storage, # | -      | -      | -     | 0      | 0    | -    |
| Grade, %                 | 0      | -      | -     | 0      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92    | 92     | 92   | 92   |
| Heavy Vehicles, %        | 4      | 0      | 0     | 0      | 1    | 8    |
| Mvmt Flow                | 76     | 43     | 82    | 297    | 210  | 82   |
|                          |        |        |       |        |      |      |
| Major/Minor              | Minor2 | Major1 |       | Major2 |      |      |
| Conflicting Flow All     | 712    | 251    | 292   | 0      | -    | 0    |
| Stage 1                  | 251    | -      | -     | -      | -    | -    |
| Stage 2                  | 461    | -      | -     | -      | -    | -    |
| Critical Hdwy            | 6.44   | 6.2    | 4.1   | -      | -    | -    |
| Critical Hdwy Stg 1      | 5.44   | -      | -     | -      | -    | -    |
| Critical Hdwy Stg 2      | 5.44   | -      | -     | -      | -    | -    |
| Follow-up Hdwy           | 3.536  | 3.3    | 2.2   | -      | -    | -    |
| Pot Cap-1 Maneuver       | 396    | 793    | 1281  | -      | -    | -    |
| Stage 1                  | 786    | -      | -     | -      | -    | -    |
| Stage 2                  | 631    | -      | -     | -      | -    | -    |
| Platoon blocked, %       |        |        |       | -      | -    | -    |
| Mov Cap-1 Maneuver       | 366    | 793    | 1281  | -      | -    | -    |
| Mov Cap-2 Maneuver       | 366    | -      | -     | -      | -    | -    |
| Stage 1                  | 725    | -      | -     | -      | -    | -    |
| Stage 2                  | 631    | -      | -     | -      | -    | -    |
|                          |        |        |       |        |      |      |
| Approach                 | EB     | NB     |       | SB     |      |      |
| HCM Control Delay, s     | 5.7    | 1.7    |       | 0      |      |      |
| HCM LOS                  | C      |        |       |        |      |      |
|                          |        |        |       |        |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBTL   | EBLn1 | SBT    | SBR  |      |
| Capacity (veh/h)         | 1281   | -      | 455   | -      | -    |      |
| HCM Lane V/C Ratio       | 0.064  | -      | 0.263 | -      | -    |      |
| HCM Control Delay (s)    | 8      | 0      | 15.7  | -      | -    |      |
| HCM Lane LOS             | A      | A      | C     | -      | -    |      |
| HCM 95th %tile Q(veh)    | 0.2    | -      | 1     | -      | -    |      |

## **AM Phase II**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

08/22/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 7.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 3    | 83   | 28   | 127  | 60   | 36   | 11   | 19   | 43   | 21   | 77   | 0    |
| Future Vol, veh/h         | 3    | 83   | 28   | 127  | 60   | 36   | 11   | 19   | 43   | 21   | 77   | 0    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized            | -    | -    | Free | -    | -    | Free | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 100  | 0    | 5    | 9    | 0    | 0    | 13   | 8    | 10   | 17   | 2    | 0    |
| Mvmt Flow                 | 3    | 90   | 30   | 138  | 65   | 39   | 12   | 21   | 47   | 23   | 84   | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |      | Minor2 |       |      |
|----------------------|--------|---|---|--------|---|---|--------|-------|------|--------|-------|------|
| Conflicting Flow All | 65     | 0 | - | 90     | 0 | 0 | 479    | 437   | 90   | 471    | 437   | 65   |
| Stage 1              | -      | - | - | -      | - | - | 96     | 96    | -    | 341    | 341   | -    |
| Stage 2              | -      | - | - | -      | - | - | 383    | 341   | -    | 130    | 96    | -    |
| Critical Hdwy        | 5.1    | - | - | 4.19   | - | - | 7.23   | 6.58  | 6.3  | 7.27   | 6.52  | 6.2  |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.23   | 5.58  | -    | 6.27   | 5.52  | -    |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.23   | 5.58  | -    | 6.27   | 5.52  | -    |
| Follow-up Hdwy       | 3.1    | - | - | 2.281  | - | - | 3.617  | 4.072 | 3.39 | 3.653  | 4.018 | 3.3  |
| Pot Cap-1 Maneuver   | 1089   | - | 0 | 1462   | - | 0 | 479    | 504   | 946  | 479    | 513   | 1005 |
| Stage 1              | -      | - | 0 | -      | - | 0 | 884    | 804   | -    | 644    | 639   | -    |
| Stage 2              | -      | - | 0 | -      | - | 0 | 618    | 628   | -    | 839    | 815   | -    |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -     | -    | -      | -     | -    |
| Mov Cap-1 Maneuver   | 1089   | - | - | 1462   | - | - | 381    | 453   | 946  | 406    | 461   | 1005 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 381    | 453   | -    | 406    | 461   | -    |
| Stage 1              | -      | - | - | -      | - | - | 881    | 802   | -    | 642    | 576   | -    |
| Stage 2              | -      | - | - | -      | - | - | 476    | 566   | -    | 775    | 813   | -    |

| Approach             | EB  | WB  | NB   | SB   |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.3 | 5.2 | 11.6 | 15.5 |
| HCM LOS              |     |     | B    | C    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | WBL   | WBT | SBLn1 |
|-----------------------|-------|-------|-----|-------|-----|-------|
| Capacity (veh/h)      | 628   | 1089  | -   | 1462  | -   | 448   |
| HCM Lane V/C Ratio    | 0.126 | 0.003 | -   | 0.094 | -   | 0.238 |
| HCM Control Delay (s) | 11.6  | 8.3   | 0   | 7.7   | 0   | 15.5  |
| HCM Lane LOS          | B     | A     | A   | A     | A   | C     |
| HCM 95th %tile Q(veh) | 0.4   | 0     | -   | 0.3   | -   | 0.9   |

**HCM 6th TWSC**  
**10: Old State Road 1 & Shoaff Rd**

08/22/2019

| Intersection               |        |                        |       |       |                            |       |       |        |                                |      |      |      |
|----------------------------|--------|------------------------|-------|-------|----------------------------|-------|-------|--------|--------------------------------|------|------|------|
| Int Delay, s/veh           | 56.7   |                        |       |       |                            |       |       |        |                                |      |      |      |
| Movement                   | EBL    | EBT                    | EBR   | WBL   | WBT                        | WBR   | NBL   | NBT    | NBR                            | SBL  | SBT  | SBR  |
| Lane Configurations        |        | ↕                      |       |       | ↕                          |       |       | ↕      |                                |      | ↕    |      |
| Traffic Vol, veh/h         | 48     | 46                     | 156   | 185   | 45                         | 32    | 111   | 186    | 22                             | 20   | 175  | 30   |
| Future Vol, veh/h          | 48     | 46                     | 156   | 185   | 45                         | 32    | 111   | 186    | 22                             | 20   | 175  | 30   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0     | 0                          | 0     | 0     | 0      | 0                              | 0    | 0    | 0    |
| Sign Control               | Stop   | Stop                   | Stop  | Stop  | Stop                       | Stop  | Free  | Free   | Free                           | Free | Free | Free |
| RT Channelized             | -      | -                      | None  | -     | -                          | None  | -     | -      | None                           | -    | -    | None |
| Storage Length             | -      | -                      | -     | -     | -                          | -     | -     | -      | -                              | -    | -    | -    |
| Veh in Median Storage, #-  | 0      | -                      | -     | -     | 0                          | -     | -     | 0      | -                              | -    | 0    | -    |
| Grade, %                   | -      | 0                      | -     | -     | 0                          | -     | -     | 0      | -                              | -    | 0    | -    |
| Peak Hour Factor           | 92     | 92                     | 92    | 92    | 92                         | 92    | 92    | 92     | 92                             | 92   | 92   | 92   |
| Heavy Vehicles, %          | 50     | 0                      | 3     | 5     | 0                          | 0     | 6     | 7      | 0                              | 10   | 5    | 11   |
| Mvmt Flow                  | 52     | 50                     | 170   | 201   | 49                         | 35    | 121   | 202    | 24                             | 22   | 190  | 33   |
|                            |        |                        |       |       |                            |       |       |        |                                |      |      |      |
| Major/Minor                | Minor2 | Minor1                 |       |       | Major1                     |       |       | Major2 |                                |      |      |      |
| Conflicting Flow All       | 749    | 719                    | 207   | 817   | 723                        | 214   | 223   | 0      | 0                              | 226  | 0    | 0    |
| Stage 1                    | 251    | 251                    | -     | 456   | 456                        | -     | -     | -      | -                              | -    | -    | -    |
| Stage 2                    | 498    | 468                    | -     | 361   | 267                        | -     | -     | -      | -                              | -    | -    | -    |
| Critical Hdwy              | 7.6    | 6.5                    | 6.23  | 7.15  | 6.5                        | 6.2   | 4.16  | -      | -                              | 4.2  | -    | -    |
| Critical Hdwy Stg 1        | 6.6    | 5.5                    | -     | 6.15  | 5.5                        | -     | -     | -      | -                              | -    | -    | -    |
| Critical Hdwy Stg 2        | 6.6    | 5.5                    | -     | 6.15  | 5.5                        | -     | -     | -      | -                              | -    | -    | -    |
| Follow-up Hdwy             | 3.95   | 4                      | 3.327 | 3.545 | 4                          | 3.3   | 2.254 | -      | -                              | 2.29 | -    | -    |
| Pot Cap-1 Maneuver         | 275    | 357                    | 831   | 292   | 355                        | 831   | 1323  | -      | -                              | 1297 | -    | -    |
| Stage 1                    | 658    | 703                    | -     | 578   | 572                        | -     | -     | -      | -                              | -    | -    | -    |
| Stage 2                    | 475    | 565                    | -     | 651   | 692                        | -     | -     | -      | -                              | -    | -    | -    |
| Platoon blocked, %         |        |                        |       |       |                            |       |       | -      | -                              |      | -    | -    |
| Mov Cap-1 Maneuver 211     | 313    | 831                    | ~ 185 | 312   | 831                        | 1323  | -     | -      | -                              | 1297 | -    | -    |
| Mov Cap-2 Maneuver 211     | 313    | -                      | ~ 185 | 312   | -                          | -     | -     | -      | -                              | -    | -    | -    |
| Stage 1                    | 589    | 690                    | -     | 517   | 512                        | -     | -     | -      | -                              | -    | -    | -    |
| Stage 2                    | 368    | 506                    | -     | 471   | 679                        | -     | -     | -      | -                              | -    | -    | -    |
|                            |        |                        |       |       |                            |       |       |        |                                |      |      |      |
| Approach                   | EB     |                        | WB    |       | NB                         |       | SB    |        |                                |      |      |      |
| HCM Control Delay, s       | 25     |                        | 200.6 |       | 2.8                        |       | 0.7   |        |                                |      |      |      |
| HCM LOS                    | D      |                        | F     |       |                            |       |       |        |                                |      |      |      |
|                            |        |                        |       |       |                            |       |       |        |                                |      |      |      |
| Minor Lane/Major Mvmt      | NBL    | NBT                    | NBR   | EBLn  | WBLn                       | WBLn1 | SBL   | SBT    | SBR                            |      |      |      |
| Capacity (veh/h)           | 1323   | -                      | -     | 445   | 222                        | 1297  | -     | -      |                                |      |      |      |
| HCM Lane V/C Ratio         | 0.091  | -                      | -     | 0.611 | 1.283                      | 0.017 | -     | -      |                                |      |      |      |
| HCM Control Delay (s)      | 8      | 0                      | -     | 25    | 200.6                      | 7.8   | 0     | -      |                                |      |      |      |
| HCM Lane LOS               | A      | A                      | -     | D     | F                          | A     | A     | -      |                                |      |      |      |
| HCM 95th %tile Q(veh)      | 0.3    | -                      | -     | 4     | 15                         | 0.1   | -     | -      |                                |      |      |      |
| Notes                      |        |                        |       |       |                            |       |       |        |                                |      |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |       | +: Computation Not Defined |       |       |        | *: All major volume in platoon |      |      |      |

# HCM 6th Signalized Intersection Summary

## 11: State Road 1 & Shoaff Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↕    |      |      | ↕    |      | ↗    | ↕    |      |      | ↕    |      |
| Traffic Volume (veh/h)       | 41                                                                                 | 28   | 77   | 119  | 127  | 26   | 21   | 816  | 51   | 25   | 1358 | 48   |
| Future Volume (veh/h)        | 41                                                                                 | 28   | 77   | 119  | 127  | 26   | 21   | 816  | 51   | 25   | 1358 | 48   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900 | 1900 | 1900 | 1648 | 1826 | 1826 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h         | 46                                                                                 | 30   | 84   | 129  | 138  | 28   | 23   | 887  | 55   | 27   | 1476 | 52   |
| Peak Hour Factor             | 0.90                                                                               | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 17   | 5    | 5    | 2    | 2    | 2    |
| Cap, veh/h                   | 175                                                                                | 113  | 206  | 258  | 198  | 36   | 230  | 1905 | 118  | 96   | 1928 | 67   |
| Arrive On Green              | 0.23                                                                               | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| Sat Flow, veh/h              | 321                                                                                | 498  | 905  | 632  | 874  | 158  | 300  | 3318 | 206  | 24   | 3359 | 118  |
| Grp Volume(v), veh/h         | 160                                                                                | 0    | 0    | 295  | 0    | 0    | 23   | 464  | 478  | 811  | 0    | 744  |
| Grp Sat Flow(s),veh/h/ln     | 1724                                                                               | 0    | 0    | 1663 | 0    | 0    | 300  | 1735 | 1789 | 1819 | 0    | 1681 |
| Q Serve(g_s), s              | 0.0                                                                                | 0.0  | 0.0  | 3.8  | 0.0  | 0.0  | 2.9  | 7.0  | 7.0  | 0.0  | 0.0  | 15.3 |
| Cycle Q Clear(g_c), s        | 3.6                                                                                | 0.0  | 0.0  | 7.3  | 0.0  | 0.0  | 18.2 | 7.0  | 7.0  | 14.8 | 0.0  | 15.3 |
| Prop In Lane                 | 0.29                                                                               |      | 0.52 | 0.44 |      | 0.09 | 1.00 |      | 0.12 | 0.03 |      | 0.07 |
| Lane Grp Cap(c), veh/h       | 494                                                                                | 0    | 0    | 492  | 0    | 0    | 230  | 996  | 1027 | 1127 | 0    | 965  |
| V/C Ratio(X)                 | 0.32                                                                               | 0.00 | 0.00 | 0.60 | 0.00 | 0.00 | 0.10 | 0.47 | 0.47 | 0.72 | 0.00 | 0.77 |
| Avail Cap(c_a), veh/h        | 753                                                                                | 0    | 0    | 757  | 0    | 0    | 276  | 1264 | 1303 | 1396 | 0    | 1225 |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 14.9                                                                               | 0.0  | 0.0  | 16.2 | 0.0  | 0.0  | 14.3 | 5.6  | 5.6  | 7.3  | 0.0  | 7.4  |
| Incr Delay (d2), s/veh       | 0.4                                                                                | 0.0  | 0.0  | 1.2  | 0.0  | 0.0  | 0.2  | 0.3  | 0.3  | 1.4  | 0.0  | 2.4  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 1.1                                                                                | 0.0  | 0.0  | 2.3  | 0.0  | 0.0  | 0.2  | 0.9  | 1.0  | 2.4  | 0.0  | 2.4  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 15.3                                                                               | 0.0  | 0.0  | 17.4 | 0.0  | 0.0  | 14.5 | 5.9  | 5.9  | 8.6  | 0.0  | 9.7  |
| LnGrp LOS                    | B                                                                                  | A    | A    | B    | A    | A    | B    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h          |                                                                                    | 160  |      |      | 295  |      |      | 965  |      |      | 1555 |      |
| Approach Delay, s/veh        |                                                                                    | 15.3 |      |      | 17.4 |      |      | 6.1  |      |      | 9.2  |      |
| Approach LOS                 |                                                                                    | B    |      |      | B    |      |      | A    |      |      | A    |      |
| Timer - Assigned Phs         |                                                                                    | 2    |      | 4    |      | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |                                                                                    | 30.5 |      | 14.8 |      | 30.5 |      | 14.8 |      |      |      |      |
| Change Period (Y+Rc), s      |                                                                                    | 4.5  |      | 4.5  |      | 4.5  |      | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s  |                                                                                    | 33.0 |      | 18.0 |      | 33.0 |      | 18.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |                                                                                    | 20.2 |      | 5.6  |      | 17.3 |      | 9.3  |      |      |      |      |
| Green Ext Time (p_c), s      |                                                                                    | 4.6  |      | 0.6  |      | 8.7  |      | 1.0  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |                                                                                    |      | 9.3  |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |                                                                                    |      | A    |      |      |      |      |      |      |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 3.4    |        |      |        |      |      |
| Movement                 | EBL    | EBR    | NBL  | NBT    | SBT  | SBR  |
| Lane Configurations      | W      |        |      | W      | W    |      |
| Traffic Vol, veh/h       | 76     | 82     | 16   | 197    | 246  | 62   |
| Future Vol, veh/h        | 76     | 82     | 16   | 197    | 246  | 62   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop   | Free | Free   | Free | Free |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | -      | -    | -    |
| Veh in Median Storage, # | -      | -      | -    | 0      | 0    | -    |
| Grade, %                 | 0      | -      | -    | 0      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 15     | 7      | 0    | 5      | 1    | 16   |
| Mvmt Flow                | 83     | 89     | 17   | 214    | 267  | 67   |
| Major/Minor              | Minor2 | Major1 |      | Major2 |      |      |
| Conflicting Flow All     | 549    | 301    | 334  | 0      | -    | 0    |
| Stage 1                  | 301    | -      | -    | -      | -    | -    |
| Stage 2                  | 248    | -      | -    | -      | -    | -    |
| Critical Hdwy            | 6.55   | 6.27   | 4.1  | -      | -    | -    |
| Critical Hdwy Stg 1      | 5.55   | -      | -    | -      | -    | -    |
| Critical Hdwy Stg 2      | 5.55   | -      | -    | -      | -    | -    |
| Follow-up Hdwy           | 3.635  | 3.363  | 2.2  | -      | -    | -    |
| Pot Cap-1 Maneuver       | 475    | 727    | 1237 | -      | -    | -    |
| Stage 1                  | 722    | -      | -    | -      | -    | -    |
| Stage 2                  | 764    | -      | -    | -      | -    | -    |
| Platoon blocked, %       |        |        |      | -      | -    | -    |
| Mov Cap-1 Maneuver       | 467    | 727    | 1237 | -      | -    | -    |
| Mov Cap-2 Maneuver       | 467    | -      | -    | -      | -    | -    |
| Stage 1                  | 710    | -      | -    | -      | -    | -    |
| Stage 2                  | 764    | -      | -    | -      | -    | -    |
| Approach                 | EB     | NB     |      | SB     |      |      |
| HCM Control Delay, s     | 3.9    | 0.6    |      | 0      |      |      |
| HCM LOS                  | B      |        |      |        |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBTLn1 | EBL  | EBLn1  | SBT  | SBR  |
| Capacity (veh/h)         | 1237   | -      | 573  | -      | -    | -    |
| HCM Lane V/C Ratio       | 0.014  | -      | 0.3  | -      | -    | -    |
| HCM Control Delay (s)    | 8      | 0      | 13.9 | -      | -    | -    |
| HCM Lane LOS             | A      | A      | B    | -      | -    | -    |
| HCM 95th %tile Q(veh)    | 0      | -      | 1.3  | -      | -    | -    |

# **AM Phase II Modified**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

08/22/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 7.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 3    | 83   | 28   | 127  | 60   | 36   | 11   | 19   | 43   | 21   | 77   | 0    |
| Future Vol, veh/h         | 3    | 83   | 28   | 127  | 60   | 36   | 11   | 19   | 43   | 21   | 77   | 0    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized            | -    | -    | Free | -    | -    | Free | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 100  | 0    | 5    | 9    | 0    | 0    | 13   | 8    | 10   | 17   | 2    | 0    |
| Mvmt Flow                 | 3    | 90   | 30   | 138  | 65   | 39   | 12   | 21   | 47   | 23   | 84   | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |      | Minor2 |       |      |
|----------------------|--------|---|---|--------|---|---|--------|-------|------|--------|-------|------|
| Conflicting Flow All | 65     | 0 | - | 90     | 0 | 0 | 479    | 437   | 90   | 471    | 437   | 65   |
| Stage 1              | -      | - | - | -      | - | - | 96     | 96    | -    | 341    | 341   | -    |
| Stage 2              | -      | - | - | -      | - | - | 383    | 341   | -    | 130    | 96    | -    |
| Critical Hdwy        | 5.1    | - | - | 4.19   | - | - | 7.23   | 6.58  | 6.3  | 7.27   | 6.52  | 6.2  |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.23   | 5.58  | -    | 6.27   | 5.52  | -    |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.23   | 5.58  | -    | 6.27   | 5.52  | -    |
| Follow-up Hdwy       | 3.1    | - | - | 2.281  | - | - | 3.617  | 4.072 | 3.39 | 3.653  | 4.018 | 3.3  |
| Pot Cap-1 Maneuver   | 1089   | - | 0 | 1462   | - | 0 | 479    | 504   | 946  | 479    | 513   | 1005 |
| Stage 1              | -      | - | 0 | -      | - | 0 | 884    | 804   | -    | 644    | 639   | -    |
| Stage 2              | -      | - | 0 | -      | - | 0 | 618    | 628   | -    | 839    | 815   | -    |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -     | -    | -      | -     | -    |
| Mov Cap-1 Maneuver   | 1089   | - | - | 1462   | - | - | 381    | 453   | 946  | 406    | 461   | 1005 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 381    | 453   | -    | 406    | 461   | -    |
| Stage 1              | -      | - | - | -      | - | - | 881    | 802   | -    | 642    | 576   | -    |
| Stage 2              | -      | - | - | -      | - | - | 476    | 566   | -    | 775    | 813   | -    |

| Approach             | EB  | WB  | NB   | SB   |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.3 | 5.2 | 11.6 | 15.5 |
| HCM LOS              |     |     | B    | C    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | WBL   | WBT | SBLn1 |
|-----------------------|-------|-------|-----|-------|-----|-------|
| Capacity (veh/h)      | 628   | 1089  | -   | 1462  | -   | 448   |
| HCM Lane V/C Ratio    | 0.126 | 0.003 | -   | 0.094 | -   | 0.238 |
| HCM Control Delay (s) | 11.6  | 8.3   | 0   | 7.7   | 0   | 15.5  |
| HCM Lane LOS          | B     | A     | A   | A     | A   | C     |
| HCM 95th %tile Q(veh) | 0.4   | 0     | -   | 0.3   | -   | 0.9   |

# HCM 6th Signalized Intersection Summary

## 10: Old State Road 1 & Shoaff Rd

08/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 48                                                                                | 46                                                                                | 156                                                                               | 185                                                                               | 45                                                                                | 32                                                                                | 111                                                                                | 186                                                                                 | 22                                                                                  | 20                                                                                  | 175                                                                                 | 30                                                                                  |
| Future Volume (veh/h)        | 48                                                                                | 46                                                                                | 156                                                                               | 185                                                                               | 45                                                                                | 32                                                                                | 111                                                                                | 186                                                                                 | 22                                                                                  | 20                                                                                  | 175                                                                                 | 30                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1796                                                                               | 1796                                                                                | 1796                                                                                | 1826                                                                                | 1826                                                                                | 1826                                                                                |
| Adj Flow Rate, veh/h         | 52                                                                                | 50                                                                                | 170                                                                               | 201                                                                               | 49                                                                                | 35                                                                                | 121                                                                                | 202                                                                                 | 24                                                                                  | 22                                                                                  | 190                                                                                 | 33                                                                                  |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                  | 7                                                                                   | 7                                                                                   | 5                                                                                   | 5                                                                                   | 5                                                                                   |
| Cap, veh/h                   | 173                                                                               | 107                                                                               | 269                                                                               | 421                                                                               | 78                                                                                | 46                                                                                | 338                                                                                | 507                                                                                 | 53                                                                                  | 139                                                                                 | 726                                                                                 | 118                                                                                 |
| Arrive On Green              | 0.25                                                                              | 0.25                                                                              | 0.25                                                                              | 0.25                                                                              | 0.25                                                                              | 0.25                                                                              | 0.50                                                                               | 0.50                                                                                | 0.50                                                                                | 0.50                                                                                | 0.50                                                                                | 0.50                                                                                |
| Sat Flow, veh/h              | 217                                                                               | 428                                                                               | 1076                                                                              | 1002                                                                              | 311                                                                               | 184                                                                               | 407                                                                                | 1015                                                                                | 106                                                                                 | 60                                                                                  | 1452                                                                                | 235                                                                                 |
| Grp Volume(v), veh/h         | 272                                                                               | 0                                                                                 | 0                                                                                 | 285                                                                               | 0                                                                                 | 0                                                                                 | 347                                                                                | 0                                                                                   | 0                                                                                   | 245                                                                                 | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1721                                                                              | 0                                                                                 | 0                                                                                 | 1498                                                                              | 0                                                                                 | 0                                                                                 | 1527                                                                               | 0                                                                                   | 0                                                                                   | 1747                                                                                | 0                                                                                   | 0                                                                                   |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 4.9                                                                               | 0.0                                                                               | 0.0                                                                               | 5.9                                                                               | 0.0                                                                               | 0.0                                                                               | 4.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.9                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 0.19                                                                              |                                                                                   | 0.62                                                                              | 0.71                                                                              |                                                                                   | 0.12                                                                              | 0.35                                                                               |                                                                                     | 0.07                                                                                | 0.09                                                                                |                                                                                     | 0.13                                                                                |
| Lane Grp Cap(c), veh/h       | 549                                                                               | 0                                                                                 | 0                                                                                 | 545                                                                               | 0                                                                                 | 0                                                                                 | 899                                                                                | 0                                                                                   | 0                                                                                   | 983                                                                                 | 0                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.50                                                                              | 0.00                                                                              | 0.00                                                                              | 0.52                                                                              | 0.00                                                                              | 0.00                                                                              | 0.39                                                                               | 0.00                                                                                | 0.00                                                                                | 0.25                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 948                                                                               | 0                                                                                 | 0                                                                                 | 872                                                                               | 0                                                                                 | 0                                                                                 | 899                                                                                | 0                                                                                   | 0                                                                                   | 983                                                                                 | 0                                                                                   | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 12.0                                                                              | 0.0                                                                               | 0.0                                                                               | 12.2                                                                              | 0.0                                                                               | 0.0                                                                               | 5.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 5.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               | 0.0                                                                               | 1.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 1.4                                                                               | 0.0                                                                               | 0.0                                                                               | 1.5                                                                               | 0.0                                                                               | 0.0                                                                               | 1.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 12.7                                                                              | 0.0                                                                               | 0.0                                                                               | 13.0                                                                              | 0.0                                                                               | 0.0                                                                               | 6.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 5.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | B                                                                                 | A                                                                                 | A                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 | A                                                                                  | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 272                                                                               |                                                                                   |                                                                                   | 285                                                                               |                                                                                   |                                                                                    | 347                                                                                 |                                                                                     |                                                                                     | 245                                                                                 |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 12.7                                                                              |                                                                                   |                                                                                   | 13.0                                                                              |                                                                                   |                                                                                    | 6.9                                                                                 |                                                                                     |                                                                                     | 5.8                                                                                 |                                                                                     |
| Approach LOS                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Timer - Assigned Phs         |                                                                                   | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     |                                                                                   | 22.5                                                                              |                                                                                   | 13.5                                                                              |                                                                                   | 22.5                                                                              |                                                                                    | 13.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                               |                                                                                    | 4.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  |                                                                                   | 18.0                                                                              |                                                                                   | 18.0                                                                              |                                                                                   | 18.0                                                                              |                                                                                    | 18.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s |                                                                                   | 6.6                                                                               |                                                                                   | 6.9                                                                               |                                                                                   | 4.9                                                                               |                                                                                    | 7.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      |                                                                                   | 1.7                                                                               |                                                                                   | 1.1                                                                               |                                                                                   | 1.1                                                                               |                                                                                    | 1.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 9.5                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM 6th Signalized Intersection Summary

## 11: State Road 1 & Shoaff Rd

04/19/2019



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      |      | ↕    |      |
| Traffic Volume (veh/h) 41    | 28   | 77   | 119  | 127  | 26   | 21   | 816  | 51   | 25   | 1358 | 48   |      |
| Future Volume (veh/h) 41     | 28   | 77   | 119  | 127  | 26   | 21   | 816  | 51   | 25   | 1358 | 48   |      |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)1.00      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |      |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        | No   |      |      | No   |      |      | No   |      |      | No   |      |      |
| Adj Sat Flow, veh/h/ln1900   | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1648 | 1826 | 1826 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h         | 46   | 30   | 84   | 129  | 138  | 28   | 23   | 887  | 55   | 27   | 1476 | 52   |
| Peak Hour Factor             | 0.90 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 0    | 0    | 0    | 17   | 5    | 5    | 2    | 2    | 2    |
| Cap, veh/h                   | 175  | 113  | 206  | 258  | 198  | 36   | 230  | 1905 | 118  | 96   | 1928 | 67   |
| Arrive On Green              | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| Sat Flow, veh/h              | 321  | 498  | 905  | 632  | 874  | 158  | 300  | 3318 | 206  | 24   | 3359 | 118  |
| Grp Volume(v), veh/h160      | 0    | 0    | 295  | 0    | 0    | 23   | 464  | 478  | 811  | 0    | 744  |      |
| Grp Sat Flow(s),veh/h/ln124  | 0    | 0    | 1663 | 0    | 0    | 300  | 1735 | 1789 | 1819 | 0    | 1681 |      |
| Q Serve(g_s), s              | 0.0  | 0.0  | 0.0  | 3.8  | 0.0  | 0.0  | 2.9  | 7.0  | 7.0  | 0.0  | 0.0  | 15.3 |
| Cycle Q Clear(g_c), s        | 3.6  | 0.0  | 0.0  | 7.3  | 0.0  | 0.0  | 18.2 | 7.0  | 7.0  | 14.8 | 0.0  | 15.3 |
| Prop In Lane                 | 0.29 |      | 0.52 | 0.44 |      | 0.09 | 1.00 |      | 0.12 | 0.03 |      | 0.07 |
| Lane Grp Cap(c), veh/h194    | 0    | 0    | 492  | 0    | 0    | 230  | 996  | 1027 | 1127 | 0    | 965  |      |
| V/C Ratio(X)                 | 0.32 | 0.00 | 0.00 | 0.60 | 0.00 | 0.00 | 0.10 | 0.47 | 0.47 | 0.72 | 0.00 | 0.77 |
| Avail Cap(c_a), veh/h753     | 0    | 0    | 757  | 0    | 0    | 276  | 1264 | 1303 | 1396 | 0    | 1225 |      |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh9    | 0.0  | 0.0  | 16.2 | 0.0  | 0.0  | 14.3 | 5.6  | 5.6  | 7.3  | 0.0  | 7.4  |      |
| Incr Delay (d2), s/veh0.4    | 0.0  | 0.0  | 1.2  | 0.0  | 0.0  | 0.2  | 0.3  | 0.3  | 1.4  | 0.0  | 2.4  |      |
| Initial Q Delay(d3),s/veh0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 0.0  | 0.0  | 2.3  | 0.0  | 0.0  | 0.2  | 0.9  | 1.0  | 2.4  | 0.0  | 2.4  |      |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh15.3     | 0.0  | 0.0  | 17.4 | 0.0  | 0.0  | 14.5 | 5.9  | 5.9  | 8.6  | 0.0  | 9.7  |      |
| LnGrp LOS                    | B    | A    | A    | B    | A    | A    | B    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h          | 160  |      |      | 295  |      |      | 965  |      |      | 1555 |      |      |
| Approach Delay, s/veh        | 15.3 |      |      | 17.4 |      |      | 6.1  |      |      | 9.2  |      |      |
| Approach LOS                 | B    |      |      | B    |      |      | A    |      |      | A    |      |      |
| Timer - Assigned Phs         | 2    |      | 4    |      | 6    |      | 8    |      |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 30.5 |      | 14.8 |      | 30.5 |      | 14.8 |      |      |      |      |      |
| Change Period (Y+Rc), s      | 4.5  |      | 4.5  |      | 4.5  |      | 4.5  |      |      |      |      |      |
| Max Green Setting (Gmax), s  | 33.0 |      | 18.0 |      | 33.0 |      | 18.0 |      |      |      |      |      |
| Max Q Clear Time (g_c+I1),s  | 20.2 |      | 5.6  |      | 17.3 |      | 9.3  |      |      |      |      |      |
| Green Ext Time (p_c), s      | 4.6  |      | 0.6  |      | 8.7  |      | 1.0  |      |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 9.3  |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      | A    |      |      |      |      |      |      |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 3.4    |        |      |        |      |      |
| Movement                 | EBL    | EBR    | NBL  | NBT    | SBT  | SBR  |
| Lane Configurations      | W      |        |      | W      | W    |      |
| Traffic Vol, veh/h       | 76     | 82     | 16   | 197    | 246  | 62   |
| Future Vol, veh/h        | 76     | 82     | 16   | 197    | 246  | 62   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop   | Free | Free   | Free | Free |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | -      | -    | -    |
| Veh in Median Storage, # | -      | -      | -    | 0      | 0    | -    |
| Grade, %                 | 0      | -      | -    | 0      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 15     | 7      | 0    | 5      | 1    | 16   |
| Mvmt Flow                | 83     | 89     | 17   | 214    | 267  | 67   |
| Major/Minor              | Minor2 | Major1 |      | Major2 |      |      |
| Conflicting Flow All     | 549    | 301    | 334  | 0      | -    | 0    |
| Stage 1                  | 301    | -      | -    | -      | -    | -    |
| Stage 2                  | 248    | -      | -    | -      | -    | -    |
| Critical Hdwy            | 6.55   | 6.27   | 4.1  | -      | -    | -    |
| Critical Hdwy Stg 1      | 5.55   | -      | -    | -      | -    | -    |
| Critical Hdwy Stg 2      | 5.55   | -      | -    | -      | -    | -    |
| Follow-up Hdwy           | 3.635  | 3.363  | 2.2  | -      | -    | -    |
| Pot Cap-1 Maneuver       | 475    | 727    | 1237 | -      | -    | -    |
| Stage 1                  | 722    | -      | -    | -      | -    | -    |
| Stage 2                  | 764    | -      | -    | -      | -    | -    |
| Platoon blocked, %       |        |        |      | -      | -    | -    |
| Mov Cap-1 Maneuver       | 467    | 727    | 1237 | -      | -    | -    |
| Mov Cap-2 Maneuver       | 467    | -      | -    | -      | -    | -    |
| Stage 1                  | 710    | -      | -    | -      | -    | -    |
| Stage 2                  | 764    | -      | -    | -      | -    | -    |
| Approach                 | EB     | NB     |      | SB     |      |      |
| HCM Control Delay, s     | 3.9    | 0.6    |      | 0      |      |      |
| HCM LOS                  | B      |        |      |        |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBTLn1 | EBL  | EBLn1  | SBT  | SBR  |
| Capacity (veh/h)         | 1237   | -      | 573  | -      | -    | -    |
| HCM Lane V/C Ratio       | 0.014  | -      | 0.3  | -      | -    | -    |
| HCM Control Delay (s)    | 8      | 0      | 13.9 | -      | -    | -    |
| HCM Lane LOS             | A      | A      | B    | -      | -    | -    |
| HCM 95th %tile Q(veh)    | 0      | -      | 1.3  | -      | -    | -    |

## **PM Phase II**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

08/22/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 7.5  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 0    | 112  | 18   | 35   | 103  | 19   | 19   | 91   | 77   | 46   | 54   | 0    |
| Future Vol, veh/h         | 0    | 112  | 18   | 35   | 103  | 19   | 19   | 91   | 77   | 46   | 54   | 0    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized            | -    | -    | Free | -    | -    | Free | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0    | 7    | 9    | 20   | 9    | 0    | 7    | 0    | 0    | 0    | 9    | 0    |
| Mvmt Flow                 | 0    | 122  | 20   | 38   | 112  | 21   | 21   | 99   | 84   | 50   | 59   | 0    |

| Major/Minor          | Major1 |   | Major2 |      | Minor1 |   | Minor2 |     |     |     |       |     |
|----------------------|--------|---|--------|------|--------|---|--------|-----|-----|-----|-------|-----|
| Conflicting Flow All | 112    | 0 | -      | 122  | 0      | 0 | 340    | 310 | 122 | 402 | 310   | 112 |
| Stage 1              | -      | - | -      | -    | -      | - | 122    | 122 | -   | 188 | 188   | -   |
| Stage 2              | -      | - | -      | -    | -      | - | 218    | 188 | -   | 214 | 122   | -   |
| Critical Hdwy        | 4.1    | - | -      | 4.3  | -      | - | 7.17   | 6.5 | 6.2 | 7.1 | 6.59  | 6.2 |
| Critical Hdwy Stg 1  | -      | - | -      | -    | -      | - | 6.17   | 5.5 | -   | 6.1 | 5.59  | -   |
| Critical Hdwy Stg 2  | -      | - | -      | -    | -      | - | 6.17   | 5.5 | -   | 6.1 | 5.59  | -   |
| Follow-up Hdwy       | 2.2    | - | -      | 2.38 | -      | - | 3.563  | 4   | 3.3 | 3.5 | 4.081 | 3.3 |
| Pot Cap-1 Maneuver   | 1490   | - | 0      | 1361 | -      | 0 | 605    | 608 | 935 | 562 | 593   | 947 |
| Stage 1              | -      | - | 0      | -    | -      | 0 | 870    | 799 | -   | 818 | 731   | -   |
| Stage 2              | -      | - | 0      | -    | -      | 0 | 773    | 748 | -   | 793 | 782   | -   |
| Platoon blocked, %   | -      | - | -      | -    | -      | - | -      | -   | -   | -   | -     | -   |
| Mov Cap-1 Maneuver   | 1490   | - | -      | 1361 | -      | - | 545    | 590 | 935 | 436 | 575   | 947 |
| Mov Cap-2 Maneuver   | -      | - | -      | -    | -      | - | 545    | 590 | -   | 436 | 575   | -   |
| Stage 1              | -      | - | -      | -    | -      | - | 870    | 799 | -   | 818 | 709   | -   |
| Stage 2              | -      | - | -      | -    | -      | - | 688    | 726 | -   | 633 | 782   | -   |

| Approach             | EB |  | WB |  | NB   |  | SB   |  |
|----------------------|----|--|----|--|------|--|------|--|
| HCM Control Delay, s | 0  |  | 2  |  | 12.4 |  | 14.2 |  |
| HCM LOS              |    |  |    |  | B    |  | B    |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL  | EBT | WBL   | WBT | SBLn1 |
|-----------------------|-------|------|-----|-------|-----|-------|
| Capacity (veh/h)      | 689   | 1490 | -   | 1361  | -   | 501   |
| HCM Lane V/C Ratio    | 0.295 | -    | -   | 0.028 | -   | 0.217 |
| HCM Control Delay (s) | 12.4  | 0    | -   | 7.7   | 0   | 14.2  |
| HCM Lane LOS          | B     | A    | -   | A     | A   | B     |
| HCM 95th %tile Q(veh) | 1.2   | 0    | -   | 0.1   | -   | 0.8   |

**HCM 6th TWSC**  
**10: Old State Road 1 & Shoaff Rd**

08/22/2019

| Intersection               |        |                        |        |                            |        |       |        |                                |      |      |      |      |
|----------------------------|--------|------------------------|--------|----------------------------|--------|-------|--------|--------------------------------|------|------|------|------|
| Int Delay, s/veh           | 86.5   |                        |        |                            |        |       |        |                                |      |      |      |      |
| Movement                   | EBL    | EBT                    | EBR    | WBL                        | WBT    | WBR   | NBL    | NBT                            | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations        |        | ↕                      |        |                            | ↕      |       |        | ↕                              |      |      | ↕    |      |
| Traffic Vol, veh/h         | 35     | 71                     | 87     | 28                         | 108    | 35    | 223    | 250                            | 48   | 39   | 208  | 15   |
| Future Vol, veh/h          | 35     | 71                     | 87     | 28                         | 108    | 35    | 223    | 250                            | 48   | 39   | 208  | 15   |
| Conflicting Peds, #/hr     | 0      | 0                      | 0      | 0                          | 0      | 0     | 0      | 0                              | 0    | 0    | 0    | 0    |
| Sign Control               | Stop   | Stop                   | Stop   | Stop                       | Stop   | Stop  | Free   | Free                           | Free | Free | Free | Free |
| RT Channelized             | -      | -                      | None   | -                          | -      | None  | -      | -                              | None | -    | -    | None |
| Storage Length             | -      | -                      | -      | -                          | -      | -     | -      | -                              | -    | -    | -    | -    |
| Veh in Median Storage, #-  | 0      | -                      | -      | -                          | 0      | -     | -      | 0                              | -    | -    | 0    | -    |
| Grade, %                   | -      | 0                      | -      | -                          | 0      | -     | -      | 0                              | -    | -    | 0    | -    |
| Peak Hour Factor           | 92     | 92                     | 92     | 92                         | 92     | 92    | 92     | 92                             | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %          | 50     | 0                      | 0      | 6                          | 0      | 0     | 0      | 3                              | 6    | 0    | 4    | 0    |
| Mvmt Flow                  | 38     | 77                     | 95     | 30                         | 117    | 38    | 242    | 272                            | 52   | 42   | 226  | 16   |
|                            |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| Major/Minor                | Minor2 |                        | Minor1 |                            | Major1 |       | Major2 |                                |      |      |      |      |
| Conflicting Flow All       | 1178   | 1126                   | 234    | 1186                       | 1108   | 298   | 242    | 0                              | 0    | 324  | 0    | 0    |
| Stage 1                    | 318    | 318                    | -      | 782                        | 782    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 860    | 808                    | -      | 404                        | 326    | -     | -      | -                              | -    | -    | -    | -    |
| Critical Hdwy              | 7.6    | 6.5                    | 6.2    | 7.16                       | 6.5    | 6.2   | 4.1    | -                              | -    | 4.1  | -    | -    |
| Critical Hdwy Stg 1        | 6.6    | 5.5                    | -      | 6.16                       | 5.5    | -     | -      | -                              | -    | -    | -    | -    |
| Critical Hdwy Stg 2        | 6.6    | 5.5                    | -      | 6.16                       | 5.5    | -     | -      | -                              | -    | -    | -    | -    |
| Follow-up Hdwy             | 3.95   | 4                      | 3.3    | 3.554                      | 4      | 3.3   | 2.2    | -                              | -    | 2.2  | -    | -    |
| Pot Cap-1 Maneuver         | 135    | 207                    | 810    | 163                        | 212    | 746   | 1336   | -                              | -    | 1247 | -    | -    |
| Stage 1                    | 603    | 657                    | -      | 381                        | 408    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 291    | 397                    | -      | 615                        | 652    | -     | -      | -                              | -    | -    | -    | -    |
| Platoon blocked, %         |        |                        |        |                            |        |       |        | -                              | -    |      | -    | -    |
| Mov Cap-1 Maneuver         | 42     | 155                    | 810    | 72                         | 159    | 746   | 1336   | -                              | -    | 1247 | -    | -    |
| Mov Cap-2 Maneuver         | 42     | 155                    | -      | 72                         | 159    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 1                    | 469    | 631                    | -      | 296                        | 317    | -     | -      | -                              | -    | -    | -    | -    |
| Stage 2                    | 135    | 309                    | -      | 458                        | 627    | -     | -      | -                              | -    | -    | -    | -    |
|                            |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| Approach                   | EB     |                        | WB     |                            | NB     |       | SB     |                                |      |      |      |      |
| HCM Control Delay, s       | 325.7  |                        | 200.2  |                            | 3.5    |       | 1.2    |                                |      |      |      |      |
| HCM LOS                    | F      |                        | F      |                            |        |       |        |                                |      |      |      |      |
|                            |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| Minor Lane/Major Mvmt      | NBL    | NBT                    | NBR    | EBLn                       | WBLn   | SBL   | SBT    | SBR                            |      |      |      |      |
| Capacity (veh/h)           | 1336   | -                      | -      | 138                        | 153    | 1247  | -      | -                              |      |      |      |      |
| HCM Lane V/C Ratio         | 0.181  | -                      | -      | 1.52                       | 1.215  | 0.034 | -      | -                              |      |      |      |      |
| HCM Control Delay (s)      | 8.3    | 0                      |        | \$ 325.7                   | 200.2  | 8     | 0      | -                              |      |      |      |      |
| HCM Lane LOS               | A      | A                      | -      | F                          | F      | A     | A      | -                              |      |      |      |      |
| HCM 95th %tile Q(veh)      | 0.7    | -                      | -      | 14.4                       | 10.7   | 0.1   | -      | -                              |      |      |      |      |
|                            |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| Notes                      |        |                        |        |                            |        |       |        |                                |      |      |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |        | +: Computation Not Defined |        |       |        | *: All major volume in platoon |      |      |      |      |

# HCM 6th Signalized Intersection Summary

## 11: State Road 1 & Shoaff Rd

04/19/2019

|                              |  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          |                                                                                    | ↔    |      |      | ↔    |      | ↔    | ↔    |      |      | ↔    |      |
| Traffic Volume (veh/h)       | 32                                                                                 | 150  | 82   | 59   | 69   | 63   | 123  | 1279 | 147  | 27   | 1165 | 32   |
| Future Volume (veh/h)        | 32                                                                                 | 150  | 82   | 59   | 69   | 63   | 123  | 1279 | 147  | 27   | 1165 | 32   |
| Initial Q (Qb), veh          | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                               |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        |                                                                                    | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                               | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1885 | 1885 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 35                                                                                 | 163  | 89   | 64   | 75   | 68   | 134  | 1390 | 160  | 29   | 1266 | 35   |
| 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 |
| Percent Heavy Veh, %         | 0                                                                                  | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 5    | 5    | 5    |
| Cap, veh/h                   | 84                                                                                 | 209  | 106  | 134  | 130  | 96   | 305  | 2208 | 252  | 75   | 2185 | 60   |
| Arrive On Green              | 0.19                                                                               | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| Sat Flow, veh/h              | 140                                                                                | 1095 | 555  | 352  | 680  | 505  | 430  | 3239 | 370  | 32   | 3205 | 88   |
| Grp Volume(v), veh/h         | 287                                                                                | 0    | 0    | 207  | 0    | 0    | 134  | 764  | 786  | 675  | 0    | 655  |
| Grp Sat Flow(s),veh/h/ln     | 1790                                                                               | 0    | 0    | 1538 | 0    | 0    | 430  | 1791 | 1819 | 1679 | 0    | 1646 |
| Q Serve(g_s), s              | 2.1                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 16.8 | 16.7 | 17.0 | 0.0  | 0.0  | 14.8 |
| Cycle Q Clear(g_c), s        | 10.7                                                                               | 0.0  | 0.0  | 8.7  | 0.0  | 0.0  | 31.6 | 16.7 | 17.0 | 13.1 | 0.0  | 14.8 |
| Prop In Lane                 | 0.12                                                                               |      | 0.31 | 0.31 |      | 0.33 | 1.00 |      | 0.20 | 0.04 |      | 0.05 |
| Lane Grp Cap(c), veh/h       | 398                                                                                | 0    | 0    | 360  | 0    | 0    | 305  | 1221 | 1240 | 1198 | 0    | 1122 |
| V/C Ratio(X)                 | 0.72                                                                               | 0.00 | 0.00 | 0.58 | 0.00 | 0.00 | 0.44 | 0.63 | 0.63 | 0.56 | 0.00 | 0.58 |
| Avail Cap(c_a), veh/h        | 509                                                                                | 0    | 0    | 458  | 0    | 0    | 305  | 1221 | 1240 | 1198 | 0    | 1122 |
| HCM Platoon Ratio            | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00                                                                               | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 27.4                                                                               | 0.0  | 0.0  | 26.4 | 0.0  | 0.0  | 14.3 | 6.2  | 6.3  | 5.7  | 0.0  | 5.9  |
| Incr Delay (d2), s/veh       | 3.6                                                                                | 0.0  | 0.0  | 1.5  | 0.0  | 0.0  | 4.5  | 2.4  | 2.5  | 1.9  | 0.0  | 2.2  |
| Initial Q Delay(d3),s/veh    | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 4.6                                                                                | 0.0  | 0.0  | 3.1  | 0.0  | 0.0  | 1.8  | 5.3  | 5.5  | 4.2  | 0.0  | 4.3  |
| Unsig. Movement Delay, s/veh |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 31.0                                                                               | 0.0  | 0.0  | 27.8 | 0.0  | 0.0  | 18.8 | 8.6  | 8.8  | 7.6  | 0.0  | 8.1  |
| LnGrp LOS                    | C                                                                                  | A    | A    | C    | A    | A    | B    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h          |                                                                                    | 287  |      |      | 207  |      |      | 1684 |      |      | 1330 |      |
| Approach Delay, s/veh        |                                                                                    | 31.0 |      |      | 27.8 |      |      | 9.5  |      |      | 7.9  |      |
| Approach LOS                 |                                                                                    | C    |      |      | C    |      |      | A    |      |      | A    |      |
| Timer - Assigned Phs         |                                                                                    | 2    |      | 4    |      | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |                                                                                    | 52.5 |      | 17.9 |      | 52.5 |      | 17.9 |      |      |      |      |
| Change Period (Y+Rc), s      |                                                                                    | 4.5  |      | 4.5  |      | 4.5  |      | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s  |                                                                                    | 48.0 |      | 18.0 |      | 48.0 |      | 18.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |                                                                                    | 33.6 |      | 12.7 |      | 16.8 |      | 10.7 |      |      |      |      |
| Green Ext Time (p_c), s      |                                                                                    | 10.4 |      | 0.7  |      | 12.6 |      | 0.6  |      |      |      |      |
| <b>Intersection Summary</b>  |                                                                                    |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |                                                                                    |      |      | 11.7 |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |                                                                                    |      |      | B    |      |      |      |      |      |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |                                                                                   |        |                                                                                   |        |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4.2                                                                               |        |                                                                                   |        |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL                                                                               | NBT    | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |  |        |  |      |
| Traffic Vol, veh/h       | 87                                                                                | 57     | 88                                                                                | 338    | 251                                                                               | 84   |
| Future Vol, veh/h        | 87                                                                                | 57     | 88                                                                                | 338    | 251                                                                               | 84   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0                                                                                 | 0      | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop   | Free                                                                              | Free   | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None   | -                                                                                 | None   | -                                                                                 | None |
| Storage Length           | -                                                                                 | -      | -                                                                                 | -      | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92     | 92                                                                                | 92     | 92                                                                                | 92   |
| Heavy Vehicles, %        | 4                                                                                 | 0      | 0                                                                                 | 0      | 1                                                                                 | 8    |
| Mvmt Flow                | 95                                                                                | 62     | 96                                                                                | 367    | 273                                                                               | 91   |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Major/Minor              | Minor2                                                                            | Major1 |                                                                                   | Major2 |                                                                                   |      |
| Conflicting Flow All     | 878                                                                               | 319    | 364                                                                               | 0      | -                                                                                 | 0    |
| Stage 1                  | 319                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 559                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy            | 6.44                                                                              | 6.2    | 4.1                                                                               | -      | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.44                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.44                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Follow-up Hdwy           | 3.536                                                                             | 3.3    | 2.2                                                                               | -      | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 316                                                                               | 726    | 1206                                                                              | -      | -                                                                                 | -    |
| Stage 1                  | 732                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 568                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |                                                                                   | -      | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 284                                                                               | 726    | 1206                                                                              | -      | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 284                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 1                  | 659                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 568                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Approach                 | EB                                                                                | NB     |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s     | 21.4                                                                              | 1.7    |                                                                                   | 0      |                                                                                   |      |
| HCM LOS                  | C                                                                                 |        |                                                                                   |        |                                                                                   |      |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBTLn1 | SBT                                                                               | SBR    |                                                                                   |      |
| Capacity (veh/h)         | 1206                                                                              | -      | 374                                                                               | -      | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.079                                                                             | -      | 0.419                                                                             | -      | -                                                                                 |      |
| HCM Control Delay (s)    | 8.2                                                                               | 0      | 21.4                                                                              | -      | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | A      | C                                                                                 | -      | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0.3                                                                               | -      | 2                                                                                 | -      | -                                                                                 |      |

## **PM Phase II Modified**



**HCM 6th TWSC**  
**9: Hand Rd & Shoaff Rd**

08/22/2019

| Intersection              |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh          | 7.5  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h        | 0    | 112  | 18   | 35   | 103  | 19   | 19   | 91   | 77   | 46   | 54   | 0    |
| Future Vol, veh/h         | 0    | 112  | 18   | 35   | 103  | 19   | 19   | 91   | 77   | 46   | 54   | 0    |
| Conflicting Peds, #/hr    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control              | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized            | -    | -    | Free | -    | -    | Free | -    | -    | None | -    | -    | None |
| Storage Length            | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, #- | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Grade, %                  | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor          | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %         | 0    | 7    | 9    | 20   | 9    | 0    | 7    | 0    | 0    | 0    | 9    | 0    |
| Mvmt Flow                 | 0    | 122  | 20   | 38   | 112  | 21   | 21   | 99   | 84   | 50   | 59   | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |       |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-------|-----|
| Conflicting Flow All | 112    | 0 | - | 122    | 0 | 0 | 340    | 310 | 122 | 402    | 310   | 112 |
| Stage 1              | -      | - | - | -      | - | - | 122    | 122 | -   | 188    | 188   | -   |
| Stage 2              | -      | - | - | -      | - | - | 218    | 188 | -   | 214    | 122   | -   |
| Critical Hdwy        | 4.1    | - | - | 4.3    | - | - | 7.17   | 6.5 | 6.2 | 7.1    | 6.59  | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.17   | 5.5 | -   | 6.1    | 5.59  | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.17   | 5.5 | -   | 6.1    | 5.59  | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.38   | - | - | 3.563  | 4   | 3.3 | 3.5    | 4.081 | 3.3 |
| Pot Cap-1 Maneuver   | 1490   | - | 0 | 1361   | - | 0 | 605    | 608 | 935 | 562    | 593   | 947 |
| Stage 1              | -      | - | 0 | -      | - | 0 | 870    | 799 | -   | 818    | 731   | -   |
| Stage 2              | -      | - | 0 | -      | - | 0 | 773    | 748 | -   | 793    | 782   | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -   | -      | -     | -   |
| Mov Cap-1 Maneuver   | 1490   | - | - | 1361   | - | - | 545    | 590 | 935 | 436    | 575   | 947 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 545    | 590 | -   | 436    | 575   | -   |
| Stage 1              | -      | - | - | -      | - | - | 870    | 799 | -   | 818    | 709   | -   |
| Stage 2              | -      | - | - | -      | - | - | 688    | 726 | -   | 633    | 782   | -   |

| Approach             | EB |   |   | WB |   |   | NB   |   |   | SB   |   |   |
|----------------------|----|---|---|----|---|---|------|---|---|------|---|---|
| HCM Control Delay, s | 0  | - | - | 2  | - | - | 12.4 | - | - | 14.2 | - | - |
| HCM LOS              | -  | - | - | -  | - | - | B    | - | - | B    | - | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL  | EBT | WBL   | WBT | SBLn1 |
|-----------------------|-------|------|-----|-------|-----|-------|
| Capacity (veh/h)      | 689   | 1490 | -   | 1361  | -   | 501   |
| HCM Lane V/C Ratio    | 0.295 | -    | -   | 0.028 | -   | 0.217 |
| HCM Control Delay (s) | 12.4  | 0    | -   | 7.7   | 0   | 14.2  |
| HCM Lane LOS          | B     | A    | -   | A     | A   | B     |
| HCM 95th %tile Q(veh) | 1.2   | 0    | -   | 0.1   | -   | 0.8   |

# HCM 6th Signalized Intersection Summary

## 10: Old State Road 1 & Shoaff Rd

08/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 35                                                                                | 71                                                                                | 87                                                                                | 28                                                                                | 108                                                                               | 35                                                                                | 223                                                                                | 250                                                                                 | 48                                                                                  | 39                                                                                  | 208                                                                                 | 15                                                                                  |
| Future Volume (veh/h)        | 35                                                                                | 71                                                                                | 87                                                                                | 28                                                                                | 108                                                                               | 35                                                                                | 223                                                                                | 250                                                                                 | 48                                                                                  | 39                                                                                  | 208                                                                                 | 15                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1856                                                                               | 1856                                                                                | 1856                                                                                | 1841                                                                                | 1841                                                                                | 1841                                                                                |
| Adj Flow Rate, veh/h         | 38                                                                                | 77                                                                                | 95                                                                                | 30                                                                                | 117                                                                               | 38                                                                                | 242                                                                                | 272                                                                                 | 52                                                                                  | 42                                                                                  | 226                                                                                 | 16                                                                                  |
| 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                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Cap, veh/h                   | 185                                                                               | 142                                                                               | 151                                                                               | 178                                                                               | 242                                                                               | 72                                                                                | 445                                                                                | 412                                                                                 | 69                                                                                  | 200                                                                                 | 760                                                                                 | 49                                                                                  |
| Arrive On Green              | 0.20                                                                              | 0.20                                                                              | 0.20                                                                              | 0.20                                                                              | 0.20                                                                              | 0.20                                                                              | 0.50                                                                               | 0.50                                                                                | 0.50                                                                                | 0.50                                                                                | 0.50                                                                                | 0.50                                                                                |
| Sat Flow, veh/h              | 206                                                                               | 723                                                                               | 768                                                                               | 183                                                                               | 1231                                                                              | 365                                                                               | 543                                                                                | 826                                                                                 | 139                                                                                 | 121                                                                                 | 1524                                                                                | 98                                                                                  |
| Grp Volume(v), veh/h         | 210                                                                               | 0                                                                                 | 0                                                                                 | 185                                                                               | 0                                                                                 | 0                                                                                 | 566                                                                                | 0                                                                                   | 0                                                                                   | 284                                                                                 | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1698                                                                              | 0                                                                                 | 0                                                                                 | 1778                                                                              | 0                                                                                 | 0                                                                                 | 1508                                                                               | 0                                                                                   | 0                                                                                   | 1743                                                                                | 0                                                                                   | 0                                                                                   |
| Q Serve(g_s), s              | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 5.7                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 3.2                                                                               | 0.0                                                                               | 0.0                                                                               | 2.6                                                                               | 0.0                                                                               | 0.0                                                                               | 8.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.7                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 0.18                                                                              |                                                                                   | 0.45                                                                              | 0.16                                                                              |                                                                                   | 0.21                                                                              | 0.43                                                                               |                                                                                     | 0.09                                                                                | 0.15                                                                                |                                                                                     | 0.06                                                                                |
| Lane Grp Cap(c), veh/h       | 478                                                                               | 0                                                                                 | 0                                                                                 | 492                                                                               | 0                                                                                 | 0                                                                                 | 926                                                                                | 0                                                                                   | 0                                                                                   | 1009                                                                                | 0                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.44                                                                              | 0.00                                                                              | 0.00                                                                              | 0.38                                                                              | 0.00                                                                              | 0.00                                                                              | 0.61                                                                               | 0.00                                                                                | 0.00                                                                                | 0.28                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 1151                                                                              | 0                                                                                 | 0                                                                                 | 1194                                                                              | 0                                                                                 | 0                                                                                 | 1810                                                                               | 0                                                                                   | 0                                                                                   | 2016                                                                                | 0                                                                                   | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 10.8                                                                              | 0.0                                                                               | 0.0                                                                               | 10.6                                                                              | 0.0                                                                               | 0.0                                                                               | 5.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 4.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.8                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 1.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.5                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 11.4                                                                              | 0.0                                                                               | 0.0                                                                               | 11.1                                                                              | 0.0                                                                               | 0.0                                                                               | 6.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 4.6                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | B                                                                                 | A                                                                                 | A                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 | A                                                                                  | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 210                                                                               |                                                                                   |                                                                                   | 185                                                                               |                                                                                   |                                                                                    | 566                                                                                 |                                                                                     |                                                                                     | 284                                                                                 |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 11.4                                                                              |                                                                                   |                                                                                   | 11.1                                                                              |                                                                                   |                                                                                    | 6.3                                                                                 |                                                                                     |                                                                                     | 4.6                                                                                 |                                                                                     |
| Approach LOS                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Timer - Assigned Phs         |                                                                                   | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     |                                                                                   | 19.2                                                                              |                                                                                   | 10.3                                                                              |                                                                                   | 19.2                                                                              |                                                                                    | 10.3                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                               |                                                                                    | 4.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  |                                                                                   | 32.9                                                                              |                                                                                   | 18.1                                                                              |                                                                                   | 32.9                                                                              |                                                                                    | 18.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s |                                                                                   | 10.4                                                                              |                                                                                   | 5.2                                                                               |                                                                                   | 4.7                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      |                                                                                   | 4.3                                                                               |                                                                                   | 0.8                                                                               |                                                                                   | 1.8                                                                               |                                                                                    | 0.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM 6th Signalized Intersection Summary

## 11: State Road 1 & Shoaff Rd

04/19/2019



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      |      | ↕    |      |
| Traffic Volume (veh/h) 32    | 150  | 82   | 59   | 69   | 63   | 123  | 1279 | 147  | 27   | 1165 | 32   |      |
| Future Volume (veh/h) 32     | 150  | 82   | 59   | 69   | 63   | 123  | 1279 | 147  | 27   | 1165 | 32   |      |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        | No   |      |      | No   |      |      | No   |      |      | No   |      |      |
| Adj Sat Flow, veh/h/ln       | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1885 | 1885 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 35   | 163  | 89   | 64   | 75   | 68   | 134  | 1390 | 160  | 29   | 1266 | 35   |
| 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 |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 5    | 5    | 5    |
| Cap, veh/h                   | 84   | 209  | 106  | 134  | 130  | 96   | 305  | 2208 | 252  | 75   | 2185 | 60   |
| Arrive On Green              | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 |
| Sat Flow, veh/h              | 140  | 1095 | 555  | 352  | 680  | 505  | 430  | 3239 | 370  | 32   | 3205 | 88   |
| Grp Volume(v), veh/h         | 287  | 0    | 0    | 207  | 0    | 0    | 134  | 764  | 786  | 675  | 0    | 655  |
| Grp Sat Flow(s), veh/h       | 1790 | 0    | 0    | 1538 | 0    | 0    | 430  | 1791 | 1819 | 1679 | 0    | 1646 |
| Q Serve(g_s), s              | 2.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 16.8 | 16.7 | 17.0 | 0.0  | 0.0  | 14.8 |
| Cycle Q Clear(g_c), s        | 10.7 | 0.0  | 0.0  | 8.7  | 0.0  | 0.0  | 31.6 | 16.7 | 17.0 | 13.1 | 0.0  | 14.8 |
| Prop In Lane                 | 0.12 |      | 0.31 | 0.31 |      | 0.33 | 1.00 |      | 0.20 | 0.04 |      | 0.05 |
| Lane Grp Cap(c), veh/h       | 398  | 0    | 0    | 360  | 0    | 0    | 305  | 1221 | 1240 | 1198 | 0    | 1122 |
| V/C Ratio(X)                 | 0.72 | 0.00 | 0.00 | 0.58 | 0.00 | 0.00 | 0.44 | 0.63 | 0.63 | 0.56 | 0.00 | 0.58 |
| Avail Cap(c_a), veh/h        | 509  | 0    | 0    | 458  | 0    | 0    | 305  | 1221 | 1240 | 1198 | 0    | 1122 |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 25.4 | 0.0  | 0.0  | 26.4 | 0.0  | 0.0  | 14.3 | 6.2  | 6.3  | 5.7  | 0.0  | 5.9  |
| Incr Delay (d2), s/veh       | 3.6  | 0.0  | 0.0  | 1.5  | 0.0  | 0.0  | 4.5  | 2.4  | 2.5  | 1.9  | 0.0  | 2.2  |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 0.0  | 0.0  | 0.0  | 3.1  | 0.0  | 0.0  | 1.8  | 5.3  | 5.5  | 4.2  | 0.0  | 4.3  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 31.0 | 0.0  | 0.0  | 27.8 | 0.0  | 0.0  | 18.8 | 8.6  | 8.8  | 7.6  | 0.0  | 8.1  |
| LnGrp LOS                    | C    | A    | A    | C    | A    | A    | B    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h          | 287  |      |      | 207  |      |      | 1684 |      |      | 1330 |      |      |
| Approach Delay, s/veh        | 31.0 |      |      | 27.8 |      |      | 9.5  |      |      | 7.9  |      |      |
| Approach LOS                 | C    |      |      | C    |      |      | A    |      |      | A    |      |      |
| Timer - Assigned Phs         | 2    |      | 4    |      | 6    |      | 8    |      |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 52.5 |      | 17.9 |      | 52.5 |      | 17.9 |      |      |      |      |      |
| Change Period (Y+Rc), s      | 4.5  |      | 4.5  |      | 4.5  |      | 4.5  |      |      |      |      |      |
| Max Green Setting (Gmax), s  | 48.0 |      | 18.0 |      | 48.0 |      | 18.0 |      |      |      |      |      |
| Max Q Clear Time (g_c+I1),s  | 33.6 |      | 12.7 |      | 16.8 |      | 10.7 |      |      |      |      |      |
| Green Ext Time (p_c), s      | 10.4 |      | 0.7  |      | 12.6 |      | 0.6  |      |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 11.7 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      | B    |      |      |      |      |      |      |      |      |      |

**HCM 6th TWSC**  
**12: Coldwater Rd & Shoaff Rd**

04/19/2019

| Intersection             |                                                                                   |        |                                                                                   |        |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4.2                                                                               |        |                                                                                   |        |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL                                                                               | NBT    | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |  |        |  |      |
| Traffic Vol, veh/h       | 87                                                                                | 57     | 88                                                                                | 338    | 251                                                                               | 84   |
| Future Vol, veh/h        | 87                                                                                | 57     | 88                                                                                | 338    | 251                                                                               | 84   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0                                                                                 | 0      | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop   | Free                                                                              | Free   | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None   | -                                                                                 | None   | -                                                                                 | None |
| Storage Length           | -                                                                                 | -      | -                                                                                 | -      | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -      | -                                                                                 | 0      | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92     | 92                                                                                | 92     | 92                                                                                | 92   |
| Heavy Vehicles, %        | 4                                                                                 | 0      | 0                                                                                 | 0      | 1                                                                                 | 8    |
| Mvmt Flow                | 95                                                                                | 62     | 96                                                                                | 367    | 273                                                                               | 91   |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Major/Minor              | Minor2                                                                            | Major1 |                                                                                   | Major2 |                                                                                   |      |
| Conflicting Flow All     | 878                                                                               | 319    | 364                                                                               | 0      | -                                                                                 | 0    |
| Stage 1                  | 319                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 559                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy            | 6.44                                                                              | 6.2    | 4.1                                                                               | -      | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.44                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.44                                                                              | -      | -                                                                                 | -      | -                                                                                 | -    |
| Follow-up Hdwy           | 3.536                                                                             | 3.3    | 2.2                                                                               | -      | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 316                                                                               | 726    | 1206                                                                              | -      | -                                                                                 | -    |
| Stage 1                  | 732                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 568                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |                                                                                   | -      | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 284                                                                               | 726    | 1206                                                                              | -      | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 284                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 1                  | 659                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
| Stage 2                  | 568                                                                               | -      | -                                                                                 | -      | -                                                                                 | -    |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Approach                 | EB                                                                                | NB     |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s     | 21.4                                                                              | 1.7    |                                                                                   | 0      |                                                                                   |      |
| HCM LOS                  | C                                                                                 |        |                                                                                   |        |                                                                                   |      |
|                          |                                                                                   |        |                                                                                   |        |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBTLn1 | SBT                                                                               | SBR    |                                                                                   |      |
| Capacity (veh/h)         | 1206                                                                              | -      | 374                                                                               | -      | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.079                                                                             | -      | 0.419                                                                             | -      | -                                                                                 |      |
| HCM Control Delay (s)    | 8.2                                                                               | 0      | 21.4                                                                              | -      | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | A      | C                                                                                 | -      | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0.3                                                                               | -      | 2                                                                                 | -      | -                                                                                 |      |