

**REAL ENGINEERING INC.**

# **TRAFFIC IMPACT STUDY**

Proposed Medical Office  
8 Collins Lane  
South Windsor, CT.

PREPARED FOR:

4ELEMENTS DIRECT PRIMARY CARE AND WELLNESS SPACE

March 4, 2024

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## Introduction

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This Traffic Impact Study (“TIS”) was prepared to examine the potential traffic and parking impacts associated with the proposed medical office at 8 Collins Lane, South Windsor, CT. The proposed medical office will be housed in the existing structure, which is approximately 3,650 sf in size.

The proposed site is located at the east side of Sullivan Avenue (US 194), between the signalized intersections of Sullivan Avenue with Pierce Road and Sand Hill Road.

The intersections Sullivan Avenue in the immediate vicinity of the Site are likely to be impacted by the additional traffic generated by the proposed development and are hence studied. Figure 1 below is a Google Maps aerial depicting the subject property, surrounding area and the study intersections. They include:

- Sullivan Avenue and Pierce Road
- Sullivan Avenue and Sand Hill Road
- Sullivan Avenue and Site Driveway



**Figure 1.** Aerial of Subject Property, Surrounding Area and the Study Intersections

## Study Approach and Methodology

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This Traffic Study was prepared by using industry-wide traffic engineering standards to determine any potential traffic impacts from the proposed development. Our analysis constituted the following:

1. Reviewing the project site plan and related documents to incorporate it into the project scope and layout.
2. Reviewing the adjacent roadway system to determine key intersection(s) that might be impacted.
3. Obtaining turning movement counts at the key intersection(s) during the anticipated peak hours of the site in conjunction with the roadway system. The turning movement counts were reviewed for accuracy and processed to obtain traffic volumes for the 2024 existing conditions.
4. Projecting the existing conditions data into the 2025 build year by applying an annual growth rate to use as the basis for the future no-build conditions.
5. Using the industry standard ITE Trip Generation Manual to determine the anticipated site-generated traffic volumes.
6. Adding and distributing the site-generated traffic volumes to the no-build 2025 traffic volumes to use as the future build conditions.
7. Performing a highway capacity analysis for the study intersection for the 2024 existing conditions, 2025 no-build conditions and 2025 build conditions.
8. Evaluating the results of the highway capacity analysis to assess any traffic impacts.

The highway capacity analysis was performed utilizing industry standard software Synchro 11. The software faithfully duplicates the methods and computations found in the 7<sup>th</sup> Edition of the Highway Capacity Manual published by the Transportation Research Board. The signalized module was used for the study intersections. The level-of-service criteria is presented in Table 1 below.

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

| Level of Service | Average Control Delay (seconds/vehicle) | General Description                                                                                                 |
|------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>A</b>         | ≤10                                     | Free flow                                                                                                           |
| <b>B</b>         | >10 – 20                                | Stable flow (slight delays)                                                                                         |
| <b>C</b>         | >20 – 35                                | Stable flow (acceptable delays)                                                                                     |
| <b>D</b>         | >35 – 55                                | Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding) |
| <b>E</b>         | >55 – 80                                | Unstable flow (intolerable delay)                                                                                   |
| <b>F</b>         | >80                                     | Forced flow (congested and queues fail to clear)                                                                    |

## Highway Capacity Analysis: Existing Conditions

### Existing Conditions

Sullivan Avenue (CT Route 194) is a two-way roadway with two through lanes in each direction serving northbound and southbound traffic in the area, with turning lanes at signalized intersections in the vicinity of the project. The posted speed limit is 40 mph and this roadway is under CTDOT jurisdiction.

The study intersections are signalized T-intersections with turning lanes at the Sullivan Avenue approaches and also at the westbound Sand Hill Road and eastbound Pierce Road approach.

Traffic signal phasing and timings for the Pierce Road and Sand Hill Road intersections with Sullivan Avenue were observed in the field.

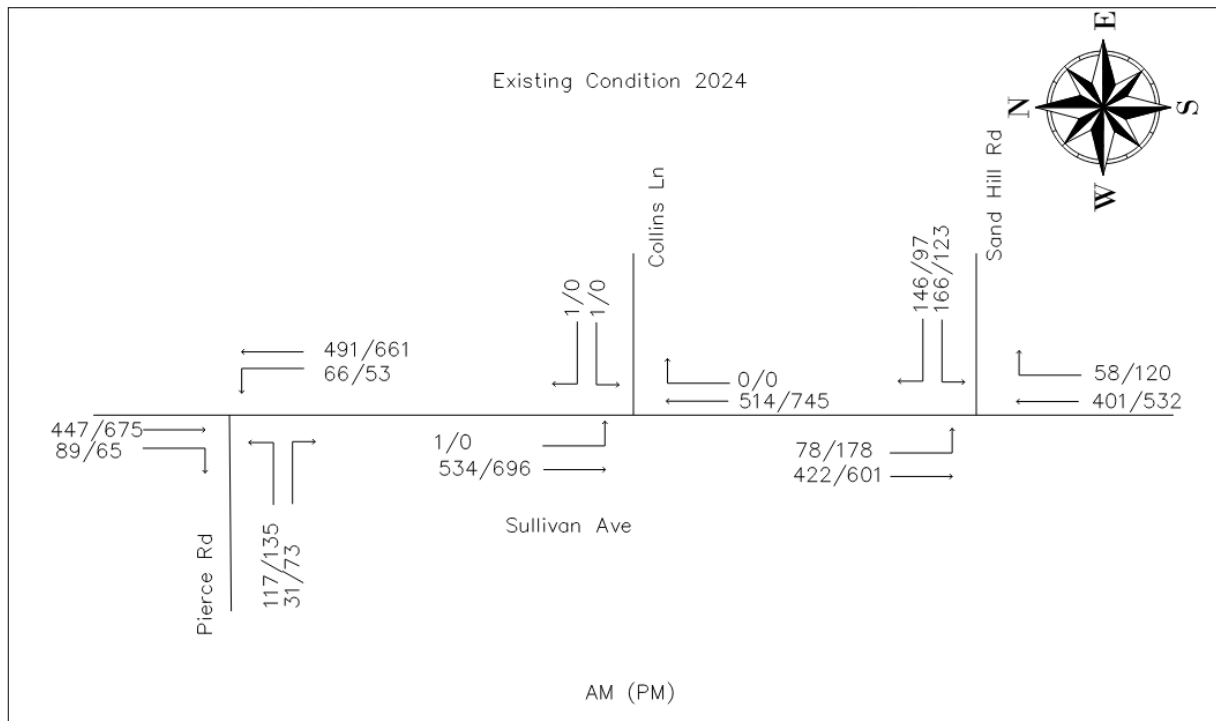
The land uses in the study area along Sullivan Avenue are a mix of residential and commercial.

### Existing Conditions Traffic Volumes

Turning movement counts were collected at the study intersections on Thursday, January 18th, 2024, between 7 AM and 9 AM and between 4 PM to 6 PM. The turning movement count data is included in Appendix A.

At each intersection, the turning movement count data revealed that the peak hours generally occurred on weekdays approximately between 7:15 AM and 8:15 AM in the morning and 4:15 PM and 5:15 PM in the evening.

Figure 3 show the existing traffic volumes at the intersections in the study area for both AM and PM peak hours.



**Figure 2. Existing Conditions Traffic Volumes**

### Existing Conditions Capacity Analysis

The existing conditions capacity analysis results are illustrated in Table 2 below. The capacity analysis reports are included in the Appendix. The results reveal that the intersections are currently operating at overall levels of service of D or better during the AM and PM peak hours.

**Table 2.** Existing Conditions LOS Summary

| Intersection                  | Approach     | AM            |     | PM            |     |
|-------------------------------|--------------|---------------|-----|---------------|-----|
|                               |              | Delay (s/veh) | LOS | Delay (s/veh) | LOS |
| Sullivan Ave & Sand Hill Road | WB           | 31.9          | C   | 30.2          | C   |
|                               | SB           | 5.5           | A   | 8.1           | A   |
|                               | NB           | 5.7           | A   | 5.5           | A   |
|                               | Intersection | 12.8          | B   | 10.4          | B   |
| Sullivan Ave & Pierce Rd      | EB           | 41.1          | D   | 39.6          | D   |
|                               | SB           | 8.3           | A   | 14            | B   |
|                               | NB           | 4.3           | A   | 8             | A   |
|                               | Intersection | 12.5          | B   | 16.3          | B   |
| Sullivan Ave & Collins Lane   | WB           | 16.9          | C   | 0             | A   |
|                               | NB           | 0             | A   | 0             | A   |
|                               | SB           | 0             | A   | 0             | A   |
|                               | Intersection | 5.63          | B   | 0             | A   |

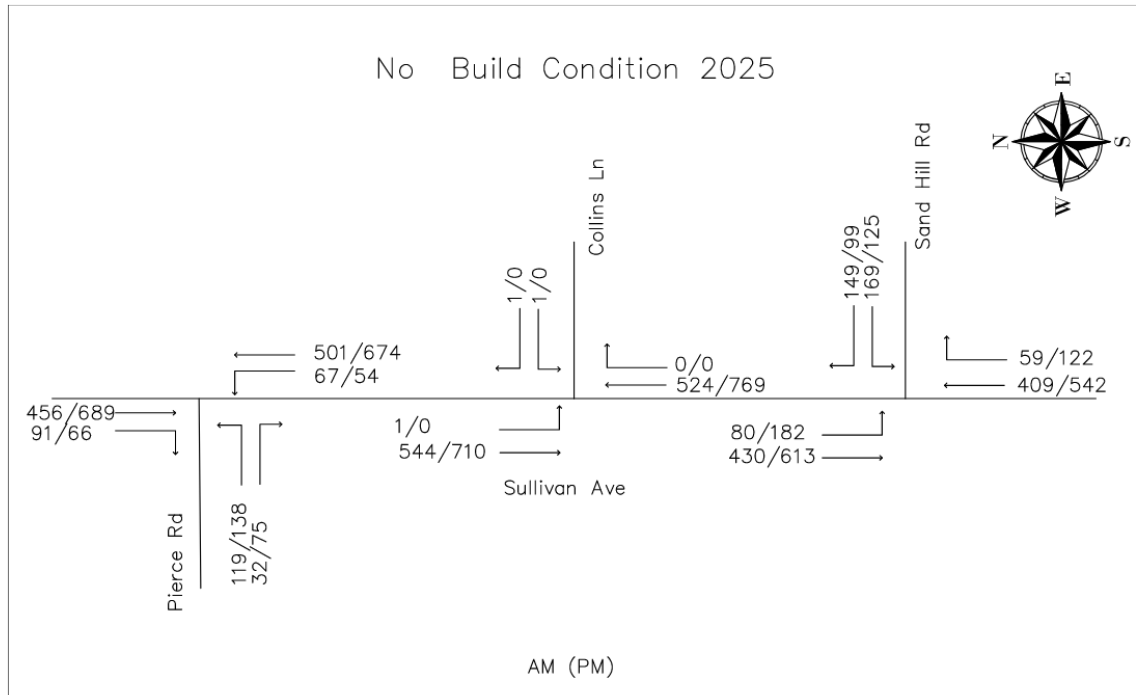
## Highway Capacity Analysis: No-Build Conditions

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### No-Build Conditions

To examine the future conditions without the proposed development, the existing condition traffic volumes must be projected for the year 2025 in which the full build-out of the project is anticipated to be completed. Based on information available in public domain such as previous traffic studies, the background traffic growth is one(1) percent per year. Also, there was no available information on any planned development in the vicinity of the proposed development. To present a conservative analysis, the existing traffic volumes were grown by approximately two (2) percent to establish the No-Build traffic volumes.

Figure 4 below shows the 2025 No-Build conditions traffic volumes.



**Figure 3.** No-Build Conditions Traffic Volumes

### No-Build Conditions Capacity Analysis

The No-Build conditions capacity analysis results are illustrated in the table below. The capacity analysis reports are included in the Appendix. The results reveal that the normal background traffic growth will not impact the existing levels of service at all approaches of the intersections.

**Table 3.** No-Build Conditions LOS Summary

| Intersection                  | Approach     | AM            |     | PM            |     |
|-------------------------------|--------------|---------------|-----|---------------|-----|
|                               |              | Delay (s/veh) | LOS | Delay (s/veh) | LOS |
| Sullivan Ave & Sand Hill Road | WB           | 32.1          | C   | 30.2          | C   |
|                               | SB           | 5.6           | A   | 8.1           | A   |
|                               | NB           | 5.7           | A   | 5.5           | A   |
|                               | Intersection | 12.9          | B   | 10.4          | B   |
| Sullivan Ave & Pierce Rd      | EB           | 41.3          | D   | 39.6          | D   |
|                               | SB           | 8.1           | A   | 14            | B   |
|                               | NB           | 6.3           | A   | 8             | A   |
|                               | Intersection | 13.3          | B   | 16.3          | B   |
| Sullivan Ave & Collins Lane   | WB           | 14.9          | C   | 0             | A   |
|                               | NB           | 0             | A   | 0             | A   |
|                               | SB           | 0             | A   | 0             | A   |
|                               | Intersection | 4.97          | A   | 0             | A   |

## Highway Capacity Analysis: Build Conditions

### Trip Generation

The project proposes to occupy 3,650 sf of existing building space and use it as medical office.

In order to estimate the trips generated by the proposed project, reference was made to the *Trip Generation Manual, 11<sup>th</sup> Edition*, published by the Institute of Transportation Engineers (ITE). Table 4 illustrates the calculation for generated trips for the proposed project.

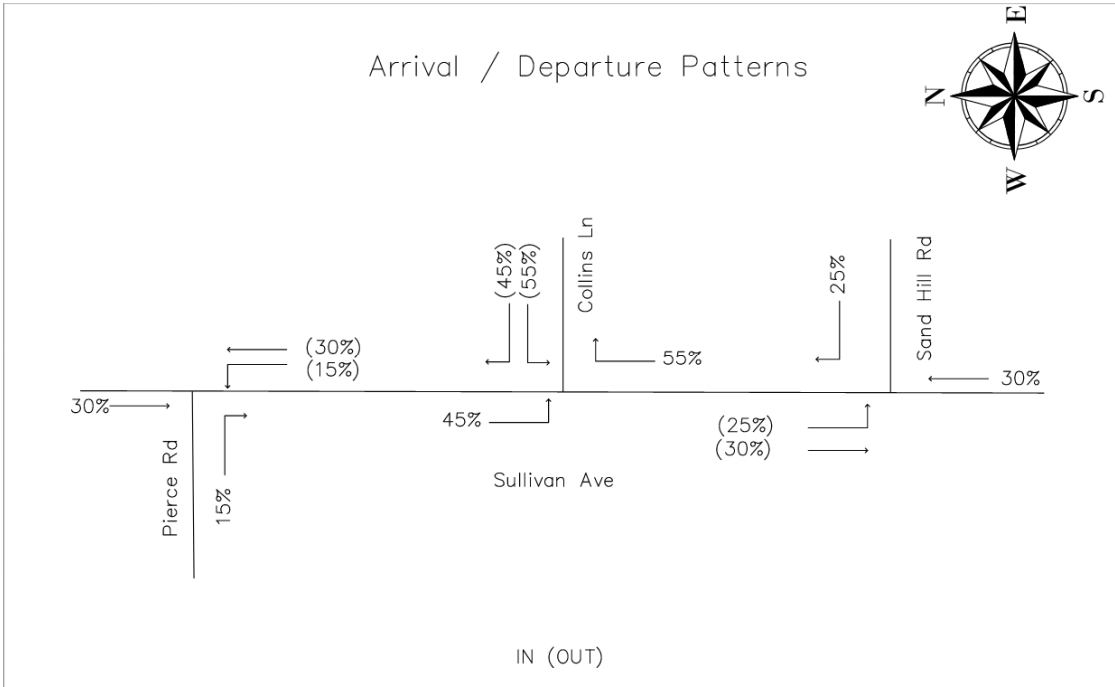
**Table 4.** Trip Generation

| LU  | Project                        | Size     | Daily Trips | AM Peak |     |       | PM Peak |     |       |
|-----|--------------------------------|----------|-------------|---------|-----|-------|---------|-----|-------|
|     |                                |          |             | In      | Out | Total | In      | Out | Total |
| 720 | Medical-Dental Office Building | 3,650 sf | 131         | 9       | 6   | 15    | 7       | 10  | 17    |

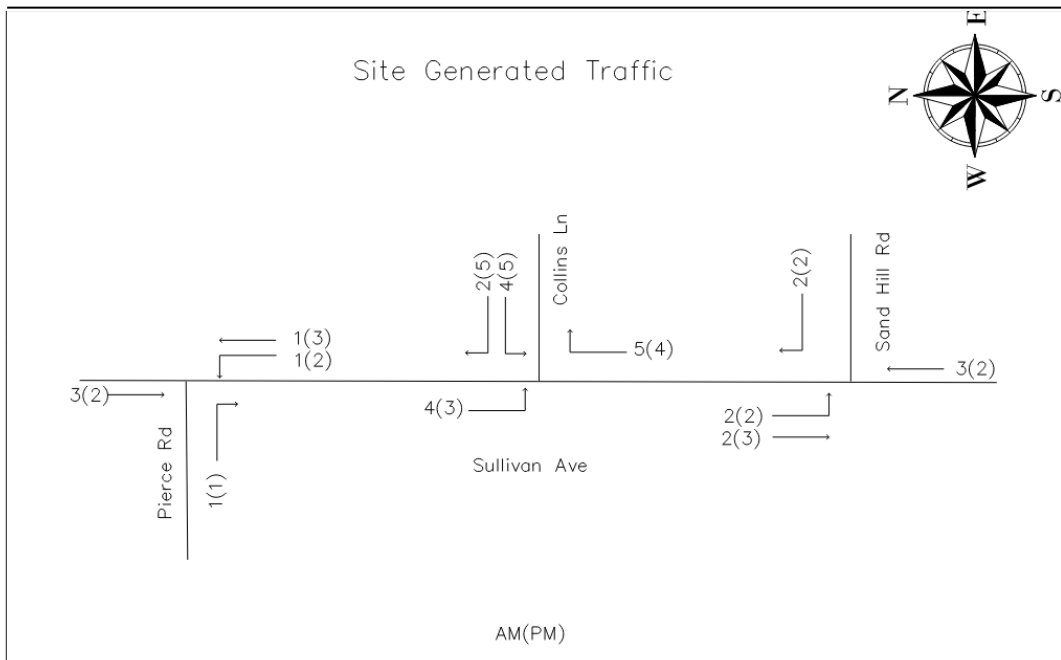
The total number of new trips, forecast to be generated by the proposed development is 15 in the AM peak hour (9 entering and 6 exiting). The total number of new trips, forecast to be generated by the proposed development is 17 in the PM peak hour (7 entering and 10 exiting).

### Trip Distribution

The site generated traffic was distributed to the study intersections based on prevailing traffic patterns in the area. Figure 5 below shows the new traffic generated by the proposed site distributed at the study intersections.



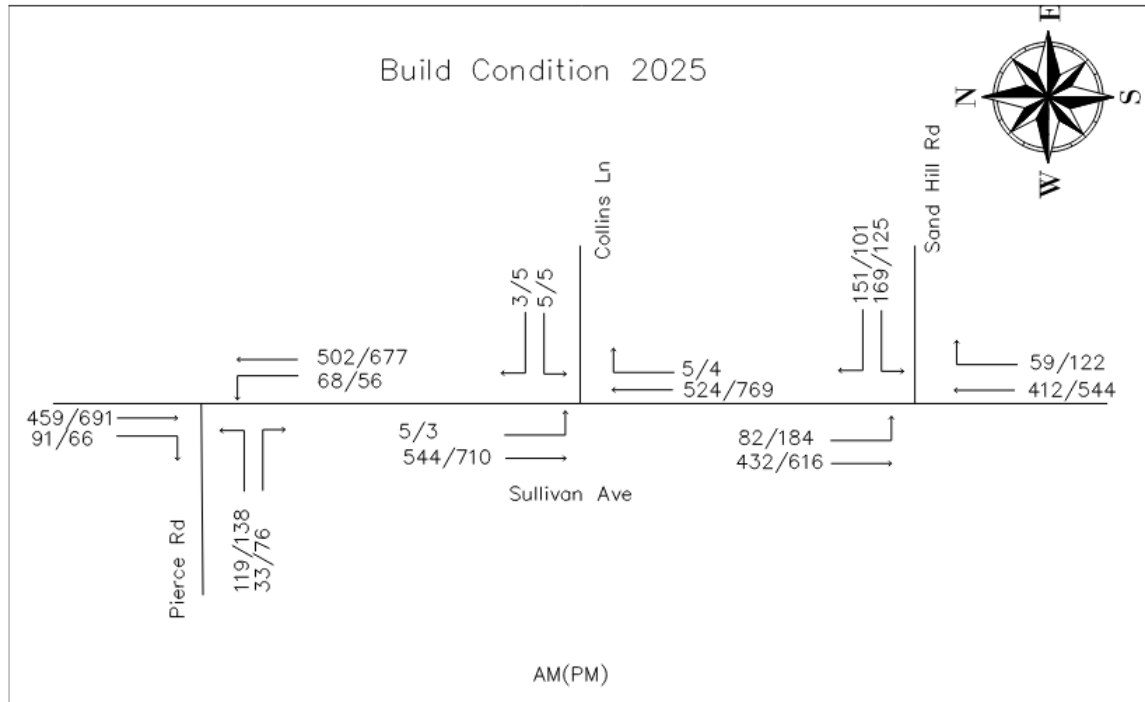
**Figure 4. Trip Distribution**



**Figure 5. Site Generated Traffic**

## Build Conditions Traffic Volumes

The traffic volumes generated by the proposed site were added to the 2025 No-Build traffic volumes to represent the anticipated traffic volumes that will occur in the 2025 Build-out year. Figures 7 below show the Build conditions traffic volumes.



**Figure 6.** Build Conditions Traffic Volumes

## Build Conditions Capacity Analysis

The 2025 Build conditions capacity analysis results are shown in Table 5 below. The capacity analysis reports are included in the Appendix.

**Table 5.** Build Conditions LOS Summary

| Intersection                  | Approach     | AM            |     | PM            |     |
|-------------------------------|--------------|---------------|-----|---------------|-----|
|                               |              | Delay (s/veh) | LOS | Delay (s/veh) | LOS |
| Sullivan Ave & Sand Hill Road | WB           | 32            | C   | 29.9          | C   |
|                               | SB           | 5.6           | A   | 8.2           | A   |
|                               | NB           | 5.7           | A   | 5.5           | A   |
|                               | Intersection | 12.9          | B   | 10.4          | B   |
| Sullivan Ave & Pierce Rd      | EB           | 41.1          | D   | 39.4          | D   |
|                               | SB           | 8.2           | A   | 14            | B   |
|                               | NB           | 6.3           | A   | 8.1           | A   |
|                               | Intersection | 13.3          | B   | 16.3          | B   |
| Sullivan Ave & Collins Lane   | WB           | 16.1          | C   | 30.7          | E   |
|                               | NB           | 0             | A   | 0             | A   |
|                               | SB           | 0.1           | A   | 0.1           | A   |
|                               | Intersection | 5.4           | B   | 10.3          | C   |

Table 6A and 6B illustrate a comparison of Levels of Service among Existing, No-Build and Build conditions for AM and PM peak hours.

**Table 6A.** LOS Summary- AM Peak Hour

| Intersection (AM Peak Hour)   | Approach     | Existing Conditions |     | No-Build Conditions |     | Build Conditions |     |
|-------------------------------|--------------|---------------------|-----|---------------------|-----|------------------|-----|
|                               |              | Delay (s/veh)       | LOS | Delay (s/veh)       | LOS | Delay (s/veh)    | LOS |
| Sullivan Ave & Sand Hill Road | WB           | 31.9                | C   | 32.1                | C   | 32               | C   |
|                               | SB           | 5.5                 | A   | 5.6                 | A   | 5.6              | A   |
|                               | NB           | 5.7                 | A   | 5.7                 | A   | 5.7              | A   |
|                               | Intersection | 12.8                | B   | 12.9                | B   | 12.9             | B   |
| Sullivan Ave & Pierce Rd      | EB           | 41.1                | D   | 41.3                | D   | 41.1             | D   |
|                               | SB           | 8.3                 | A   | 8.1                 | A   | 8.2              | A   |
|                               | NB           | 4.3                 | A   | 6.3                 | A   | 6.3              | A   |
|                               | Intersection | 12.5                | B   | 13.3                | B   | 13.3             | B   |
| Sullivan Ave & Collins Lane   | WB           | 16.9                | C   | 14.9                | C   | 16.1             | C   |
|                               | NB           | 0                   | A   | 0                   | A   | 0                | A   |
|                               | SB           | 0                   | A   | 0                   | A   | 0.1              | A   |
|                               | Intersection | 5.63                | B   | 4.97                | A   | 5.4              | B   |

**Table 6B.** LOS Summary- PM Peak Hour

| Intersection (PM Peak Hour)   | Approach     | Existing Conditions |     | No-Build Conditions |     | Build Conditions |     |
|-------------------------------|--------------|---------------------|-----|---------------------|-----|------------------|-----|
|                               |              | Delay (s/veh)       | LOS | Delay (s/veh)       | LOS | Delay (s/veh)    | LOS |
| Sullivan Ave & Sand Hill Road | WB           | 30.2                | C   | 30.2                | C   | 29.9             | C   |
|                               | SB           | 8.1                 | A   | 8.1                 | A   | 8.2              | A   |
|                               | NB           | 5.5                 | A   | 5.5                 | A   | 5.5              | A   |
|                               | Intersection | 10.4                | B   | 10.4                | B   | 10.4             | B   |
| Sullivan Ave & Pierce Rd      | EB           | 39.6                | D   | 39.6                | D   | 39.4             | D   |
|                               | SB           | 14                  | B   | 14                  | B   | 14               | B   |
|                               | NB           | 8                   | A   | 8                   | A   | 8.1              | A   |
|                               | Intersection | 16.3                | B   | 16.3                | B   | 16.3             | B   |
| Sullivan Ave & Collins Lane   | WB           | 0                   | A   | 0                   | A   | 30.7             | E   |
|                               | NB           | 0                   | A   | 0                   | A   | 0                | A   |
|                               | SB           | 0                   | A   | 0                   | A   | 0.1              | A   |
|                               | Intersection | 0                   | A   | 0                   | A   | 10.3             | C   |

A review of the LOS summary table indicates that the LOS of none of the intersections will change from No-Build to Build condition with the project traffic included. The proposed Site driveway will operate at a LOS A in the AM peak hour and a LOS C in the PM peak hour.

Thus, the project will not contribute to deterioration of traffic operating conditions at the roadway intersections in the vicinity of the project.

## Access To/From Site

The existing site drive is proposed to be widened and used as a full access site drive for the proposed medical office. The left turn storage lanes along Route 194 for the intersections with Pierce Road and Sand Hill Road terminate across from the driveway. At its current configuration, a full access movement to/from Collins Lane from/to Route 194 creates an undesirable condition for the motorists turning left to the driveway and those turning left out of the driveway. The motorists have to cross two lanes of oncoming traffic to turn into the driveway and a similar situation will exist for motorists turning left from the driveway, presenting potential safety issues.

The storage length for northbound left-turn for Route 194 at Pierce Road is approximately 400 feet including approximately 50 feet taper. The storage length for southbound left-turn for Route 194 at Sullivan Road is approximately 350 feet including approximately 65 feet taper.

A review of the capacity analyses of the neighboring signalized intersections revealed the following:

- 95<sup>th</sup> percentile queue length for the northbound left-turn movement at Pierce Road is approximately 22 feet during the AM peak hour and 21 feet during PM peak hour.
- 95<sup>th</sup> percentile queue length for the southbound left-turn movement at Sand Hill Road is approximately 23 feet during the AM peak hour and 65 feet during the PM peak hour.

Based on the above, it is our recommendation that the left-turn queue storage lengths should be reduced to produce an appropriate design of the driveway ingress and egress to/from Route 194. This design will be subject to review by CTDOT through an encroachment permit review process.

A conceptual plan illustrating this arrangement has been included in the Appendix.

## Conclusion

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Based on the foregoing, with a reasonable degree of engineering certainty, the conclusions of this Traffic Impact Study are the following:

- 1) The proposed development will generate approximately 15 trips during the AM peak hour and approximately 17 trips in the PM peak hour.
- 2) A review of the LOS summary table indicates that the LOS of none of the intersections will change from No-Build to Build condition with the project traffic included. The proposed Site driveway will operate at a LOS A in the AM peak hour and a LOS E in the PM peak hour.

Thus, the project will not contribute to deterioration of traffic operating conditions at the roadway intersections in the vicinity of the project.

- 3) It is recommended to design the Site driveway intersection with Route 194 to facilitate full-service traffic movements to/from the driveway, subject to review and approval by CTDOT.



# **APPENDIX A**

## **Turning Movement Counts**

File Name: e:\1494-1th.ppd

Start Date: 1/18/2024

Start Time: 7:00:00 AM

Site Code: 00000001

Comment 1: TRAFFIC COUNTS

Comment 2: PEAK HOUR

Comment 3: 7:00 TO 8:00 A.M.

Comment 4:

| Start Time  | SULLIVAN AVE<br>SOUTHBOUND |      |      |      | SAND HILL RD<br>WESTBOUND |      |      |      | SULLIVAN AVE<br>NORTHBOUND |      |      |      | EASTBOUND |      |      |      |   |
|-------------|----------------------------|------|------|------|---------------------------|------|------|------|----------------------------|------|------|------|-----------|------|------|------|---|
|             | Right                      | Thru | Left | Peds | Right                     | Thru | Left | Peds | Right                      | Thru | Left | Peds | Right     | Thru | Left | Peds |   |
| 7:00:00 AM  | 0                          | 77   | 5    | 0    | 24                        | 0    | 41   | 0    | 23                         | 108  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 7:15:00 AM  | 0                          | 115  | 16   | 0    | 38                        | 0    | 64   | 0    | 14                         | 85   | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 7:30:00 AM  | 0                          | 108  | 33   | 0    | 39                        | 0    | 34   | 0    | 7                          | 107  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 7:45:00 AM  | 0                          | 122  | 24   | 0    | 45                        | 0    | 27   | 1    | 12                         | 101  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 8:00:00 AM  | 0                          | 108  | 15   | 0    | 36                        | 0    | 22   | 0    | 13                         | 80   | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 8:15:00 AM  | 0                          | 106  | 8    | 0    | 25                        | 0    | 30   | 0    | 13                         | 73   | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 8:30:00 AM  | 0                          | 122  | 15   | 0    | 15                        | 0    | 30   | 0    | 12                         | 61   | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 8:45:00 AM  | 0                          | 146  | 12   | 0    | 24                        | 0    | 35   | 0    | 12                         | 90   | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 9:00:00 AM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 9:15:00 AM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 9:30:00 AM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 9:45:00 AM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 10:00:00 AM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 10:15:00 AM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 10:30:00 AM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 10:45:00 AM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 11:00:00 AM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 11:15:00 AM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 11:30:00 AM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 11:45:00 AM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 12:00:00 PM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 12:15:00 PM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 12:30:00 PM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 12:45:00 PM | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 1:00:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 1:15:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 1:30:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 1:45:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 2:00:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 2:15:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 2:30:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 2:45:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 3:00:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 3:15:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 3:30:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 3:45:00 PM  | 0                          | 0    | 0    | 0    | 0                         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 4:00:00 PM  | 0                          | 137  | 40   | 0    | 20                        | 2    | 22   | 0    | 29                         | 148  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 4:15:00 PM  | 0                          | 140  | 40   | 0    | 6                         | 2    | 20   | 2    | 12                         | 88   | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 4:30:00 PM  | 0                          | 141  | 40   | 0    | 19                        | 0    | 44   | 0    | 30                         | 133  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 4:45:00 PM  | 0                          | 160  | 40   | 0    | 27                        | 0    | 29   | 0    | 33                         | 152  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 5:00:00 PM  | 0                          | 153  | 45   | 0    | 32                        | 0    | 24   | 0    | 35                         | 124  | 0    | 1    | 0         | 0    | 0    | 0    | 0 |
| 5:15:00 PM  | 0                          | 147  | 53   | 0    | 19                        | 0    | 26   | 0    | 22                         | 123  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 5:30:00 PM  | 0                          | 155  | 24   | 0    | 43                        | 0    | 20   | 0    | 24                         | 125  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |
| 5:45:00 PM  | 0                          | 116  | 25   | 0    | 18                        | 0    | 31   | 0    | 26                         | 154  | 0    | 0    | 0         | 0    | 0    | 0    | 0 |

File Name: e:\1494-2th.ppd

Start Date: 1/18/2024

Start Time: 7:00:00 AM

Site Code: 00000002

Comment 1: TRAFFIC COUNTS

Comment 2: PEAK HOUR

Comment 3: 4:15 TO 5:15 P.M.

Comment 4:

| Start Time  | SULLIVAN AVE.<br>SOUTHBOUND |      |      |      | WESTBOUND |      |      |      | SULLIVAN AVE<br>NORTHBOUND |      |      |      | PIERCE RD.<br>EASTBOUND |      |      |      |  |
|-------------|-----------------------------|------|------|------|-----------|------|------|------|----------------------------|------|------|------|-------------------------|------|------|------|--|
|             | Right                       | Thru | Left | Peds | Right     | Thru | Left | Peds | Right                      | Thru | Left | Peds | Right                   | Thru | Left | Peds |  |
| 7:00:00 AM  | 30                          | 77   | 0    | 1    | 0         | 0    | 0    | 0    | 0                          | 125  | 8    | 0    | 4                       | 0    | 60   | 0    |  |
| 7:15:00 AM  | 32                          | 120  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 103  | 21   | 0    | 5                       | 0    | 21   | 0    |  |
| 7:30:00 AM  | 16                          | 127  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 142  | 10   | 0    | 10                      | 0    | 14   | 0    |  |
| 7:45:00 AM  | 11                          | 123  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 121  | 27   | 0    | 12                      | 0    | 22   | 0    |  |
| 8:00:00 AM  | 13                          | 105  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 109  | 13   | 0    | 13                      | 0    | 13   | 0    |  |
| 8:15:00 AM  | 21                          | 115  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 101  | 8    | 0    | 4                       | 0    | 21   | 0    |  |
| 8:30:00 AM  | 33                          | 121  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 84   | 12   | 0    | 13                      | 0    | 18   | 0    |  |
| 8:45:00 AM  | 12                          | 130  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 111  | 18   | 0    | 12                      | 0    | 13   | 0    |  |
| 9:00:00 AM  | 1                           | 2    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 1    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 9:15:00 AM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 9:30:00 AM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 9:45:00 AM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 10:00:00 AM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 10:15:00 AM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 10:30:00 AM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 10:45:00 AM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 11:00:00 AM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 11:15:00 AM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 11:30:00 AM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 11:45:00 AM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 12:00:00 PM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 12:15:00 PM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 12:30:00 PM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 12:45:00 PM | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 1:00:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 1:15:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 1:30:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 1:45:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 2:00:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 2:15:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 2:30:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 2:45:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 3:00:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 3:15:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 3:30:00 PM  | 0                           | 0    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 0    | 0    | 0    | 0                       | 0    | 0    | 0    |  |
| 3:45:00 PM  | 0                           | 2    | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 2    | 2    | 0    | 0                       | 0    | 0    | 0    |  |
| 4:00:00 PM  | 19                          | 156  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 161  | 8    | 0    | 22                      | 0    | 38   | 0    |  |
| 4:15:00 PM  | 13                          | 170  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 167  | 12   | 0    | 16                      | 0    | 33   | 0    |  |
| 4:30:00 PM  | 15                          | 161  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 172  | 14   | 0    | 20                      | 0    | 28   | 0    |  |
| 4:45:00 PM  | 17                          | 162  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 175  | 14   | 0    | 25                      | 0    | 36   | 0    |  |
| 5:00:00 PM  | 20                          | 182  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 147  | 13   | 0    | 12                      | 0    | 38   | 0    |  |
| 5:15:00 PM  | 22                          | 172  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 144  | 10   | 0    | 22                      | 0    | 31   | 0    |  |
| 5:30:00 PM  | 16                          | 157  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 153  | 17   | 0    | 14                      | 0    | 26   | 0    |  |
| 5:45:00 PM  | 19                          | 120  | 0    | 0    | 0         | 0    | 0    | 0    | 0                          | 171  | 12   | 0    | 11                      | 0    | 34   | 0    |  |

Site Code: 00000003

Comment 1: TRAFFIC COUNTS

Comment 2: PEAK HOUR

Comment 3: 4:15 TO 5:15 P.M.

Comment 4:

| Start Time  | SULLIVAN AVE<br>SOUTHBOUND |      |      |      |  | COLLINS LN<br>WESTBOUND |      |      |      |  | SULLIVAN AVE<br>NORTHBOUND |      |      |      |  | DRIVEWAY<br>EASTBOUND |      |      |      |  |  |
|-------------|----------------------------|------|------|------|--|-------------------------|------|------|------|--|----------------------------|------|------|------|--|-----------------------|------|------|------|--|--|
|             | Right                      | Thru | Left | Peds |  | Right                   | Thru | Left | Peds |  | Right                      | Thru | Left | Peds |  | Right                 | Thru | Left | Peds |  |  |
| 7:00:00 AM  | 0                          | 4    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 2    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 7:15:00 AM  | 0                          | 4    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 1    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 7:30:00 AM  | 0                          | 1    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 1    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 7:45:00 AM  | 0                          | 3    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 2    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 8:00:00 AM  | 0                          | 3    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 8:15:00 AM  | 0                          | 2    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 8:30:00 AM  | 0                          | 2    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 2    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 8:45:00 AM  | 0                          | 4    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 1    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 9:00:00 AM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 9:15:00 AM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 9:30:00 AM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 9:45:00 AM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 10:00:00 AM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 10:15:00 AM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 10:30:00 AM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 10:45:00 AM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 11:00:00 AM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 11:15:00 AM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 11:30:00 AM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 11:45:00 AM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 12:00:00 PM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 12:15:00 PM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 12:30:00 PM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 12:45:00 PM | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 1:00:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 1:15:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 1:30:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 1:45:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 2:00:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 2:15:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 2:30:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 2:45:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 3:00:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 3:15:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 3:30:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 3:45:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 4:00:00 PM  | 0                          | 1    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 1    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 4:15:00 PM  | 0                          | 6    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 4:30:00 PM  | 0                          | 5    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 4:45:00 PM  | 0                          | 2    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 5:00:00 PM  | 0                          | 3    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 5:15:00 PM  | 0                          | 3    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 5:30:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |
| 5:45:00 PM  | 0                          | 0    | 0    | 0    |  | 0                       | 0    | 0    | 0    |  | 0                          | 0    | 0    | 0    |  | 0                     | 0    | 0    | 0    |  |  |

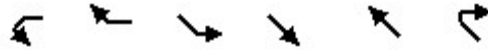
# **APPENDIX B**

## **2024 Existing Conditions Capacity Analysis Reports**

## 1: SULLIVAN AVE &amp; Sand Hill Road

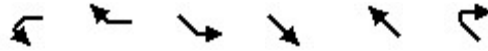
|                            |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                 | WBL                                                                               | WBR                                                                               | SEL                                                                               | SET                                                                               | NWT                                                                               | NWR                                                                               |
| Lane Configurations        |  |  |  |  |  |  |
| Traffic Volume (vph)       | 166                                                                               | 146                                                                               | 78                                                                                | 422                                                                               | 401                                                                               | 56                                                                                |
| Future Volume (vph)        | 166                                                                               | 146                                                                               | 78                                                                                | 422                                                                               | 401                                                                               | 56                                                                                |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)        | 0                                                                                 | 276                                                                               | 350                                                                               |                                                                                   |                                                                                   | 330                                                                               |
| Storage Lanes              | 1                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |
| Taper Length (ft)          | 25                                                                                |                                                                                   | 25                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                        |                                                                                   | 0.850                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |
| Flt Protected              | 0.950                                                                             |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)          | 1719                                                                              | 1538                                                                              | 1687                                                                              | 1827                                                                              | 1845                                                                              | 1538                                                                              |
| Flt Permitted              | 0.950                                                                             |                                                                                   | 0.492                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)          | 1719                                                                              | 1538                                                                              | 874                                                                               | 1827                                                                              | 1845                                                                              | 1538                                                                              |
| Right Turn on Red          |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)          |                                                                                   | 180                                                                               |                                                                                   |                                                                                   |                                                                                   | 92                                                                                |
| Link Speed (mph)           | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   |
| Link Distance (ft)         | 567                                                                               |                                                                                   |                                                                                   | 389                                                                               | 584                                                                               |                                                                                   |
| Travel Time (s)            | 12.9                                                                              |                                                                                   |                                                                                   | 8.8                                                                               | 13.3                                                                              |                                                                                   |
| Peak Hour Factor           | 0.65                                                                              | 0.81                                                                              | 0.59                                                                              | 0.86                                                                              | 0.93                                                                              | 0.61                                                                              |
| Heavy Vehicles (%)         | 5%                                                                                | 5%                                                                                | 7%                                                                                | 4%                                                                                | 3%                                                                                | 5%                                                                                |
| Adj. Flow (vph)            | 255                                                                               | 180                                                                               | 132                                                                               | 491                                                                               | 431                                                                               | 92                                                                                |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)      | 255                                                                               | 180                                                                               | 132                                                                               | 491                                                                               | 431                                                                               | 92                                                                                |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment             | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(ft)           | 12                                                                                |                                                                                   |                                                                                   | 12                                                                                | 12                                                                                |                                                                                   |
| Link Offset(ft)            | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   |
| Crosswalk Width(ft)        | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                | 16                                                                                |                                                                                   |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (mph)        | 15                                                                                | 9                                                                                 | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 |
| Number of Detectors        | 1                                                                                 | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 |
| Detector Template          | Left                                                                              | Right                                                                             | Left                                                                              | Thru                                                                              | Thru                                                                              | Right                                                                             |
| Leading Detector (ft)      | 20                                                                                | 20                                                                                | 20                                                                                | 100                                                                               | 100                                                                               | 20                                                                                |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Size(ft)        | 20                                                                                | 20                                                                                | 20                                                                                | 6                                                                                 | 6                                                                                 | 20                                                                                |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 2 Position(ft)    |                                                                                   |                                                                                   |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |
| Detector 2 Size(ft)        |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |
| Detector 2 Type            |                                                                                   |                                                                                   |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 2 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)      |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Turn Type                  | Prot                                                                              | Perm                                                                              | Perm                                                                              | NA                                                                                | NA                                                                                | Perm                                                                              |
| Protected Phases           | 8                                                                                 |                                                                                   |                                                                                   | 6                                                                                 | 2                                                                                 |                                                                                   |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group              | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Permitted Phases        |       | 8     | 6     |       |       | 2     |
| Detector Phase          | 8     | 8     | 6     | 6     | 2     | 2     |
| Switch Phase            |       |       |       |       |       |       |
| Minimum Initial (s)     | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)       | 22.5  | 22.5  | 24.0  | 24.0  | 24.0  | 24.0  |
| Total Split (s)         | 22.5  | 22.5  | 62.5  | 62.5  | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% | 73.5% | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |       |       |       |
| Lead-Lag Optimize?      |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max | C-Max | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     | 0     | 0     | 0     |
| Act Effect Green (s)    | 16.3  | 16.3  | 58.7  | 58.7  | 58.7  | 58.7  |
| Actuated g/C Ratio      | 0.19  | 0.19  | 0.69  | 0.69  | 0.69  | 0.69  |
| v/c Ratio               | 0.78  | 0.41  | 0.22  | 0.39  | 0.34  | 0.08  |
| Control Delay           | 48.9  | 7.7   | 5.4   | 5.6   | 6.6   | 1.4   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 48.9  | 7.7   | 5.4   | 5.6   | 6.6   | 1.4   |
| LOS                     | D     | A     | A     | A     | A     | A     |
| Approach Delay          | 31.9  |       |       | 5.5   | 5.7   |       |
| Approach LOS            | C     |       |       | A     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 50th %ile Green (s)     | 17.8  | 17.8  | 57.2  | 57.2  | 57.2  | 57.2  |
| 50th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 30th %ile Green (s)     | 15.2  | 15.2  | 59.8  | 59.8  | 59.8  | 59.8  |
| 30th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 10th %ile Green (s)     | 11.5  | 11.5  | 63.5  | 63.5  | 63.5  | 63.5  |
| 10th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| Stops (vph)             | 152   | 21    | 20    | 109   | 153   | 4     |
| Fuel Used(gal)          | 3     | 1     | 0     | 2     | 3     | 0     |
| CO Emissions (g/hr)     | 226   | 69    | 30    | 165   | 224   | 20    |
| NOx Emissions (g/hr)    | 44    | 13    | 6     | 32    | 44    | 4     |
| VOC Emissions (g/hr)    | 52    | 16    | 7     | 38    | 52    | 5     |
| Dilemma Vehicles (#)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Queue Length 50th (ft)  | 127   | 0     | 18    | 70    | 85    | 0     |
| Queue Length 95th (ft)  | 139   | 36    | 21    | 100   | 135   | 4     |
| Internal Link Dist (ft) | 487   |       |       | 309   | 504   |       |
| Turn Bay Length (ft)    |       | 276   | 350   |       |       | 330   |
| Base Capacity (vph)     | 374   | 475   | 603   | 1261  | 1274  | 1090  |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group             | WBL  | WBR  | SEL  | SET  | NWT  | NWR  |
|------------------------|------|------|------|------|------|------|
| Starvation Cap Reductn | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio      | 0.68 | 0.38 | 0.22 | 0.39 | 0.34 | 0.08 |

## Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWT and 6:SETL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 12.8

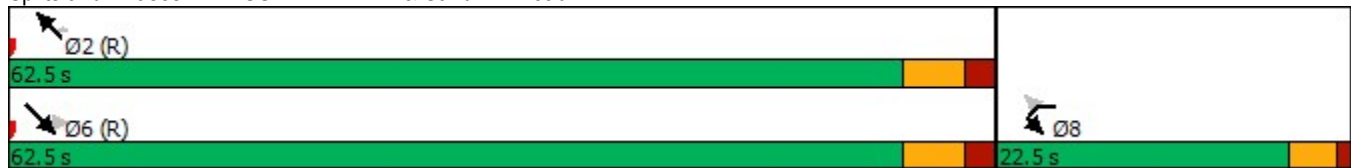
Intersection LOS: B

Intersection Capacity Utilization 48.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: SULLIVAN AVE &amp; Sand Hill Road



## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group                 | EBL   | EBR   | SBL   | SBR   | NWL   | NWR   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 117   | 31    | 447   | 89    | 66    | 491   |
| Future Volume (vph)        | 117   | 31    | 447   | 89    | 66    | 491   |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 150   | 0     | 0     | 0     | 400   | 0     |
| Storage Lanes              | 1     | 1     | 1     | 0     | 1     | 1     |
| Taper Length (ft)          | 25    |       | 25    |       | 25    |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 | 0.973 |       |       | 0.850 |
| Flt Protected              | 0.950 |       | 0.962 |       | 0.950 |       |
| Satd. Flow (prot)          | 1719  | 1455  | 1713  | 0     | 1703  | 1568  |
| Flt Permitted              | 0.950 |       | 0.962 |       | 0.366 |       |
| Satd. Flow (perm)          | 1719  | 1455  | 1713  | 0     | 656   | 1568  |
| Right Turn on Red          |       | Yes   |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |       | 48    | 32    |       |       | 261   |
| Link Speed (mph)           | 30    |       | 30    |       | 30    |       |
| Link Distance (ft)         | 449   |       | 426   |       | 431   |       |
| Travel Time (s)            | 10.2  |       | 9.7   |       | 9.8   |       |
| Peak Hour Factor           | 0.49  | 0.65  | 0.88  | 0.70  | 0.61  | 0.86  |
| Heavy Vehicles (%)         | 5%    | 11%   | 4%    | 3%    | 6%    | 3%    |
| Adj. Flow (vph)            | 239   | 48    | 508   | 127   | 108   | 571   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 239   | 48    | 635   | 0     | 108   | 571   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Right | Left  | Right |
| Median Width(ft)           | 12    |       | 12    |       | 12    |       |
| Link Offset(ft)            | 0     |       | 0     |       | 0     |       |
| Crosswalk Width(ft)        | 16    |       | 16    |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15    | 9     | 15    | 9     |
| Number of Detectors        | 1     | 1     | 1     |       | 1     | 1     |
| Detector Template          | Left  | Right | Left  |       | Left  | Right |
| Leading Detector (ft)      | 20    | 20    | 20    |       | 20    | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 20    |       | 20    | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Turn Type                  | Prot  | Perm  | Prot  |       | Perm  | Prot  |
| Protected Phases           | 4     |       | 6     |       |       | 2     |
| Permitted Phases           |       | 4     |       |       | 2     |       |
| Detector Phase             | 4     | 4     | 6     |       | 2     | 2     |
| Switch Phase               |       |       |       |       |       |       |
| Minimum Initial (s)        | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   |
| Minimum Split (s)          | 22.5  | 22.5  | 24.0  |       | 24.0  | 24.0  |

## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group              | EBL   | EBR   | SBL   | SBR | NWL   | NWR   |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Total Split (s)         | 22.5  | 22.5  | 62.5  |     | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% |     | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   |     | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   |     | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |     |       |       |
| Lead-Lag Optimize?      |       |       |       |     |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max |     | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  |     | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     |     | 0     | 0     |
| Act Effect Green (s)    | 15.8  | 15.8  | 59.2  |     | 59.2  | 59.2  |
| Actuated g/C Ratio      | 0.19  | 0.19  | 0.70  |     | 0.70  | 0.70  |
| v/c Ratio               | 0.75  | 0.16  | 0.53  |     | 0.24  | 0.49  |
| Control Delay           | 47.3  | 9.9   | 8.3   |     | 6.1   | 4.0   |
| Queue Delay             | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             | 47.3  | 9.9   | 8.3   |     | 6.1   | 4.0   |
| LOS                     | D     | A     | A     |     | A     | A     |
| Approach Delay          | 41.1  |       | 8.3   |     | 4.3   |       |
| Approach LOS            | D     |       | A     |     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 50th %ile Green (s)     | 16.9  | 16.9  | 58.1  |     | 58.1  | 58.1  |
| 50th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 30th %ile Green (s)     | 14.4  | 14.4  | 60.6  |     | 60.6  | 60.6  |
| 30th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 10th %ile Green (s)     | 10.7  | 10.7  | 64.3  |     | 64.3  | 64.3  |
| 10th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| Stops (vph)             | 108   | 8     | 238   |     | 20    | 107   |
| Fuel Used(gal)          | 2     | 0     | 4     |     | 0     | 3     |
| CO Emissions (g/hr)     | 149   | 15    | 279   |     | 29    | 184   |
| NOx Emissions (g/hr)    | 29    | 3     | 54    |     | 6     | 36    |
| VOC Emissions (g/hr)    | 35    | 3     | 65    |     | 7     | 43    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     |     | 0     | 0     |
| Queue Length 50th (ft)  | 120   | 0     | 137   |     | 16    | 34    |
| Queue Length 95th (ft)  | 94    | 13    | 221   |     | 21    | 79    |
| Internal Link Dist (ft) | 369   |       | 346   |     | 351   |       |
| Turn Bay Length (ft)    | 150   |       |       |     | 400   |       |
| Base Capacity (vph)     | 374   | 354   | 1202  |     | 457   | 1171  |
| Starvation Cap Reductn  | 0     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       | 0.64  | 0.14  | 0.53  |     | 0.24  | 0.49  |

**4: SULLIVAN AVE & Pierce Rd****Intersection Summary**

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWL and 6:SBL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 12.5

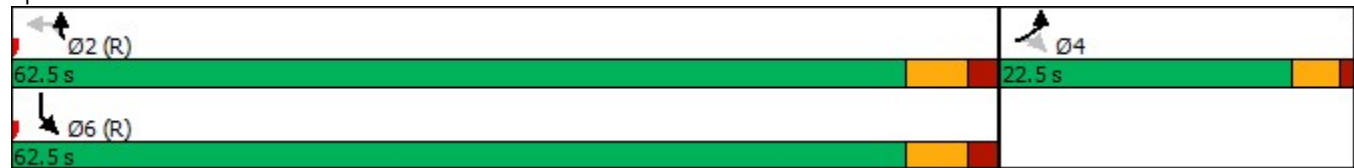
Intersection LOS: B

Intersection Capacity Utilization 54.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: SULLIVAN AVE &amp; Pierce Rd



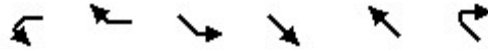
## 6: SULLIVAN AVE &amp; Collins Lane

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | WBL                                                                               | WBR                                                                               | SEL                                                                               | SET                                                                               | NWT                                                                               | NWR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)              | 1                                                                                 | 1                                                                                 | 1                                                                                 | 534                                                                               | 514                                                                               | 0                                                                                 |
| Future Volume (vph)               | 1                                                                                 | 1                                                                                 | 1                                                                                 | 534                                                                               | 514                                                                               | 0                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 0.932                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flt Protected                     | 0.976                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)                 | 1694                                                                              | 0                                                                                 | 0                                                                                 | 1863                                                                              | 1863                                                                              | 0                                                                                 |
| Flt Permitted                     | 0.976                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)                 | 1694                                                                              | 0                                                                                 | 0                                                                                 | 1863                                                                              | 1863                                                                              | 0                                                                                 |
| Link Speed (mph)                  | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   |
| Link Distance (ft)                | 264                                                                               |                                                                                   |                                                                                   | 431                                                                               | 389                                                                               |                                                                                   |
| Travel Time (s)                   | 6.0                                                                               |                                                                                   |                                                                                   | 9.8                                                                               | 8.8                                                                               |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Adj. Flow (vph)                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 580                                                                               | 559                                                                               | 0                                                                                 |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 2                                                                                 | 0                                                                                 | 0                                                                                 | 581                                                                               | 559                                                                               | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(ft)                  | 12                                                                                |                                                                                   |                                                                                   | 12                                                                                | 12                                                                                |                                                                                   |
| Link Offset(ft)                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   |
| Crosswalk Width(ft)               | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                | 16                                                                                |                                                                                   |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (mph)               | 15                                                                                | 9                                                                                 | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 38.9%                                                                             |                                                                                   |                                                                                   | ICU Level of Service A                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

## 1: SULLIVAN AVE &amp; Sand Hill Road

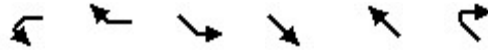
|                            |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                 | WBL                                                                               | WBR                                                                               | SEL                                                                               | SET                                                                               | NWT                                                                               | NWR                                                                               |
| Lane Configurations        |  |  |  |  |  |  |
| Traffic Volume (vph)       | 125                                                                               | 99                                                                                | 182                                                                               | 613                                                                               | 542                                                                               | 122                                                                               |
| Future Volume (vph)        | 125                                                                               | 99                                                                                | 182                                                                               | 613                                                                               | 542                                                                               | 122                                                                               |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)        | 0                                                                                 | 276                                                                               | 350                                                                               |                                                                                   |                                                                                   | 330                                                                               |
| Storage Lanes              | 1                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |
| Taper Length (ft)          | 25                                                                                |                                                                                   | 25                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                        |                                                                                   | 0.850                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |
| Flt Protected              | 0.950                                                                             |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)          | 1719                                                                              | 1538                                                                              | 1687                                                                              | 1827                                                                              | 1845                                                                              | 1538                                                                              |
| Flt Permitted              | 0.950                                                                             |                                                                                   | 0.403                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)          | 1719                                                                              | 1538                                                                              | 716                                                                               | 1827                                                                              | 1845                                                                              | 1538                                                                              |
| Right Turn on Red          |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)          |                                                                                   | 122                                                                               |                                                                                   |                                                                                   |                                                                                   | 200                                                                               |
| Link Speed (mph)           | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   |
| Link Distance (ft)         | 567                                                                               |                                                                                   |                                                                                   | 389                                                                               | 584                                                                               |                                                                                   |
| Travel Time (s)            | 12.9                                                                              |                                                                                   |                                                                                   | 8.8                                                                               | 13.3                                                                              |                                                                                   |
| Peak Hour Factor           | 0.65                                                                              | 0.81                                                                              | 0.59                                                                              | 0.86                                                                              | 0.93                                                                              | 0.61                                                                              |
| Heavy Vehicles (%)         | 5%                                                                                | 5%                                                                                | 7%                                                                                | 4%                                                                                | 3%                                                                                | 5%                                                                                |
| Adj. Flow (vph)            | 192                                                                               | 122                                                                               | 308                                                                               | 713                                                                               | 583                                                                               | 200                                                                               |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)      | 192                                                                               | 122                                                                               | 308                                                                               | 713                                                                               | 583                                                                               | 200                                                                               |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment             | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(ft)           | 12                                                                                |                                                                                   |                                                                                   | 12                                                                                | 12                                                                                |                                                                                   |
| Link Offset(ft)            | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   |
| Crosswalk Width(ft)        | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                | 16                                                                                |                                                                                   |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (mph)        | 15                                                                                | 9                                                                                 | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 |
| Number of Detectors        | 1                                                                                 | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 |
| Detector Template          | Left                                                                              | Right                                                                             | Left                                                                              | Thru                                                                              | Thru                                                                              | Right                                                                             |
| Leading Detector (ft)      | 20                                                                                | 20                                                                                | 20                                                                                | 100                                                                               | 100                                                                               | 20                                                                                |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Size(ft)        | 20                                                                                | 20                                                                                | 20                                                                                | 6                                                                                 | 6                                                                                 | 20                                                                                |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 2 Position(ft)    |                                                                                   |                                                                                   |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |
| Detector 2 Size(ft)        |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |
| Detector 2 Type            |                                                                                   |                                                                                   |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 2 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)      |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Turn Type                  | Prot                                                                              | Perm                                                                              | Perm                                                                              | NA                                                                                | NA                                                                                | Perm                                                                              |
| Protected Phases           | 8                                                                                 |                                                                                   |                                                                                   | 6                                                                                 | 2                                                                                 |                                                                                   |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group              | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Permitted Phases        |       | 8     | 6     |       |       | 2     |
| Detector Phase          | 8     | 8     | 6     | 6     | 2     | 2     |
| Switch Phase            |       |       |       |       |       |       |
| Minimum Initial (s)     | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)       | 22.5  | 22.5  | 24.0  | 24.0  | 24.0  | 24.0  |
| Total Split (s)         | 22.5  | 22.5  | 62.5  | 62.5  | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% | 73.5% | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |       |       |       |
| Lead-Lag Optimize?      |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max | C-Max | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     | 0     | 0     | 0     |
| Act Effect Green (s)    | 14.3  | 14.3  | 60.7  | 60.7  | 60.7  | 60.7  |
| Actuated g/C Ratio      | 0.17  | 0.17  | 0.71  | 0.71  | 0.71  | 0.71  |
| v/c Ratio               | 0.66  | 0.34  | 0.60  | 0.55  | 0.44  | 0.17  |
| Control Delay           | 43.9  | 8.5   | 10.8  | 6.9   | 6.9   | 1.2   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 43.9  | 8.5   | 10.8  | 6.9   | 6.9   | 1.2   |
| LOS                     | D     | A     | B     | A     | A     | A     |
| Approach Delay          | 30.2  |       |       | 8.1   | 5.5   |       |
| Approach LOS            | C     |       |       | A     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 70th %ile Green (s)     | 16.9  | 16.9  | 58.1  | 58.1  | 58.1  | 58.1  |
| 70th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 50th %ile Green (s)     | 14.7  | 14.7  | 60.3  | 60.3  | 60.3  | 60.3  |
| 50th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 30th %ile Green (s)     | 12.4  | 12.4  | 62.6  | 62.6  | 62.6  | 62.6  |
| 30th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 10th %ile Green (s)     | 9.1   | 9.1   | 65.9  | 65.9  | 65.9  | 65.9  |
| 10th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| Stops (vph)             | 113   | 17    | 66    | 186   | 218   | 7     |
| Fuel Used(gal)          | 2     | 1     | 1     | 4     | 4     | 1     |
| CO Emissions (g/hr)     | 160   | 49    | 92    | 262   | 310   | 44    |
| NOx Emissions (g/hr)    | 31    | 10    | 18    | 51    | 60    | 8     |
| VOC Emissions (g/hr)    | 37    | 11    | 21    | 61    | 72    | 10    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Queue Length 50th (ft)  | 97    | 0     | 47    | 107   | 111   | 0     |
| Queue Length 95th (ft)  | 107   | 32    | 64    | 193   | 201   | 2     |
| Internal Link Dist (ft) | 487   |       |       | 309   | 504   |       |
| Turn Bay Length (ft)    |       | 276   | 350   |       |       | 330   |
| Base Capacity (vph)     | 374   | 430   | 511   | 1304  | 1317  | 1155  |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group             | WBL  | WBR  | SEL  | SET  | NWT  | NWR  |
|------------------------|------|------|------|------|------|------|
| Starvation Cap Reductn | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio      | 0.51 | 0.28 | 0.60 | 0.55 | 0.44 | 0.17 |

## Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWT and 6:SETL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 10.4

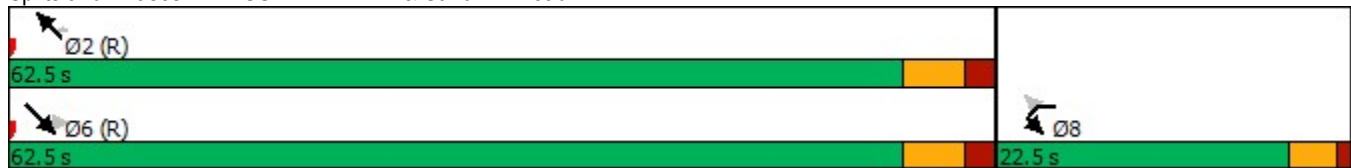
Intersection LOS: B

Intersection Capacity Utilization 58.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SULLIVAN AVE &amp; Sand Hill Road



## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group                 | EBL   | EBR   | SBL   | SBR   | NWL   | NWR   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 138   | 75    | 689   | 66    | 54    | 674   |
| Future Volume (vph)        | 138   | 75    | 689   | 66    | 54    | 674   |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 150   | 0     | 0     | 0     | 400   | 0     |
| Storage Lanes              | 1     | 1     | 1     | 0     | 1     | 1     |
| Taper Length (ft)          | 25    |       | 25    |       | 25    |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 | 0.986 |       |       | 0.850 |
| Flt Protected              | 0.950 |       | 0.957 |       | 0.950 |       |
| Satd. Flow (prot)          | 1719  | 1455  | 1726  | 0     | 1703  | 1568  |
| Flt Permitted              | 0.950 |       | 0.957 |       | 0.224 |       |
| Satd. Flow (perm)          | 1719  | 1455  | 1726  | 0     | 402   | 1568  |
| Right Turn on Red          |       | Yes   |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |       | 115   | 15    |       |       | 200   |
| Link Speed (mph)           | 30    |       | 30    |       | 30    |       |
| Link Distance (ft)         | 449   |       | 426   |       | 431   |       |
| Travel Time (s)            | 10.2  |       | 9.7   |       | 9.8   |       |
| Peak Hour Factor           | 0.49  | 0.65  | 0.88  | 0.70  | 0.61  | 0.86  |
| Heavy Vehicles (%)         | 5%    | 11%   | 4%    | 3%    | 6%    | 3%    |
| Adj. Flow (vph)            | 282   | 115   | 783   | 94    | 89    | 784   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 282   | 115   | 877   | 0     | 89    | 784   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Right | Left  | Right |
| Median Width(ft)           | 12    |       | 12    |       | 12    |       |
| Link Offset(ft)            | 0     |       | 0     |       | 0     |       |
| Crosswalk Width(ft)        | 16    |       | 16    |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15    | 9     | 15    | 9     |
| Number of Detectors        | 1     | 1     | 1     |       | 1     | 1     |
| Detector Template          | Left  | Right | Left  |       | Left  | Right |
| Leading Detector (ft)      | 20    | 20    | 20    |       | 20    | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 20    |       | 20    | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Turn Type                  | Prot  | Perm  | Prot  |       | Perm  | Prot  |
| Protected Phases           | 4     |       | 6     |       |       | 2     |
| Permitted Phases           |       | 4     |       |       | 2     |       |
| Detector Phase             | 4     | 4     | 6     |       | 2     | 2     |
| Switch Phase               |       |       |       |       |       |       |
| Minimum Initial (s)        | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   |
| Minimum Split (s)          | 22.5  | 22.5  | 24.0  |       | 24.0  | 24.0  |

## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group              | EBL   | EBR   | SBL   | SBR | NWL   | NWR   |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Total Split (s)         | 22.5  | 22.5  | 62.5  |     | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% |     | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   |     | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   |     | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |     |       |       |
| Lead-Lag Optimize?      |       |       |       |     |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max |     | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  |     | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     |     | 0     | 0     |
| Act Effect Green (s)    | 17.0  | 17.0  | 58.0  |     | 58.0  | 58.0  |
| Actuated g/C Ratio      | 0.20  | 0.20  | 0.68  |     | 0.68  | 0.68  |
| v/c Ratio               | 0.82  | 0.30  | 0.74  |     | 0.32  | 0.69  |
| Control Delay           | 52.4  | 8.0   | 14.0  |     | 8.4   | 7.9   |
| Queue Delay             | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             | 52.4  | 8.0   | 14.0  |     | 8.4   | 7.9   |
| LOS                     | D     | A     | B     |     | A     | A     |
| Approach Delay          | 39.6  |       | 14.0  |     | 8.0   |       |
| Approach LOS            | D     |       | B     |     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 50th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 50th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 30th %ile Green (s)     | 16.8  | 16.8  | 58.2  |     | 58.2  | 58.2  |
| 30th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 10th %ile Green (s)     | 12.9  | 12.9  | 62.1  |     | 62.1  | 62.1  |
| 10th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| Stops (vph)             | 124   | 14    | 476   |     | 16    | 195   |
| Fuel Used(gal)          | 3     | 0     | 7     |     | 0     | 4     |
| CO Emissions (g/hr)     | 185   | 32    | 509   |     | 25    | 310   |
| NOx Emissions (g/hr)    | 36    | 6     | 99    |     | 5     | 60    |
| VOC Emissions (g/hr)    | 43    | 7     | 118   |     | 6     | 72    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     |     | 0     | 0     |
| Queue Length 50th (ft)  | 142   | 0     | 273   |     | 13    | 83    |
| Queue Length 95th (ft)  | 109   | 15    | 413   |     | 20    | 131   |
| Internal Link Dist (ft) | 369   |       | 346   |     | 351   |       |
| Turn Bay Length (ft)    | 150   |       |       |     | 400   |       |
| Base Capacity (vph)     | 374   | 406   | 1181  |     | 274   | 1132  |
| Starvation Cap Reductn  | 0     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       | 0.75  | 0.28  | 0.74  |     | 0.32  | 0.69  |

**4: SULLIVAN AVE & Pierce Rd****Intersection Summary**

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWL and 6:SBL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.3

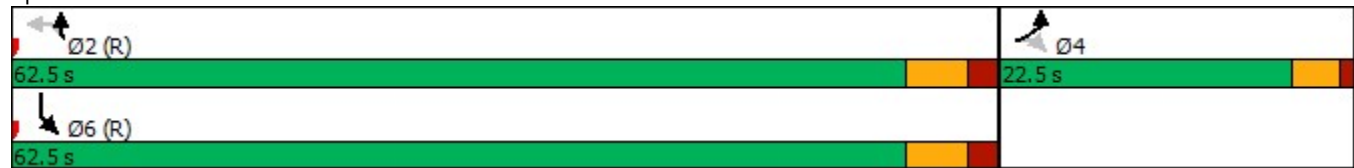
Intersection LOS: B

Intersection Capacity Utilization 67.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: SULLIVAN AVE &amp; Pierce Rd



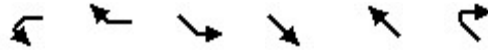
## 6: SULLIVAN AVE &amp; Collins Lane

|                                         |  |  |  |  |  |  |
|-----------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                              | WBL                                                                               | WBR                                                                               | SEL                                                                               | SET                                                                               | NWT                                                                               | NWR                                                                               |
| Lane Configurations                     |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)                    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 710                                                                               | 769                                                                               | 0                                                                                 |
| Future Volume (vph)                     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 710                                                                               | 769                                                                               | 0                                                                                 |
| Ideal Flow (vphpl)                      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Lane Util. Factor                       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flt Protected                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)                       | 1863                                                                              | 0                                                                                 | 0                                                                                 | 1863                                                                              | 1863                                                                              | 0                                                                                 |
| Flt Permitted                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)                       | 1863                                                                              | 0                                                                                 | 0                                                                                 | 1863                                                                              | 1863                                                                              | 0                                                                                 |
| Link Speed (mph)                        | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   |
| Link Distance (ft)                      | 264                                                                               |                                                                                   |                                                                                   | 431                                                                               | 389                                                                               |                                                                                   |
| Travel Time (s)                         | 6.0                                                                               |                                                                                   |                                                                                   | 9.8                                                                               | 8.8                                                                               |                                                                                   |
| Peak Hour Factor                        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Adj. Flow (vph)                         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 772                                                                               | 836                                                                               | 0                                                                                 |
| Shared Lane Traffic (%)                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 772                                                                               | 836                                                                               | 0                                                                                 |
| Enter Blocked Intersection              | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                          | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(ft)                        | 12                                                                                |                                                                                   |                                                                                   | 12                                                                                | 12                                                                                |                                                                                   |
| Link Offset(ft)                         | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   |
| Crosswalk Width(ft)                     | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                | 16                                                                                |                                                                                   |
| Two way Left Turn Lane                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (mph)                     | 15                                                                                | 9                                                                                 | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 |
| Sign Control                            | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Intersection Summary                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                              | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type: Unsignalized              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization 43.8% |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service A                                                            |                                                                                   |                                                                                   |
| Analysis Period (min) 15                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# **APPENDIX C**

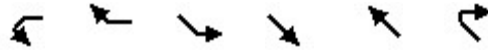
## **2025 No-Build Conditions Capacity Analysis Reports**

## 1: SULLIVAN AVE &amp; Sand Hill Road



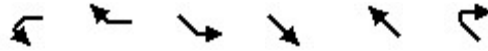
| Lane Group                 | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 169   | 149   | 80    | 430   | 409   | 59    |
| Future Volume (vph)        | 169   | 149   | 80    | 430   | 409   | 59    |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 0     | 276   | 350   |       |       | 330   |
| Storage Lanes              | 1     | 1     | 1     |       |       | 1     |
| Taper Length (ft)          | 25    |       | 25    |       |       |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       | 0.950 |       |       |       |
| Satd. Flow (prot)          | 1719  | 1538  | 1687  | 1827  | 1845  | 1538  |
| Flt Permitted              | 0.950 |       | 0.485 |       |       |       |
| Satd. Flow (perm)          | 1719  | 1538  | 861   | 1827  | 1845  | 1538  |
| Right Turn on Red          |       | Yes   |       |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 184   |       |       |       | 97    |
| Link Speed (mph)           | 30    |       |       | 30    | 30    |       |
| Link Distance (ft)         | 567   |       |       | 389   | 584   |       |
| Travel Time (s)            | 12.9  |       |       | 8.8   | 13.3  |       |
| Peak Hour Factor           | 0.65  | 0.81  | 0.59  | 0.86  | 0.93  | 0.61  |
| Heavy Vehicles (%)         | 5%    | 5%    | 7%    | 4%    | 3%    | 5%    |
| Adj. Flow (vph)            | 260   | 184   | 136   | 500   | 440   | 97    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 260   | 184   | 136   | 500   | 440   | 97    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Left  | Left  | Right |
| Median Width(ft)           | 12    |       |       | 12    | 12    |       |
| Link Offset(ft)            | 0     |       |       | 0     | 0     |       |
| Crosswalk Width(ft)        | 16    |       |       | 16    | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15    |       |       | 9     |
| Number of Detectors        | 1     | 1     | 1     | 2     | 2     | 1     |
| Detector Template          | Left  | Right | Left  | Thru  | Thru  | Right |
| Leading Detector (ft)      | 20    | 20    | 20    | 100   | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 20    | 6     | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       |       |       | 94    | 94    |       |
| Detector 2 Size(ft)        |       |       |       | 6     | 6     |       |
| Detector 2 Type            |       |       |       | Cl+Ex | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       |       |       | 0.0   | 0.0   |       |
| Turn Type                  | Prot  | Perm  | Perm  | NA    | NA    | Perm  |
| Protected Phases           | 8     |       |       | 6     | 2     |       |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group              | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Permitted Phases        |       | 8     | 6     |       |       | 2     |
| Detector Phase          | 8     | 8     | 6     | 6     | 2     | 2     |
| Switch Phase            |       |       |       |       |       |       |
| Minimum Initial (s)     | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)       | 22.5  | 22.5  | 24.0  | 24.0  | 24.0  | 24.0  |
| Total Split (s)         | 22.5  | 22.5  | 62.5  | 62.5  | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% | 73.5% | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |       |       |       |
| Lead-Lag Optimize?      |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max | C-Max | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     | 0     | 0     | 0     |
| Act Effect Green (s)    | 16.5  | 16.5  | 58.5  | 58.5  | 58.5  | 58.5  |
| Actuated g/C Ratio      | 0.19  | 0.19  | 0.69  | 0.69  | 0.69  | 0.69  |
| v/c Ratio               | 0.78  | 0.41  | 0.23  | 0.40  | 0.35  | 0.09  |
| Control Delay           | 49.4  | 7.6   | 5.5   | 5.7   | 6.7   | 1.4   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 49.4  | 7.6   | 5.5   | 5.7   | 6.7   | 1.4   |
| LOS                     | D     | A     | A     | A     | A     | A     |
| Approach Delay          | 32.1  |       |       | 5.6   | 5.7   |       |
| Approach LOS            | C     |       |       | A     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 50th %ile Green (s)     | 18.1  | 18.1  | 56.9  | 56.9  | 56.9  | 56.9  |
| 50th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 30th %ile Green (s)     | 15.5  | 15.5  | 59.5  | 59.5  | 59.5  | 59.5  |
| 30th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 10th %ile Green (s)     | 11.7  | 11.7  | 63.3  | 63.3  | 63.3  | 63.3  |
| 10th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| Stops (vph)             | 153   | 22    | 21    | 111   | 159   | 4     |
| Fuel Used(gal)          | 3     | 1     | 0     | 2     | 3     | 0     |
| CO Emissions (g/hr)     | 230   | 71    | 31    | 169   | 231   | 21    |
| NOx Emissions (g/hr)    | 45    | 14    | 6     | 33    | 45    | 4     |
| VOC Emissions (g/hr)    | 53    | 16    | 7     | 39    | 53    | 5     |
| Dilemma Vehicles (#)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Queue Length 50th (ft)  | 130   | 0     | 19    | 72    | 89    | 0     |
| Queue Length 95th (ft)  | 141   | 36    | 22    | 101   | 139   | 4     |
| Internal Link Dist (ft) | 487   |       |       | 309   | 504   |       |
| Turn Bay Length (ft)    |       | 276   | 350   |       |       | 330   |
| Base Capacity (vph)     | 374   | 478   | 593   | 1258  | 1270  | 1089  |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group             | WBL  | WBR  | SEL  | SET  | NWT  | NWR  |
|------------------------|------|------|------|------|------|------|
| Starvation Cap Reductn | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio      | 0.70 | 0.38 | 0.23 | 0.40 | 0.35 | 0.09 |

## Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWT and 6:SETL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 12.9

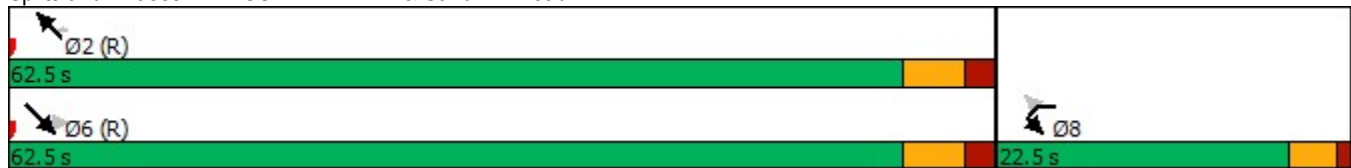
Intersection LOS: B

Intersection Capacity Utilization 48.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: SULLIVAN AVE &amp; Sand Hill Road



## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group                 | EBL   | EBR   | SET   | SER   | NWL   | NWT   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 119   | 32    | 456   | 91    | 67    | 501   |
| Future Volume (vph)        | 119   | 32    | 456   | 91    | 67    | 501   |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 150   | 0     |       | 0     | 400   |       |
| Storage Lanes              | 1     | 1     |       | 0     | 1     |       |
| Taper Length (ft)          | 25    |       |       |       | 25    |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 | 0.973 |       |       |       |
| Flt Protected              | 0.950 |       |       |       | 0.950 |       |
| Satd. Flow (prot)          | 1719  | 1455  | 1781  | 0     | 1703  | 1845  |
| Flt Permitted              | 0.950 |       |       |       | 0.358 |       |
| Satd. Flow (perm)          | 1719  | 1455  | 1781  | 0     | 642   | 1845  |
| Right Turn on Red          |       | Yes   |       | Yes   |       |       |
| Satd. Flow (RTOR)          |       | 49    | 32    |       |       |       |
| Link Speed (mph)           | 30    |       | 30    |       |       | 30    |
| Link Distance (ft)         | 449   |       | 437   |       |       | 431   |
| Travel Time (s)            | 10.2  |       | 9.9   |       |       | 9.8   |
| Peak Hour Factor           | 0.49  | 0.65  | 0.88  | 0.70  | 0.61  | 0.86  |
| Heavy Vehicles (%)         | 5%    | 11%   | 4%    | 3%    | 6%    | 3%    |
| Adj. Flow (vph)            | 243   | 49    | 518   | 130   | 110   | 583   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 243   | 49    | 648   | 0     | 110   | 583   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Right | Left  | Left  |
| Median Width(ft)           | 12    |       | 12    |       |       | 12    |
| Link Offset(ft)            | 0     |       | 0     |       |       | 0     |
| Crosswalk Width(ft)        | 16    |       | 16    |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     |       | 9     | 15    |       |
| Number of Detectors        | 1     | 1     | 2     |       | 1     | 2     |
| Detector Template          | Left  | Right | Thru  |       | Left  | Thru  |
| Leading Detector (ft)      | 20    | 20    | 100   |       | 20    | 100   |
| Trailing Detector (ft)     | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 6     |       | 20    | 6     |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       |       | 94    |       |       | 94    |
| Detector 2 Size(ft)        |       |       | 6     |       |       | 6     |
| Detector 2 Type            |       |       | Cl+Ex |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       |       | 0.0   |       |       | 0.0   |
| Turn Type                  | Prot  | Perm  | NA    |       | Perm  | NA    |
| Protected Phases           | 4     |       | 6     |       |       | 2     |

## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group              | EBL   | EBR   | SET   | SER | NWL   | NWT   |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Permitted Phases        |       | 4     |       |     | 2     |       |
| Detector Phase          | 4     | 4     | 6     |     | 2     | 2     |
| Switch Phase            |       |       |       |     |       |       |
| Minimum Initial (s)     | 5.0   | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Minimum Split (s)       | 22.5  | 22.5  | 24.0  |     | 24.0  | 24.0  |
| Total Split (s)         | 22.5  | 22.5  | 62.5  |     | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% |     | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   |     | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   |     | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |     |       |       |
| Lead-Lag Optimize?      |       |       |       |     |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max |     | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  |     | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     |     | 0     | 0     |
| Act Effect Green (s)    | 15.9  | 15.9  | 59.1  |     | 59.1  | 59.1  |
| Actuated g/C Ratio      | 0.19  | 0.19  | 0.70  |     | 0.70  | 0.70  |
| v/c Ratio               | 0.75  | 0.16  | 0.52  |     | 0.25  | 0.45  |
| Control Delay           | 47.7  | 9.8   | 8.1   |     | 6.2   | 6.3   |
| Queue Delay             | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             | 47.7  | 9.8   | 8.1   |     | 6.2   | 6.3   |
| LOS                     | D     | A     | A     |     | A     | A     |
| Approach Delay          | 41.3  |       | 8.1   |     |       | 6.3   |
| Approach LOS            | D     |       | A     |     |       | A     |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 50th %ile Green (s)     | 17.1  | 17.1  | 57.9  |     | 57.9  | 57.9  |
| 50th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 30th %ile Green (s)     | 14.6  | 14.6  | 60.4  |     | 60.4  | 60.4  |
| 30th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 10th %ile Green (s)     | 10.9  | 10.9  | 64.1  |     | 64.1  | 64.1  |
| 10th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| Stops (vph)             | 109   | 8     | 241   |     | 20    | 153   |
| Fuel Used(gal)          | 2     | 0     | 4     |     | 0     | 3     |
| CO Emissions (g/hr)     | 152   | 15    | 287   |     | 29    | 222   |
| NOx Emissions (g/hr)    | 30    | 3     | 56    |     | 6     | 43    |
| VOC Emissions (g/hr)    | 35    | 4     | 66    |     | 7     | 51    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     |     | 0     | 0     |
| Queue Length 50th (ft)  | 122   | 0     | 140   |     | 16    | 92    |
| Queue Length 95th (ft)  | 96    | 14    | 221   |     | 21    | 145   |
| Internal Link Dist (ft) | 369   |       | 357   |     |       | 351   |
| Turn Bay Length (ft)    | 150   |       |       |     | 400   |       |
| Base Capacity (vph)     | 374   | 355   | 1247  |     | 446   | 1282  |

## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group             | EBL  | EBR  | SET  | SER | NWL  | NWT  |
|------------------------|------|------|------|-----|------|------|
| Starvation Cap Reductn | 0    | 0    | 0    |     | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0    | 0    |     | 0    | 0    |
| Storage Cap Reductn    | 0    | 0    | 0    |     | 0    | 0    |
| Reduced v/c Ratio      | 0.65 | 0.14 | 0.52 |     | 0.25 | 0.45 |

## Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 13.3

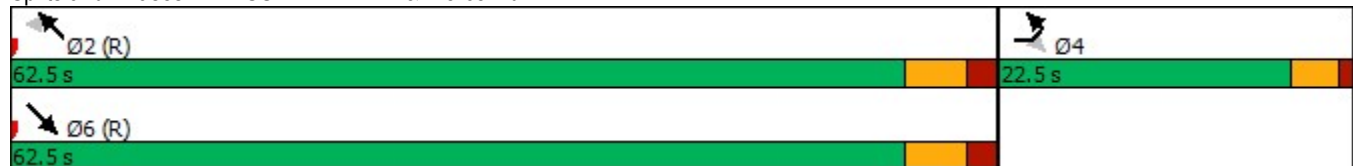
Intersection LOS: B

Intersection Capacity Utilization 53.6%

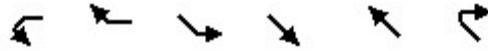
ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: SULLIVAN AVE &amp; Pierce Rd



## 6: SULLIVAN AVE &amp; Collins Lane



| Lane Group                              | WBL                                                                               | WBR   | SEL  | SET                                                                               | NWT                                                                               | NWR   |
|-----------------------------------------|-----------------------------------------------------------------------------------|-------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations                     |  |       |      |  |  |       |
| Traffic Volume (vph)                    | 1                                                                                 | 1     | 1    | 544                                                                               | 524                                                                               | 0     |
| Future Volume (vph)                     | 1                                                                                 | 1     | 1    | 544                                                                               | 524                                                                               | 0     |
| Ideal Flow (vphpl)                      | 1900                                                                              | 1900  | 1900 | 1900                                                                              | 1900                                                                              | 1900  |
| Lane Util. Factor                       | 1.00                                                                              | 1.00  | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  |
| Frt                                     | 0.932                                                                             |       |      |                                                                                   |                                                                                   |       |
| Flt Protected                           | 0.976                                                                             |       |      |                                                                                   |                                                                                   |       |
| Satd. Flow (prot)                       | 1694                                                                              | 0     | 0    | 1863                                                                              | 1863                                                                              | 0     |
| Flt Permitted                           | 0.976                                                                             |       |      |                                                                                   |                                                                                   |       |
| Satd. Flow (perm)                       | 1694                                                                              | 0     | 0    | 1863                                                                              | 1863                                                                              | 0     |
| Link Speed (mph)                        | 30                                                                                |       |      | 30                                                                                | 30                                                                                |       |
| Link Distance (ft)                      | 264                                                                               |       |      | 431                                                                               | 389                                                                               |       |
| Travel Time (s)                         | 6.0                                                                               |       |      | 9.8                                                                               | 8.8                                                                               |       |
| Peak Hour Factor                        | 0.92                                                                              | 0.92  | 0.92 | 0.92                                                                              | 0.92                                                                              | 0.92  |
| Adj. Flow (vph)                         | 1                                                                                 | 1     | 1    | 591                                                                               | 570                                                                               | 0     |
| Shared Lane Traffic (%)                 |                                                                                   |       |      |                                                                                   |                                                                                   |       |
| Lane Group Flow (vph)                   | 2                                                                                 | 0     | 0    | 592                                                                               | 570                                                                               | 0     |
| Enter Blocked Intersection              | No                                                                                | No    | No   | No                                                                                | No                                                                                | No    |
| Lane Alignment                          | Left                                                                              | Right | Left | Left                                                                              | Left                                                                              | Right |
| Median Width(ft)                        | 12                                                                                |       |      | 12                                                                                | 12                                                                                |       |
| Link Offset(ft)                         | 0                                                                                 |       |      | 0                                                                                 | 0                                                                                 |       |
| Crosswalk Width(ft)                     | 16                                                                                |       |      | 16                                                                                | 16                                                                                |       |
| Two way Left Turn Lane                  |                                                                                   |       |      |                                                                                   |                                                                                   |       |
| Headway Factor                          | 1.00                                                                              | 1.00  | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  |
| Turning Speed (mph)                     | 15                                                                                | 9     | 15   |                                                                                   |                                                                                   | 9     |
| Sign Control                            | Stop                                                                              |       |      | Free                                                                              | Free                                                                              |       |
| Intersection Summary                    |                                                                                   |       |      |                                                                                   |                                                                                   |       |
| Area Type:                              | Other                                                                             |       |      |                                                                                   |                                                                                   |       |
| Control Type:                           | Unsignalized                                                                      |       |      |                                                                                   |                                                                                   |       |
| Intersection Capacity Utilization 39.4% |                                                                                   |       |      | ICU Level of Service A                                                            |                                                                                   |       |
| Analysis Period (min) 15                |                                                                                   |       |      |                                                                                   |                                                                                   |       |

## 1: SULLIVAN AVE &amp; Sand Hill Road

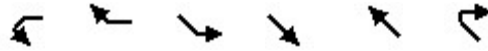
|                            |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                 | WBL                                                                               | WBR                                                                               | SEL                                                                               | SET                                                                               | NWT                                                                               | NWR                                                                               |
| Lane Configurations        |  |  |  |  |  |  |
| Traffic Volume (vph)       | 125                                                                               | 99                                                                                | 182                                                                               | 613                                                                               | 542                                                                               | 122                                                                               |
| Future Volume (vph)        | 125                                                                               | 99                                                                                | 182                                                                               | 613                                                                               | 542                                                                               | 122                                                                               |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)        | 0                                                                                 | 276                                                                               | 350                                                                               |                                                                                   |                                                                                   | 330                                                                               |
| Storage Lanes              | 1                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |
| Taper Length (ft)          | 25                                                                                |                                                                                   | 25                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                        |                                                                                   | 0.850                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |
| Flt Protected              | 0.950                                                                             |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)          | 1719                                                                              | 1538                                                                              | 1687                                                                              | 1827                                                                              | 1845                                                                              | 1538                                                                              |
| Flt Permitted              | 0.950                                                                             |                                                                                   | 0.403                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)          | 1719                                                                              | 1538                                                                              | 716                                                                               | 1827                                                                              | 1845                                                                              | 1538                                                                              |
| Right Turn on Red          |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)          |                                                                                   | 122                                                                               |                                                                                   |                                                                                   |                                                                                   | 200                                                                               |
| Link Speed (mph)           | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   |
| Link Distance (ft)         | 567                                                                               |                                                                                   |                                                                                   | 389                                                                               | 584                                                                               |                                                                                   |
| Travel Time (s)            | 12.9                                                                              |                                                                                   |                                                                                   | 8.8                                                                               | 13.3                                                                              |                                                                                   |
| Peak Hour Factor           | 0.65                                                                              | 0.81                                                                              | 0.59                                                                              | 0.86                                                                              | 0.93                                                                              | 0.61                                                                              |
| Heavy Vehicles (%)         | 5%                                                                                | 5%                                                                                | 7%                                                                                | 4%                                                                                | 3%                                                                                | 5%                                                                                |
| Adj. Flow (vph)            | 192                                                                               | 122                                                                               | 308                                                                               | 713                                                                               | 583                                                                               | 200                                                                               |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)      | 192                                                                               | 122                                                                               | 308                                                                               | 713                                                                               | 583                                                                               | 200                                                                               |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment             | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(ft)           | 12                                                                                |                                                                                   |                                                                                   | 12                                                                                | 12                                                                                |                                                                                   |
| Link Offset(ft)            | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   |
| Crosswalk Width(ft)        | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                | 16                                                                                |                                                                                   |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (mph)        | 15                                                                                | 9                                                                                 | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 |
| Number of Detectors        | 1                                                                                 | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 |
| Detector Template          | Left                                                                              | Right                                                                             | Left                                                                              | Thru                                                                              | Thru                                                                              | Right                                                                             |
| Leading Detector (ft)      | 20                                                                                | 20                                                                                | 20                                                                                | 100                                                                               | 100                                                                               | 20                                                                                |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Size(ft)        | 20                                                                                | 20                                                                                | 20                                                                                | 6                                                                                 | 6                                                                                 | 20                                                                                |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 2 Position(ft)    |                                                                                   |                                                                                   |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |
| Detector 2 Size(ft)        |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |
| Detector 2 Type            |                                                                                   |                                                                                   |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 2 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)      |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Turn Type                  | Prot                                                                              | Perm                                                                              | Perm                                                                              | NA                                                                                | NA                                                                                | Perm                                                                              |
| Protected Phases           | 8                                                                                 |                                                                                   |                                                                                   | 6                                                                                 | 2                                                                                 |                                                                                   |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group              | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Permitted Phases        |       | 8     | 6     |       |       | 2     |
| Detector Phase          | 8     | 8     | 6     | 6     | 2     | 2     |
| Switch Phase            |       |       |       |       |       |       |
| Minimum Initial (s)     | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)       | 22.5  | 22.5  | 24.0  | 24.0  | 24.0  | 24.0  |
| Total Split (s)         | 22.5  | 22.5  | 62.5  | 62.5  | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% | 73.5% | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |       |       |       |
| Lead-Lag Optimize?      |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max | C-Max | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     | 0     | 0     | 0     |
| Act Effect Green (s)    | 14.3  | 14.3  | 60.7  | 60.7  | 60.7  | 60.7  |
| Actuated g/C Ratio      | 0.17  | 0.17  | 0.71  | 0.71  | 0.71  | 0.71  |
| v/c Ratio               | 0.66  | 0.34  | 0.60  | 0.55  | 0.44  | 0.17  |
| Control Delay           | 43.9  | 8.5   | 10.8  | 6.9   | 6.9   | 1.2   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 43.9  | 8.5   | 10.8  | 6.9   | 6.9   | 1.2   |
| LOS                     | D     | A     | B     | A     | A     | A     |
| Approach Delay          | 30.2  |       |       | 8.1   | 5.5   |       |
| Approach LOS            | C     |       |       | A     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 70th %ile Green (s)     | 16.9  | 16.9  | 58.1  | 58.1  | 58.1  | 58.1  |
| 70th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 50th %ile Green (s)     | 14.7  | 14.7  | 60.3  | 60.3  | 60.3  | 60.3  |
| 50th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 30th %ile Green (s)     | 12.4  | 12.4  | 62.6  | 62.6  | 62.6  | 62.6  |
| 30th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 10th %ile Green (s)     | 9.1   | 9.1   | 65.9  | 65.9  | 65.9  | 65.9  |
| 10th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| Stops (vph)             | 113   | 17    | 66    | 186   | 218   | 7     |
| Fuel Used(gal)          | 2     | 1     | 1     | 4     | 4     | 1     |
| CO Emissions (g/hr)     | 160   | 49    | 92    | 262   | 310   | 44    |
| NOx Emissions (g/hr)    | 31    | 10    | 18    | 51    | 60    | 8     |
| VOC Emissions (g/hr)    | 37    | 11    | 21    | 61    | 72    | 10    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Queue Length 50th (ft)  | 97    | 0     | 47    | 107   | 111   | 0     |
| Queue Length 95th (ft)  | 107   | 32    | 64    | 193   | 201   | 2     |
| Internal Link Dist (ft) | 487   |       |       | 309   | 504   |       |
| Turn Bay Length (ft)    |       | 276   | 350   |       |       | 330   |
| Base Capacity (vph)     | 374   | 430   | 511   | 1304  | 1317  | 1155  |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group             | WBL  | WBR  | SEL  | SET  | NWT  | NWR  |
|------------------------|------|------|------|------|------|------|
| Starvation Cap Reductn | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio      | 0.51 | 0.28 | 0.60 | 0.55 | 0.44 | 0.17 |

## Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWT and 6:SETL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 10.4

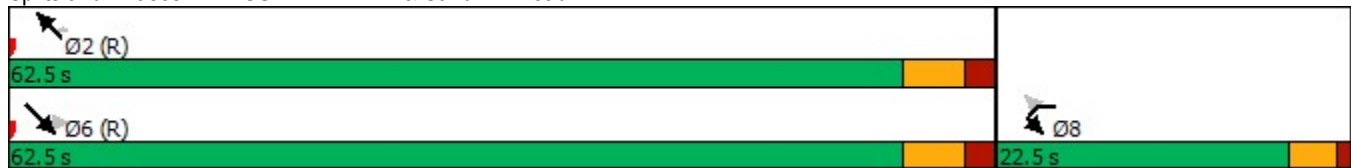
Intersection LOS: B

Intersection Capacity Utilization 58.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SULLIVAN AVE &amp; Sand Hill Road



## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group                 | EBL   | EBR   | SBL   | SBR   | NWL   | NWR   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 138   | 75    | 689   | 66    | 54    | 674   |
| Future Volume (vph)        | 138   | 75    | 689   | 66    | 54    | 674   |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 150   | 0     | 0     | 0     | 400   | 0     |
| Storage Lanes              | 1     | 1     | 1     | 0     | 1     | 1     |
| Taper Length (ft)          | 25    |       | 25    |       | 25    |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 | 0.986 |       |       | 0.850 |
| Flt Protected              | 0.950 |       | 0.957 |       | 0.950 |       |
| Satd. Flow (prot)          | 1719  | 1455  | 1726  | 0     | 1703  | 1568  |
| Flt Permitted              | 0.950 |       | 0.957 |       | 0.224 |       |
| Satd. Flow (perm)          | 1719  | 1455  | 1726  | 0     | 402   | 1568  |
| Right Turn on Red          |       | Yes   |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |       | 115   | 15    |       |       | 200   |
| Link Speed (mph)           | 30    |       | 30    |       | 30    |       |
| Link Distance (ft)         | 449   |       | 426   |       | 431   |       |
| Travel Time (s)            | 10.2  |       | 9.7   |       | 9.8   |       |
| Peak Hour Factor           | 0.49  | 0.65  | 0.88  | 0.70  | 0.61  | 0.86  |
| Heavy Vehicles (%)         | 5%    | 11%   | 4%    | 3%    | 6%    | 3%    |
| Adj. Flow (vph)            | 282   | 115   | 783   | 94    | 89    | 784   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 282   | 115   | 877   | 0     | 89    | 784   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Right | Left  | Right |
| Median Width(ft)           | 12    |       | 12    |       | 12    |       |
| Link Offset(ft)            | 0     |       | 0     |       | 0     |       |
| Crosswalk Width(ft)        | 16    |       | 16    |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15    | 9     | 15    | 9     |
| Number of Detectors        | 1     | 1     | 1     |       | 1     | 1     |
| Detector Template          | Left  | Right | Left  |       | Left  | Right |
| Leading Detector (ft)      | 20    | 20    | 20    |       | 20    | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 20    |       | 20    | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Turn Type                  | Prot  | Perm  | Prot  |       | Perm  | Prot  |
| Protected Phases           | 4     |       | 6     |       |       | 2     |
| Permitted Phases           |       | 4     |       |       | 2     |       |
| Detector Phase             | 4     | 4     | 6     |       | 2     | 2     |
| Switch Phase               |       |       |       |       |       |       |
| Minimum Initial (s)        | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   |
| Minimum Split (s)          | 22.5  | 22.5  | 24.0  |       | 24.0  | 24.0  |

## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group              | EBL   | EBR   | SBL   | SBR | NWL   | NWR   |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Total Split (s)         | 22.5  | 22.5  | 62.5  |     | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% |     | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   |     | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   |     | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |     |       |       |
| Lead-Lag Optimize?      |       |       |       |     |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max |     | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  |     | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     |     | 0     | 0     |
| Act Effect Green (s)    | 17.0  | 17.0  | 58.0  |     | 58.0  | 58.0  |
| Actuated g/C Ratio      | 0.20  | 0.20  | 0.68  |     | 0.68  | 0.68  |
| v/c Ratio               | 0.82  | 0.30  | 0.74  |     | 0.32  | 0.69  |
| Control Delay           | 52.4  | 8.0   | 14.0  |     | 8.4   | 7.9   |
| Queue Delay             | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             | 52.4  | 8.0   | 14.0  |     | 8.4   | 7.9   |
| LOS                     | D     | A     | B     |     | A     | A     |
| Approach Delay          | 39.6  |       | 14.0  |     | 8.0   |       |
| Approach LOS            | D     |       | B     |     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 50th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 50th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 30th %ile Green (s)     | 16.8  | 16.8  | 58.2  |     | 58.2  | 58.2  |
| 30th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 10th %ile Green (s)     | 12.9  | 12.9  | 62.1  |     | 62.1  | 62.1  |
| 10th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| Stops (vph)             | 124   | 14    | 476   |     | 16    | 195   |
| Fuel Used(gal)          | 3     | 0     | 7     |     | 0     | 4     |
| CO Emissions (g/hr)     | 185   | 32    | 509   |     | 25    | 310   |
| NOx Emissions (g/hr)    | 36    | 6     | 99    |     | 5     | 60    |
| VOC Emissions (g/hr)    | 43    | 7     | 118   |     | 6     | 72    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     |     | 0     | 0     |
| Queue Length 50th (ft)  | 142   | 0     | 273   |     | 13    | 83    |
| Queue Length 95th (ft)  | 109   | 15    | 413   |     | 20    | 131   |
| Internal Link Dist (ft) | 369   |       | 346   |     | 351   |       |
| Turn Bay Length (ft)    | 150   |       |       |     | 400   |       |
| Base Capacity (vph)     | 374   | 406   | 1181  |     | 274   | 1132  |
| Starvation Cap Reductn  | 0     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       | 0.75  | 0.28  | 0.74  |     | 0.32  | 0.69  |

**4: SULLIVAN AVE & Pierce Rd****Intersection Summary**

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWL and 6:SBL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.3

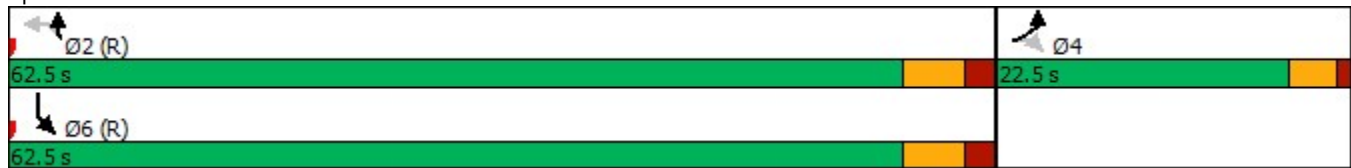
Intersection LOS: B

Intersection Capacity Utilization 67.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: SULLIVAN AVE &amp; Pierce Rd



## 6: SULLIVAN AVE &amp; Collins Lane

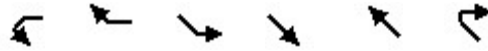
|                                         |  |  |  |  |  |  |
|-----------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                              | WBL                                                                               | WBR                                                                               | SEL                                                                               | SET                                                                               | NWT                                                                               | NWR                                                                               |
| Lane Configurations                     |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)                    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 710                                                                               | 769                                                                               | 0                                                                                 |
| Future Volume (vph)                     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 710                                                                               | 769                                                                               | 0                                                                                 |
| Ideal Flow (vphpl)                      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Lane Util. Factor                       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flt Protected                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)                       | 1863                                                                              | 0                                                                                 | 0                                                                                 | 1863                                                                              | 1863                                                                              | 0                                                                                 |
| Flt Permitted                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)                       | 1863                                                                              | 0                                                                                 | 0                                                                                 | 1863                                                                              | 1863                                                                              | 0                                                                                 |
| Link Speed (mph)                        | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   |
| Link Distance (ft)                      | 264                                                                               |                                                                                   |                                                                                   | 431                                                                               | 389                                                                               |                                                                                   |
| Travel Time (s)                         | 6.0                                                                               |                                                                                   |                                                                                   | 9.8                                                                               | 8.8                                                                               |                                                                                   |
| Peak Hour Factor                        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Adj. Flow (vph)                         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 772                                                                               | 836                                                                               | 0                                                                                 |
| Shared Lane Traffic (%)                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 772                                                                               | 836                                                                               | 0                                                                                 |
| Enter Blocked Intersection              | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                          | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(ft)                        | 12                                                                                |                                                                                   |                                                                                   | 12                                                                                | 12                                                                                |                                                                                   |
| Link Offset(ft)                         | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   |
| Crosswalk Width(ft)                     | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                | 16                                                                                |                                                                                   |
| Two way Left Turn Lane                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (mph)                     | 15                                                                                | 9                                                                                 | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 |
| Sign Control                            | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Intersection Summary                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                              | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type: Unsignalized              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization 43.8% |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service A                                                            |                                                                                   |                                                                                   |
| Analysis Period (min) 15                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |



# **APPENDIX D**

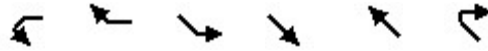
## **2025 Build Conditions Capacity Analysis Reports**

## 1: SULLIVAN AVE &amp; Sand Hill Road



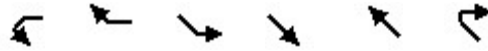
| Lane Group                 | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 169   | 151   | 82    | 432   | 412   | 59    |
| Future Volume (vph)        | 169   | 151   | 82    | 432   | 412   | 59    |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 0     | 276   | 350   |       |       | 330   |
| Storage Lanes              | 1     | 1     | 1     |       |       | 1     |
| Taper Length (ft)          | 25    |       | 25    |       |       |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       | 0.950 |       |       |       |
| Satd. Flow (prot)          | 1719  | 1538  | 1687  | 1827  | 1845  | 1538  |
| Flt Permitted              | 0.950 |       | 0.483 |       |       |       |
| Satd. Flow (perm)          | 1719  | 1538  | 858   | 1827  | 1845  | 1538  |
| Right Turn on Red          |       | Yes   |       |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 186   |       |       |       | 97    |
| Link Speed (mph)           | 30    |       |       | 30    | 30    |       |
| Link Distance (ft)         | 567   |       |       | 389   | 584   |       |
| Travel Time (s)            | 12.9  |       |       | 8.8   | 13.3  |       |
| Peak Hour Factor           | 0.65  | 0.81  | 0.59  | 0.86  | 0.93  | 0.61  |
| Heavy Vehicles (%)         | 5%    | 5%    | 7%    | 4%    | 3%    | 5%    |
| Adj. Flow (vph)            | 260   | 186   | 139   | 502   | 443   | 97    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 260   | 186   | 139   | 502   | 443   | 97    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Left  | Left  | Right |
| Median Width(ft)           | 12    |       |       | 12    | 12    |       |
| Link Offset(ft)            | 0     |       |       | 0     | 0     |       |
| Crosswalk Width(ft)        | 16    |       |       | 16    | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15    |       |       | 9     |
| Number of Detectors        | 1     | 1     | 1     | 2     | 2     | 1     |
| Detector Template          | Left  | Right | Left  | Thru  | Thru  | Right |
| Leading Detector (ft)      | 20    | 20    | 20    | 100   | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 20    | 6     | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       |       |       | 94    | 94    |       |
| Detector 2 Size(ft)        |       |       |       | 6     | 6     |       |
| Detector 2 Type            |       |       |       | Cl+Ex | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       |       |       | 0.0   | 0.0   |       |
| Turn Type                  | Prot  | Perm  | Perm  | NA    | NA    | Perm  |
| Protected Phases           | 8     |       |       | 6     | 2     |       |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group              | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Permitted Phases        |       | 8     | 6     |       |       | 2     |
| Detector Phase          | 8     | 8     | 6     | 6     | 2     | 2     |
| Switch Phase            |       |       |       |       |       |       |
| Minimum Initial (s)     | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)       | 22.5  | 22.5  | 24.0  | 24.0  | 24.0  | 24.0  |
| Total Split (s)         | 22.5  | 22.5  | 62.5  | 62.5  | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% | 73.5% | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |       |       |       |
| Lead-Lag Optimize?      |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max | C-Max | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     | 0     | 0     | 0     |
| Act Effect Green (s)    | 16.5  | 16.5  | 58.5  | 58.5  | 58.5  | 58.5  |
| Actuated g/C Ratio      | 0.19  | 0.19  | 0.69  | 0.69  | 0.69  | 0.69  |
| v/c Ratio               | 0.78  | 0.42  | 0.24  | 0.40  | 0.35  | 0.09  |
| Control Delay           | 49.4  | 7.7   | 5.5   | 5.7   | 6.7   | 1.4   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 49.4  | 7.7   | 5.5   | 5.7   | 6.7   | 1.4   |
| LOS                     | D     | A     | A     | A     | A     | A     |
| Approach Delay          | 32.0  |       |       | 5.6   | 5.7   |       |
| Approach LOS            | C     |       |       | A     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 50th %ile Green (s)     | 18.1  | 18.1  | 56.9  | 56.9  | 56.9  | 56.9  |
| 50th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 30th %ile Green (s)     | 15.5  | 15.5  | 59.5  | 59.5  | 59.5  | 59.5  |
| 30th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 10th %ile Green (s)     | 11.7  | 11.7  | 63.3  | 63.3  | 63.3  | 63.3  |
| 10th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| Stops (vph)             | 153   | 22    | 21    | 112   | 161   | 4     |
| Fuel Used(gal)          | 3     | 1     | 0     | 2     | 3     | 0     |
| CO Emissions (g/hr)     | 230   | 72    | 32    | 170   | 233   | 21    |
| NOx Emissions (g/hr)    | 45    | 14    | 6     | 33    | 45    | 4     |
| VOC Emissions (g/hr)    | 53    | 17    | 7     | 39    | 54    | 5     |
| Dilemma Vehicles (#)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Queue Length 50th (ft)  | 130   | 0     | 19    | 72    | 89    | 0     |
| Queue Length 95th (ft)  | 141   | 37    | 23    | 102   | 139   | 4     |
| Internal Link Dist (ft) | 487   |       |       | 309   | 504   |       |
| Turn Bay Length (ft)    |       | 276   | 350   |       |       | 330   |
| Base Capacity (vph)     | 374   | 480   | 590   | 1258  | 1270  | 1089  |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group             | WBL  | WBR  | SEL  | SET  | NWT  | NWR  |
|------------------------|------|------|------|------|------|------|
| Starvation Cap Reductn | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio      | 0.70 | 0.39 | 0.24 | 0.40 | 0.35 | 0.09 |

## Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWT and 6:SETL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 12.9

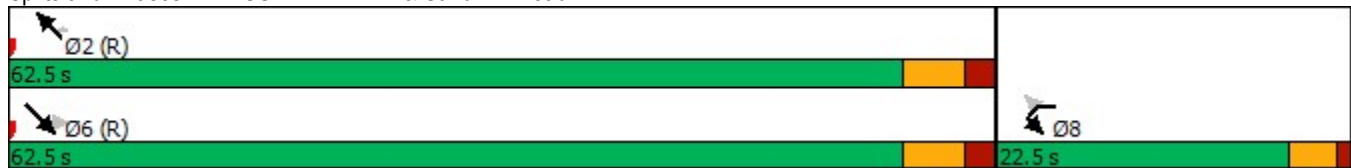
Intersection LOS: B

Intersection Capacity Utilization 48.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: SULLIVAN AVE &amp; Sand Hill Road



## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group                 | EBL   | EBR   | SET   | SER   | NWL   | NWT   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 119   | 33    | 459   | 91    | 68    | 502   |
| Future Volume (vph)        | 119   | 33    | 459   | 91    | 68    | 502   |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 150   | 0     |       | 0     | 400   |       |
| Storage Lanes              | 1     | 1     |       | 0     | 1     |       |
| Taper Length (ft)          | 25    |       |       |       | 25    |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 | 0.973 |       |       |       |
| Flt Protected              | 0.950 |       |       |       | 0.950 |       |
| Satd. Flow (prot)          | 1719  | 1455  | 1781  | 0     | 1703  | 1845  |
| Flt Permitted              | 0.950 |       |       |       | 0.356 |       |
| Satd. Flow (perm)          | 1719  | 1455  | 1781  | 0     | 638   | 1845  |
| Right Turn on Red          |       | Yes   |       | Yes   |       |       |
| Satd. Flow (RTOR)          |       | 51    | 31    |       |       |       |
| Link Speed (mph)           | 30    |       | 30    |       |       | 30    |
| Link Distance (ft)         | 449   |       | 437   |       |       | 431   |
| Travel Time (s)            | 10.2  |       | 9.9   |       |       | 9.8   |
| Peak Hour Factor           | 0.49  | 0.65  | 0.88  | 0.70  | 0.61  | 0.86  |
| Heavy Vehicles (%)         | 5%    | 11%   | 4%    | 3%    | 6%    | 3%    |
| Adj. Flow (vph)            | 243   | 51    | 522   | 130   | 111   | 584   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 243   | 51    | 652   | 0     | 111   | 584   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Right | Left  | Left  |
| Median Width(ft)           | 12    |       | 12    |       |       | 12    |
| Link Offset(ft)            | 0     |       | 0     |       |       | 0     |
| Crosswalk Width(ft)        | 16    |       | 16    |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     |       | 9     | 15    |       |
| Number of Detectors        | 1     | 1     | 2     |       | 1     | 2     |
| Detector Template          | Left  | Right | Thru  |       | Left  | Thru  |
| Leading Detector (ft)      | 20    | 20    | 100   |       | 20    | 100   |
| Trailing Detector (ft)     | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 6     |       | 20    | 6     |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       |       | 94    |       |       | 94    |
| Detector 2 Size(ft)        |       |       | 6     |       |       | 6     |
| Detector 2 Type            |       |       | Cl+Ex |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       |       | 0.0   |       |       | 0.0   |
| Turn Type                  | Prot  | Perm  | NA    |       | Perm  | NA    |
| Protected Phases           | 4     |       | 6     |       |       | 2     |

## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group              | EBL   | EBR   | SET   | SER | NWL   | NWT   |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Permitted Phases        |       | 4     |       |     | 2     |       |
| Detector Phase          | 4     | 4     | 6     |     | 2     | 2     |
| Switch Phase            |       |       |       |     |       |       |
| Minimum Initial (s)     | 5.0   | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Minimum Split (s)       | 22.5  | 22.5  | 24.0  |     | 24.0  | 24.0  |
| Total Split (s)         | 22.5  | 22.5  | 62.5  |     | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% |     | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   |     | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   |     | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |     |       |       |
| Lead-Lag Optimize?      |       |       |       |     |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max |     | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  |     | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     |     | 0     | 0     |
| Act Effect Green (s)    | 15.9  | 15.9  | 59.1  |     | 59.1  | 59.1  |
| Actuated g/C Ratio      | 0.19  | 0.19  | 0.70  |     | 0.70  | 0.70  |
| v/c Ratio               | 0.75  | 0.16  | 0.52  |     | 0.25  | 0.46  |
| Control Delay           | 47.7  | 9.7   | 8.2   |     | 6.3   | 6.3   |
| Queue Delay             | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             | 47.7  | 9.7   | 8.2   |     | 6.3   | 6.3   |
| LOS                     | D     | A     | A     |     | A     | A     |
| Approach Delay          | 41.1  |       | 8.2   |     |       | 6.3   |
| Approach LOS            | D     |       | A     |     |       | A     |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 50th %ile Green (s)     | 17.1  | 17.1  | 57.9  |     | 57.9  | 57.9  |
| 50th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 30th %ile Green (s)     | 14.6  | 14.6  | 60.4  |     | 60.4  | 60.4  |
| 30th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 10th %ile Green (s)     | 10.9  | 10.9  | 64.1  |     | 64.1  | 64.1  |
| 10th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| Stops (vph)             | 109   | 8     | 243   |     | 21    | 153   |
| Fuel Used(gal)          | 2     | 0     | 4     |     | 0     | 3     |
| CO Emissions (g/hr)     | 152   | 16    | 289   |     | 30    | 222   |
| NOx Emissions (g/hr)    | 30    | 3     | 56    |     | 6     | 43    |
| VOC Emissions (g/hr)    | 35    | 4     | 67    |     | 7     | 51    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     |     | 0     | 0     |
| Queue Length 50th (ft)  | 122   | 0     | 142   |     | 16    | 92    |
| Queue Length 95th (ft)  | 96    | 14    | 223   |     | 22    | 146   |
| Internal Link Dist (ft) | 369   |       | 357   |     |       | 351   |
| Turn Bay Length (ft)    | 150   |       |       |     | 400   |       |
| Base Capacity (vph)     | 374   | 356   | 1247  |     | 443   | 1282  |

## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group             | EBL  | EBR  | SET  | SER | NWL  | NWT  |
|------------------------|------|------|------|-----|------|------|
| Starvation Cap Reductn | 0    | 0    | 0    |     | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0    | 0    |     | 0    | 0    |
| Storage Cap Reductn    | 0    | 0    | 0    |     | 0    | 0    |
| Reduced v/c Ratio      | 0.65 | 0.14 | 0.52 |     | 0.25 | 0.46 |

## Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 13.3

Intersection LOS: B

Intersection Capacity Utilization 53.8%

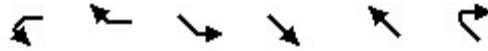
ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: SULLIVAN AVE &amp; Pierce Rd

|                                                                                          |                                                                                        |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  Ø2 (R) |  Ø4 |
| 62.5 s                                                                                   | 22.5 s                                                                                 |
|  Ø6 (R) |                                                                                        |
| 62.5 s                                                                                   |                                                                                        |

## 6: SULLIVAN AVE &amp; Collins Lane



| Lane Group                 | WBL   | WBR   | SEL  | SET  | NWT   | NWR   |
|----------------------------|-------|-------|------|------|-------|-------|
| Lane Configurations        |       |       |      |      |       |       |
| Traffic Volume (vph)       | 5     | 3     | 5    | 544  | 524   | 5     |
| Future Volume (vph)        | 5     | 3     | 5    | 544  | 524   | 5     |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900 | 1900 | 1900  | 1900  |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  |
| Frt                        | 0.949 |       |      |      | 0.999 |       |
| Flt Protected              | 0.970 |       |      |      |       |       |
| Satd. Flow (prot)          | 1715  | 0     | 0    | 1863 | 1861  | 0     |
| Flt Permitted              | 0.970 |       |      |      |       |       |
| Satd. Flow (perm)          | 1715  | 0     | 0    | 1863 | 1861  | 0     |
| Link Speed (mph)           | 30    |       |      | 30   | 30    |       |
| Link Distance (ft)         | 264   |       |      | 431  | 389   |       |
| Travel Time (s)            | 6.0   |       |      | 9.8  | 8.8   |       |
| Peak Hour Factor           | 0.92  | 0.92  | 0.92 | 0.92 | 0.92  | 0.92  |
| Adj. Flow (vph)            | 5     | 3     | 5    | 591  | 570   | 5     |
| Shared Lane Traffic (%)    |       |       |      |      |       |       |
| Lane Group Flow (vph)      | 8     | 0     | 0    | 596  | 575   | 0     |
| Enter Blocked Intersection | No    | No    | No   | No   | No    | No    |
| Lane Alignment             | Left  | Right | Left | Left | Left  | Right |
| Median Width(ft)           | 12    |       |      | 12   | 12    |       |
| Link Offset(ft)            | 0     |       |      | 0    | 0     |       |
| Crosswalk Width(ft)        | 16    |       |      | 16   | 16    |       |
| Two way Left Turn Lane     |       |       |      |      |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15   |      |       | 9     |
| Sign Control               | Stop  |       |      | Free | Free  |       |

## Intersection Summary

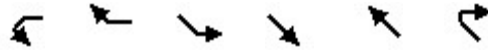
Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 42.6% ICU Level of Service A

Analysis Period (min) 15

## 1: SULLIVAN AVE &amp; Sand Hill Road



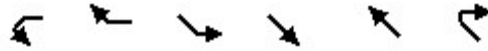
| Lane Group                 | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 125   | 101   | 184   | 616   | 544   | 122   |
| Future Volume (vph)        | 125   | 101   | 184   | 616   | 544   | 122   |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 0     | 276   | 350   |       |       | 330   |
| Storage Lanes              | 1     | 1     | 1     |       |       | 1     |
| Taper Length (ft)          | 25    |       | 25    |       |       |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       | 0.950 |       |       |       |
| Satd. Flow (prot)          | 1719  | 1538  | 1687  | 1827  | 1845  | 1538  |
| Flt Permitted              | 0.950 |       | 0.402 |       |       |       |
| Satd. Flow (perm)          | 1719  | 1538  | 714   | 1827  | 1845  | 1538  |
| Right Turn on Red          |       | Yes   |       |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 125   |       |       |       | 200   |
| Link Speed (mph)           | 30    |       |       | 30    | 30    |       |
| Link Distance (ft)         | 567   |       |       | 389   | 584   |       |
| Travel Time (s)            | 12.9  |       |       | 8.8   | 13.3  |       |
| Peak Hour Factor           | 0.65  | 0.81  | 0.59  | 0.86  | 0.93  | 0.61  |
| Heavy Vehicles (%)         | 5%    | 5%    | 7%    | 4%    | 3%    | 5%    |
| Adj. Flow (vph)            | 192   | 125   | 312   | 716   | 585   | 200   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 192   | 125   | 312   | 716   | 585   | 200   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Left  | Left  | Right |
| Median Width(ft)           | 12    |       |       | 12    | 12    |       |
| Link Offset(ft)            | 0     |       |       | 0     | 0     |       |
| Crosswalk Width(ft)        | 16    |       |       | 16    | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15    |       |       | 9     |
| Number of Detectors        | 1     | 1     | 1     | 2     | 2     | 1     |
| Detector Template          | Left  | Right | Left  | Thru  | Thru  | Right |
| Leading Detector (ft)      | 20    | 20    | 20    | 100   | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 20    | 6     | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       |       |       | 94    | 94    |       |
| Detector 2 Size(ft)        |       |       |       | 6     | 6     |       |
| Detector 2 Type            |       |       |       | Cl+Ex | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       |       |       | 0.0   | 0.0   |       |
| Turn Type                  | Prot  | Perm  | Perm  | NA    | NA    | Perm  |
| Protected Phases           | 8     |       |       | 6     | 2     |       |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group              | WBL   | WBR   | SEL   | SET   | NWT   | NWR   |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Permitted Phases        |       | 8     | 6     |       |       | 2     |
| Detector Phase          | 8     | 8     | 6     | 6     | 2     | 2     |
| Switch Phase            |       |       |       |       |       |       |
| Minimum Initial (s)     | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)       | 22.5  | 22.5  | 24.0  | 24.0  | 24.0  | 24.0  |
| Total Split (s)         | 22.5  | 22.5  | 62.5  | 62.5  | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% | 73.5% | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |       |       |       |
| Lead-Lag Optimize?      |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max | C-Max | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     | 0     | 0     | 0     |
| Act Effect Green (s)    | 14.3  | 14.3  | 60.7  | 60.7  | 60.7  | 60.7  |
| Actuated g/C Ratio      | 0.17  | 0.17  | 0.71  | 0.71  | 0.71  | 0.71  |
| v/c Ratio               | 0.66  | 0.34  | 0.61  | 0.55  | 0.44  | 0.17  |
| Control Delay           | 43.9  | 8.4   | 11.1  | 6.9   | 6.9   | 1.2   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 43.9  | 8.4   | 11.1  | 6.9   | 6.9   | 1.2   |
| LOS                     | D     | A     | B     | A     | A     | A     |
| Approach Delay          | 29.9  |       |       | 8.2   | 5.5   |       |
| Approach LOS            | C     |       |       | A     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  | 56.5  | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord | Coord | Coord | Coord |
| 70th %ile Green (s)     | 16.9  | 16.9  | 58.1  | 58.1  | 58.1  | 58.1  |
| 70th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 50th %ile Green (s)     | 14.7  | 14.7  | 60.3  | 60.3  | 60.3  | 60.3  |
| 50th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 30th %ile Green (s)     | 12.4  | 12.4  | 62.6  | 62.6  | 62.6  | 62.6  |
| 30th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| 10th %ile Green (s)     | 9.1   | 9.1   | 65.9  | 65.9  | 65.9  | 65.9  |
| 10th %ile Term Code     | Gap   | Gap   | Coord | Coord | Coord | Coord |
| Stops (vph)             | 113   | 17    | 68    | 188   | 219   | 7     |
| Fuel Used(gal)          | 2     | 1     | 1     | 4     | 4     | 1     |
| CO Emissions (g/hr)     | 160   | 50    | 94    | 264   | 312   | 44    |
| NOx Emissions (g/hr)    | 31    | 10    | 18    | 51    | 61    | 8     |
| VOC Emissions (g/hr)    | 37    | 12    | 22    | 61    | 72    | 10    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     | 0     | 0     | 0     |
| Queue Length 50th (ft)  | 97    | 0     | 48    | 108   | 111   | 0     |
| Queue Length 95th (ft)  | 107   | 32    | 65    | 194   | 202   | 2     |
| Internal Link Dist (ft) | 487   |       |       | 309   | 504   |       |
| Turn Bay Length (ft)    |       | 276   | 350   |       |       | 330   |
| Base Capacity (vph)     | 374   | 432   | 509   | 1304  | 1317  | 1155  |

## 1: SULLIVAN AVE &amp; Sand Hill Road



| Lane Group             | WBL  | WBR  | SEL  | SET  | NWT  | NWR  |
|------------------------|------|------|------|------|------|------|
| Starvation Cap Reductn | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio      | 0.51 | 0.29 | 0.61 | 0.55 | 0.44 | 0.17 |

## Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWT and 6:SETL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 10.4

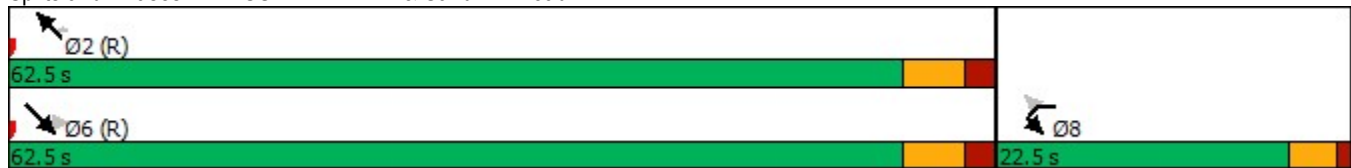
Intersection LOS: B

Intersection Capacity Utilization 59.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SULLIVAN AVE &amp; Sand Hill Road



## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group                 | EBL   | EBR   | SBL   | SBR   | NWL   | NWR   |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |
| Traffic Volume (vph)       | 138   | 76    | 691   | 66    | 56    | 677   |
| Future Volume (vph)        | 138   | 76    | 691   | 66    | 56    | 677   |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 150   | 0     | 0     | 0     | 400   | 0     |
| Storage Lanes              | 1     | 1     | 1     | 0     | 1     | 1     |
| Taper Length (ft)          | 25    |       | 25    |       | 25    |       |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.850 | 0.986 |       |       | 0.850 |
| Flt Protected              | 0.950 |       | 0.957 |       | 0.950 |       |
| Satd. Flow (prot)          | 1719  | 1455  | 1726  | 0     | 1703  | 1568  |
| Flt Permitted              | 0.950 |       | 0.957 |       | 0.222 |       |
| Satd. Flow (perm)          | 1719  | 1455  | 1726  | 0     | 398   | 1568  |
| Right Turn on Red          |       | Yes   |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |       | 117   | 15    |       |       | 200   |
| Link Speed (mph)           | 30    |       | 30    |       | 30    |       |
| Link Distance (ft)         | 449   |       | 426   |       | 431   |       |
| Travel Time (s)            | 10.2  |       | 9.7   |       | 9.8   |       |
| Peak Hour Factor           | 0.49  | 0.65  | 0.88  | 0.70  | 0.61  | 0.86  |
| Heavy Vehicles (%)         | 5%    | 11%   | 4%    | 3%    | 6%    | 3%    |
| Adj. Flow (vph)            | 282   | 117   | 785   | 94    | 92    | 787   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 282   | 117   | 879   | 0     | 92    | 787   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Right | Left  | Right | Left  | Right |
| Median Width(ft)           | 12    |       | 12    |       | 12    |       |
| Link Offset(ft)            | 0     |       | 0     |       | 0     |       |
| Crosswalk Width(ft)        | 16    |       | 16    |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15    | 9     | 15    | 9     |
| Number of Detectors        | 1     | 1     | 1     |       | 1     | 1     |
| Detector Template          | Left  | Right | Left  |       | Left  | Right |
| Leading Detector (ft)      | 20    | 20    | 20    |       | 20    | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 20    | 20    |       | 20    | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Turn Type                  | Prot  | Perm  | Prot  |       | Perm  | Prot  |
| Protected Phases           | 4     |       | 6     |       |       | 2     |
| Permitted Phases           |       | 4     |       |       | 2     |       |
| Detector Phase             | 4     | 4     | 6     |       | 2     | 2     |
| Switch Phase               |       |       |       |       |       |       |
| Minimum Initial (s)        | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   |
| Minimum Split (s)          | 22.5  | 22.5  | 24.0  |       | 24.0  | 24.0  |

## 4: SULLIVAN AVE &amp; Pierce Rd



| Lane Group              | EBL   | EBR   | SBL   | SBR | NWL   | NWR   |
|-------------------------|-------|-------|-------|-----|-------|-------|
| Total Split (s)         | 22.5  | 22.5  | 62.5  |     | 62.5  | 62.5  |
| Total Split (%)         | 26.5% | 26.5% | 73.5% |     | 73.5% | 73.5% |
| Maximum Green (s)       | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| Yellow Time (s)         | 3.0   | 3.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 2.0   |     | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 4.0   | 6.0   |     | 6.0   | 6.0   |
| Lead/Lag                |       |       |       |     |       |       |
| Lead-Lag Optimize?      |       |       |       |     |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             | None  | None  | C-Max |     | C-Max | C-Max |
| Walk Time (s)           | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   |
| Flash Dont Walk (s)     | 11.0  | 11.0  | 11.0  |     | 11.0  | 11.0  |
| Pedestrian Calls (#/hr) | 0     | 0     | 0     |     | 0     | 0     |
| Act Effect Green (s)    | 17.0  | 17.0  | 58.0  |     | 58.0  | 58.0  |
| Actuated g/C Ratio      | 0.20  | 0.20  | 0.68  |     | 0.68  | 0.68  |
| v/c Ratio               | 0.82  | 0.30  | 0.74  |     | 0.34  | 0.70  |
| Control Delay           | 52.4  | 8.0   | 14.0  |     | 8.7   | 8.0   |
| Queue Delay             | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             | 52.4  | 8.0   | 14.0  |     | 8.7   | 8.0   |
| LOS                     | D     | A     | B     |     | A     | A     |
| Approach Delay          | 39.4  |       | 14.0  |     | 8.1   |       |
| Approach LOS            | D     |       | B     |     | A     |       |
| 90th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 90th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 70th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 70th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 50th %ile Green (s)     | 18.5  | 18.5  | 56.5  |     | 56.5  | 56.5  |
| 50th %ile Term Code     | Max   | Max   | Coord |     | Coord | Coord |
| 30th %ile Green (s)     | 16.8  | 16.8  | 58.2  |     | 58.2  | 58.2  |
| 30th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| 10th %ile Green (s)     | 12.9  | 12.9  | 62.1  |     | 62.1  | 62.1  |
| 10th %ile Term Code     | Gap   | Gap   | Coord |     | Coord | Coord |
| Stops (vph)             | 124   | 14    | 481   |     | 16    | 196   |
| Fuel Used(gal)          | 3     | 0     | 7     |     | 0     | 4     |
| CO Emissions (g/hr)     | 185   | 33    | 512   |     | 26    | 312   |
| NOx Emissions (g/hr)    | 36    | 6     | 100   |     | 5     | 61    |
| VOC Emissions (g/hr)    | 43    | 8     | 119   |     | 6     | 72    |
| Dilemma Vehicles (#)    | 0     | 0     | 0     |     | 0     | 0     |
| Queue Length 50th (ft)  | 142   | 0     | 274   |     | 14    | 83    |
| Queue Length 95th (ft)  | 109   | 15    | 414   |     | 21    | 133   |
| Internal Link Dist (ft) | 369   |       | 346   |     | 351   |       |
| Turn Bay Length (ft)    | 150   |       |       |     | 400   |       |
| Base Capacity (vph)     | 374   | 408   | 1181  |     | 271   | 1132  |
| Starvation Cap Reductn  | 0     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       | 0.75  | 0.29  | 0.74  |     | 0.34  | 0.70  |

**4: SULLIVAN AVE & Pierce Rd****Intersection Summary**

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NWL and 6:SBL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.3

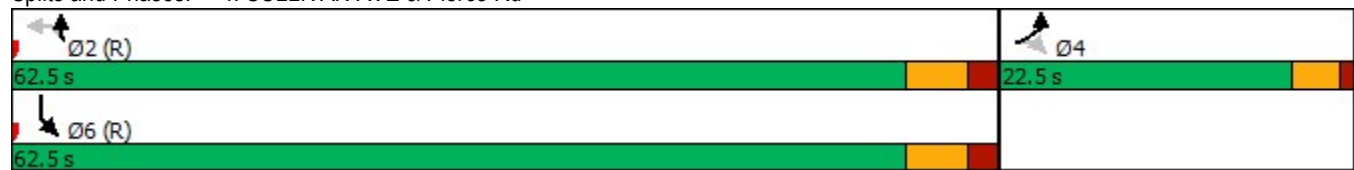
Intersection LOS: B

Intersection Capacity Utilization 67.4%

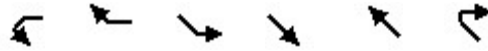
ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: SULLIVAN AVE &amp; Pierce Rd



## 6: SULLIVAN AVE &amp; Collins Lane



| Lane Group                 | WBL   | WBR   | SEL  | SET  | NWT   | NWR   |
|----------------------------|-------|-------|------|------|-------|-------|
| Lane Configurations        |       |       |      |      |       |       |
| Traffic Volume (vph)       | 5     | 5     | 3    | 710  | 769   | 4     |
| Future Volume (vph)        | 5     | 5     | 3    | 710  | 769   | 4     |
| Ideal Flow (vphpl)         | 1900  | 1900  | 1900 | 1900 | 1900  | 1900  |
| Lane Util. Factor          | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  |
| Frt                        | 0.932 |       |      |      | 0.999 |       |
| Flt Protected              | 0.976 |       |      |      |       |       |
| Satd. Flow (prot)          | 1694  | 0     | 0    | 1863 | 1861  | 0     |
| Flt Permitted              | 0.976 |       |      |      |       |       |
| Satd. Flow (perm)          | 1694  | 0     | 0    | 1863 | 1861  | 0     |
| Link Speed (mph)           | 30    |       |      | 30   | 30    |       |
| Link Distance (ft)         | 264   |       |      | 431  | 389   |       |
| Travel Time (s)            | 6.0   |       |      | 9.8  | 8.8   |       |
| Peak Hour Factor           | 0.92  | 0.92  | 0.92 | 0.92 | 0.92  | 0.92  |
| Adj. Flow (vph)            | 5     | 5     | 3    | 772  | 836   | 4     |
| Shared Lane Traffic (%)    |       |       |      |      |       |       |
| Lane Group Flow (vph)      | 10    | 0     | 0    | 775  | 840   | 0     |
| Enter Blocked Intersection | No    | No    | No   | No   | No    | No    |
| Lane Alignment             | Left  | Right | Left | Left | Left  | Right |
| Median Width(ft)           | 12    |       |      | 12   | 12    |       |
| Link Offset(ft)            | 0     |       |      | 0    | 0     |       |
| Crosswalk Width(ft)        | 16    |       |      | 16   | 16    |       |
| Two way Left Turn Lane     |       |       |      |      |       |       |
| Headway Factor             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  |
| Turning Speed (mph)        | 15    | 9     | 15   |      |       | 9     |
| Sign Control               | Stop  |       |      | Free | Free  |       |

## Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 50.7% ICU Level of Service A

Analysis Period (min) 15

# **APPENDIX E**

## **Proposed Site Driveway Layout**

