



Hanson Site

Cooper City, Florida 33328

prepared for:

CC Homes

A Codina-Car Company

traffic engineering evaluation

December 14, 2023

Mr. Jimmy Wright, P.E.
Vice President, Land
CC Homes
A Codina-Car Company
2020 Salzedo Street, Suite 200
Coral Gables, Florida 33134

Re: Hanson Site - Traffic Engineering Evaluation

Dear Jimmy:

Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic evaluation in connection the Hanson Site residential development planned to be located on the southeast corner of Griffin Road and SW 106th Avenue in the City of Cooper City, Broward County, Florida. Figure 1 shows the location of the project site and the surrounding street system.

Project Description and Access

The project site is currently vacant and will be developed will the following land use and intensity:

- Single Family Homes: 38 units

Access to the site is provided via one right-in/right-out driveway off of Griffin Road. A copy of the site plan is contained in Attachment A. For purposes of this traffic evaluation, the project is anticipated to be built and occupied in the year 2025. The following tasks were undertaken as part of this evaluation:

- o Documented the existing lane geometry of the study area. The intersection of Griffin Road and SW 106th Avenue and the project driveway were evaluated as part of this evaluation. Table 1 summarizes the roadway characteristics of the adjacent roadway network, including the roadway ownership, number of lanes, speed limit, and multimodal facilities. Figure 2 depicts the existing lane geometry of the study intersection and driveway.

| TABLE 1 Roadway Characteristics Hanson Site | | | | | | | | |
|---|------------------|-------------|------------|-----------------|---------------|-------------------|---------|--------------------|
| Segment | # of Lanes | Speed limit | Sidewalks | Street lighting | Bicycle lanes | On-street parking | Transit | Maintenance agency |
| Griffin Road | 6 Lane Divided | 45 mph | South Side | North Side | No | No | None | State Road/FDOT |
| SW 106th Avenue | 2 Lane Undivided | 35 mph | East Side | East Side | No | No | None | City |

- Collected intersection turning movement counts during the critical peak periods (7:00 AM to 9:00 AM) and (4:00 PM to 6:00 PM) at the following location:
 - Griffin Road and SW 106th Avenue (signalized)

The above traffic counts were recorded on Wednesday, May 24, 2023. The traffic counts were adjusted by utilizing a peak season factor of 1.04. Figure 3 shows the results of the AM and PM peak hour traffic counts. These traffic counts are included in Attachment B.

- Obtained the signal timing plan from Broward County Traffic Engineering Division. Attachment B contains the signal timing plan for the signalized intersection located within the study area.
- Determined the trip generation of the proposed land use intensity using the trip generation equations/rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition). Table 2 documents the trip generation associated with the proposed land use.

| TABLE 2 Trip Generation Summary Hanson Site | | | | | | | | |
|---|-----------|-------------|--------------|----------|-----------|--------------|-----------|-----------|
| Land Use | Size | Daily Trips | AM Peak Hour | | | PM Peak Hour | | |
| | | | Total Trips | Inbound | Outbound | Total Trips | Inbound | Outbound |
| SF Homes (LUC 210) | 38 | 414 | 31 | 8 | 23 | 40 | 25 | 15 |
| External Trips | 38 | 414 | 31 | 8 | 23 | 40 | 25 | 15 |

Source: ITE Trip Generation Manual (11th Edition)

- As indicated in Table 1, the proposed uses are projected to generate 414 daily trips, 31 AM peak hour trips (8 inbound and 23 outbound), and 40 PM peak hour trips (25 inbound and 15 outbound).

- The project's peak-hour trips documented in Table 2 were distributed and assigned to the study area based. The following traffic assignment was assumed for the Project:
 - 40% to and from the west via Griffin Road
 - 60% to and from the east via Griffin Road

Figure 4 documents the project traffic assignment based on the above traffic percentages.

- Figures 5 and 6 present the future traffic volumes for the study area. Figure 5 includes background traffic only (without the proposed project) and Figure 6 includes the additional traffic anticipated to be generated by the proposed residential development. The background traffic includes peak season adjustment factor, traffic growth based on historical traffic data within the study area and committed development trips from Chabad, Chabad Phases 1 & 2, Kingfisher Reserve, and Nur Islam Expansion projects (please refer to Attachment C for details). The future traffic projections for the study intersections are presented in tabular format in Attachment D.
- In order to determine the impacts created by the 38 residential units to the study intersection and project driveway, capacity/level of service analyses were undertaken using the SYNCHRO software. The results of the capacity/level of service analyses are presented in Table 3. The SYNCHRO outputs are contained in Attachment E.

| TABLE 3 Level of Service Analyses Hanson Site | | | | | | | | | | | |
|---|-------------|-----------|----------------|-----------|----------------|------------|-------------------|------------|-------|------------------|--------------------------|
| Intersection | Time Period | EASTBOUND | | WESTBOUND | | NORTHBOUND | | SOUTHBOUND | | Intersection LOS | Intersection Delay (sec) |
| | | Approach | | Approach | | Approach | | Approach | | | |
| | | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay | | |
| Griffin Road & SW 106th Avenue | AM | B/B/B | 12.9/13.7/14.0 | A/B/B | 9.9/10.7/10.8 | F/F/F | 119.9/172.9/172.9 | | | C/C/C | 24.9/33.7/33.8 |
| | PM | B/B/B | 13.2/14.0/14.2 | B/B/B | 10.3/10.9/10.8 | D/D/D | 37.6/42.0/42.0 | | | B/B/B | 13.7/14.9/15.0 |
| Griffin Road & Driveway | AM | | | | | B | 12.1 | | | | |
| | PM | | | | | B | 11.3 | | | | |

SOURCE: SYNCHRO. LEGEND: 2023 Existing /2025 Background/2025 Future Total

- In summary and as presented in Table 3, in the year 2025 with the proposed project in place, the study intersection and project driveway are expected to operate at acceptable levels of services.
- Table 4 summarizes the 95th percentile vehicle queue stacking and the existing turn lane storage lengths for each scenario.

| TABLE 4 Hanson Site 95th Percentile Queues | | | | | | | | | | | |
|--|-------------|--------------|----------------------|--------------|----------------------|--------------|----------------------|--------------|----------------------|--------------|----------------------|
| Intersection | Time Period | EASTBOUND | | | | WESTBOUND | | NORTHBOUND | | | |
| | | L | | R | | L | | L | | R | |
| | | Storage (ft) | 95th percentile (ft) | Storage (ft) | 95th percentile (ft) | Storage (ft) | 95th percentile (ft) | Storage (ft) | 95th percentile (ft) | Storage (ft) | 95th percentile (ft) |
| Griffin Road & SW 106th Avenue | Existing | | #88/54 | | 23/10 | | 60/50 | | #228/89 | | #182/36 |
| | Background | 325 | #91/55 | 210 | 24/19 | 330 | #121/#100 | 85 | #278/104 | | #241/51 |
| | Future | | #91/55 | | 24/19 | | #131/#126 | | #278/104 | | #241/51 |
| Driveway & Griffin Road | Future | | | | 0/0 | | | | | | 2/2 |

Legend: Existing/Background/Future

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

- A turn lane analysis was performed using the FDOT 2019 Access Management Guidebook and AASHTO 7th edition for the eastbound right-turn lane at proposed access driveway along Griffin Road.
 - A Right Turn Deceleration Lane based on FDOT Access Management Guidebook (2019), for roadways with posted speed limit of 45 mph or less, right-turn lane is recommended if the development generates 80-125 trips in the peak hour.
- Based on the anticipated peak hour trips (8 AM/25 PM) for the driveway at build-out conditions (refer to Figure 4), it could be concluded that a dedicated eastbound right-turn lane is not warranted.
- A queuing analysis was conducted for the entry gate. The access driveway is proposed to be controlled by swing gates. Residents will have a vehicle card reader to operate the gate in order to minimize delay and queues and visitors will be controlled via telephone entry system (phone board). Table 5 summarizes the results of the queuing analysis. As shown in Table 5, queues for the proposed gated entrance are not expected to exceed one vehicle. Therefore, traffic entering the site will not spillback into the adjacent public roadways. Appendix F includes a description of the queuing analysis and calculation details.

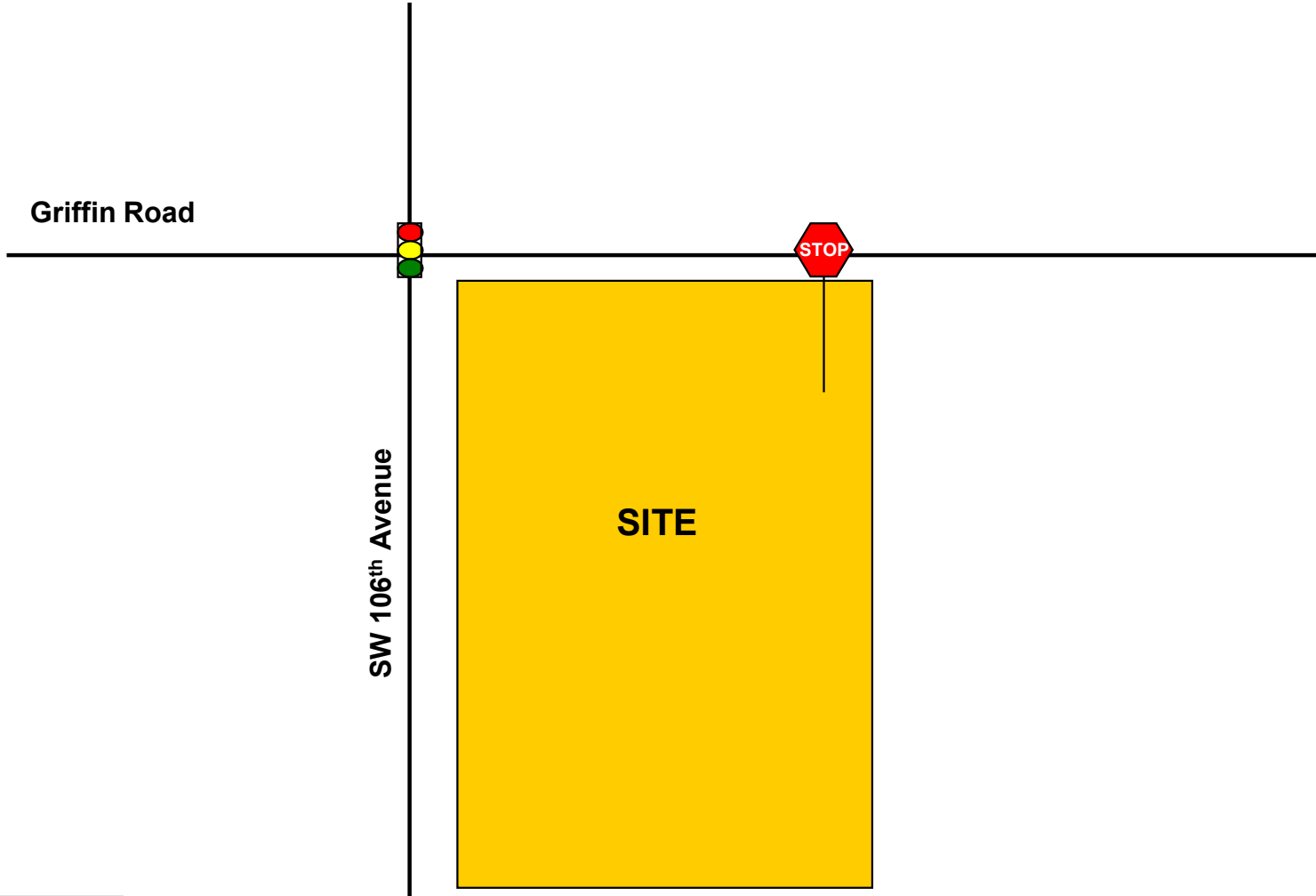
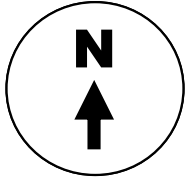
| Table 5 Queuing Analysis at Entry Gate | | | | | | |
|---|----------------------------|--------------|--------------------|----------------------------------|---------------------------------------|-----------------|
| Location | Category of Traffic Demand | Peak Hour | | | | |
| | | Demand (vph) | Service Rate (vph) | 95th Percentile Queue (vehicles) | Stacking Distance Provided (vehicles) | Is stacking OK? |
| Gate | Residents | 23 | 300 | 1 vehicle or 25 ft | 10 vehicles or 250 ft | YES |
| | Visitors | 2 | 30 | 1 vehicle or 25 ft | 10 vehicles or 250 ft | YES |

Please give me a call if you have any questions.


Sincerely,

TRAF TECH ENGINEERING, INC.

Joaquin E. Vargas, P.E.
Senior Transportation Engineer



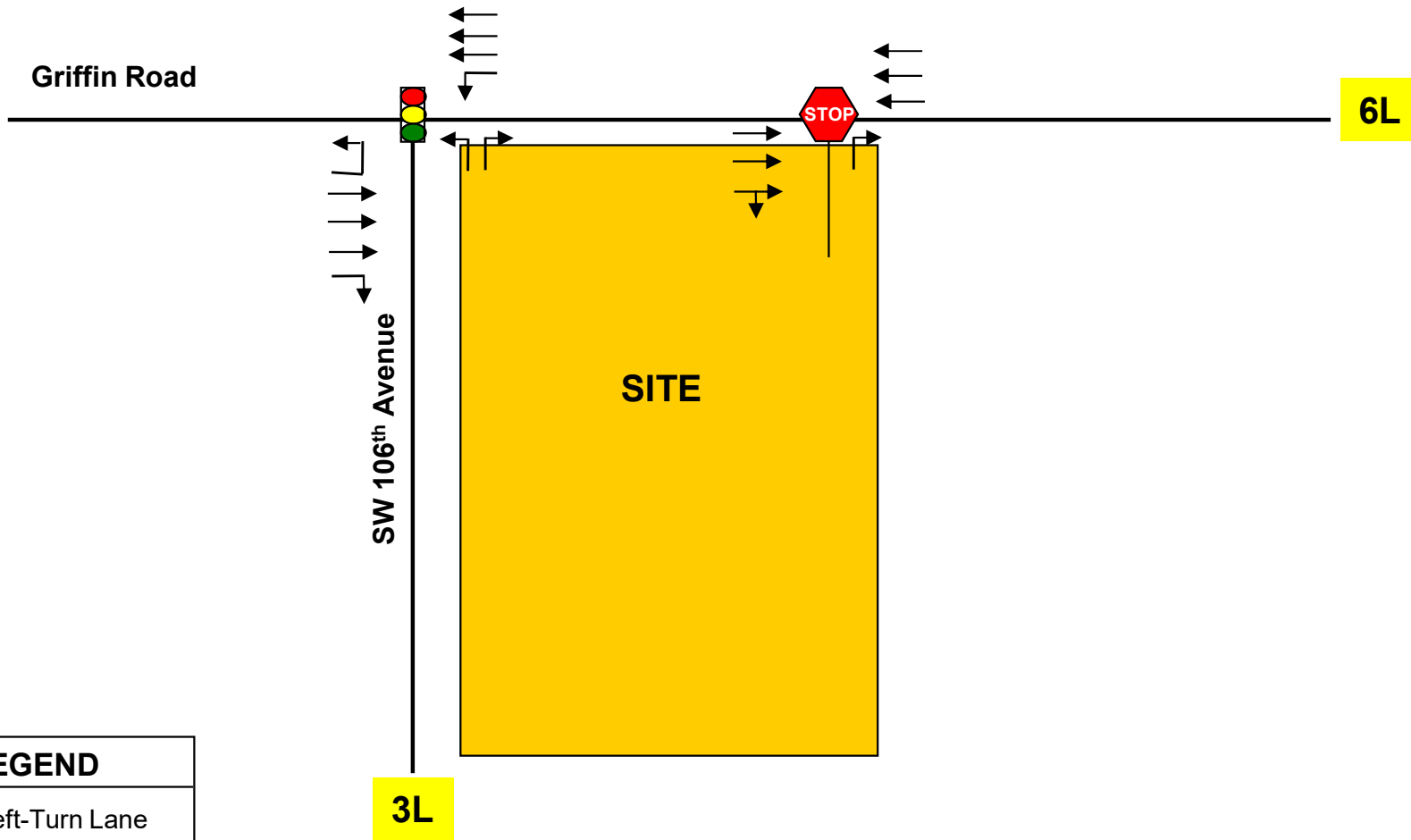
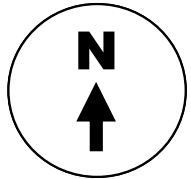
LEGEND

 Subject Site



PROJECT LOCATION MAP

FIGURE 1
Hanson Site
Broward County, Florida

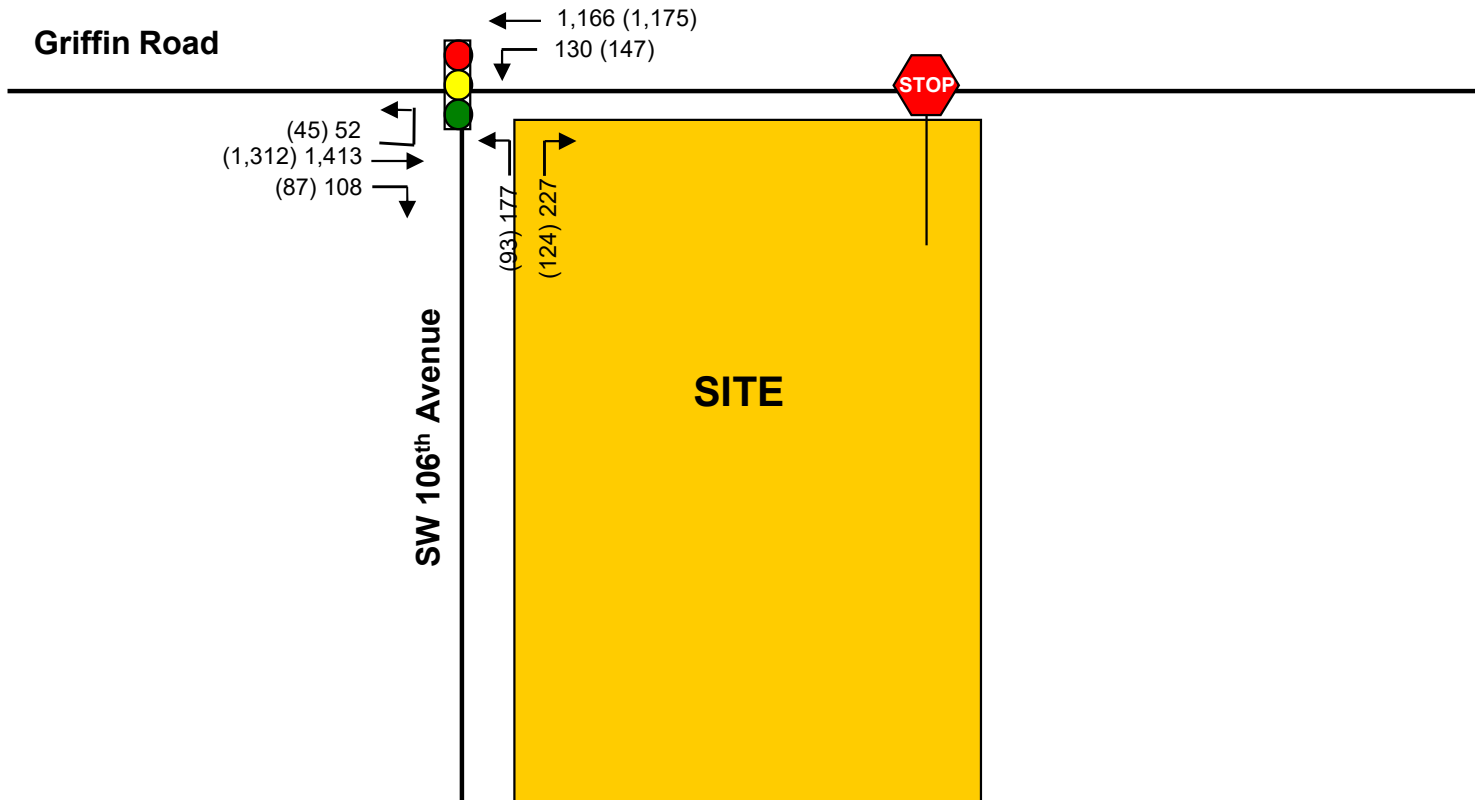
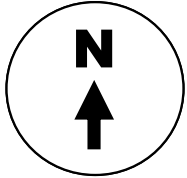


| LEGEND | |
|--------|-----------------|
| | Left-Turn Lane |
| | Through Lane |
| | Right-Turn Lane |



EXISTING LANE GEOMETRY

FIGURE 2
Hanson Site
Broward County, Florida

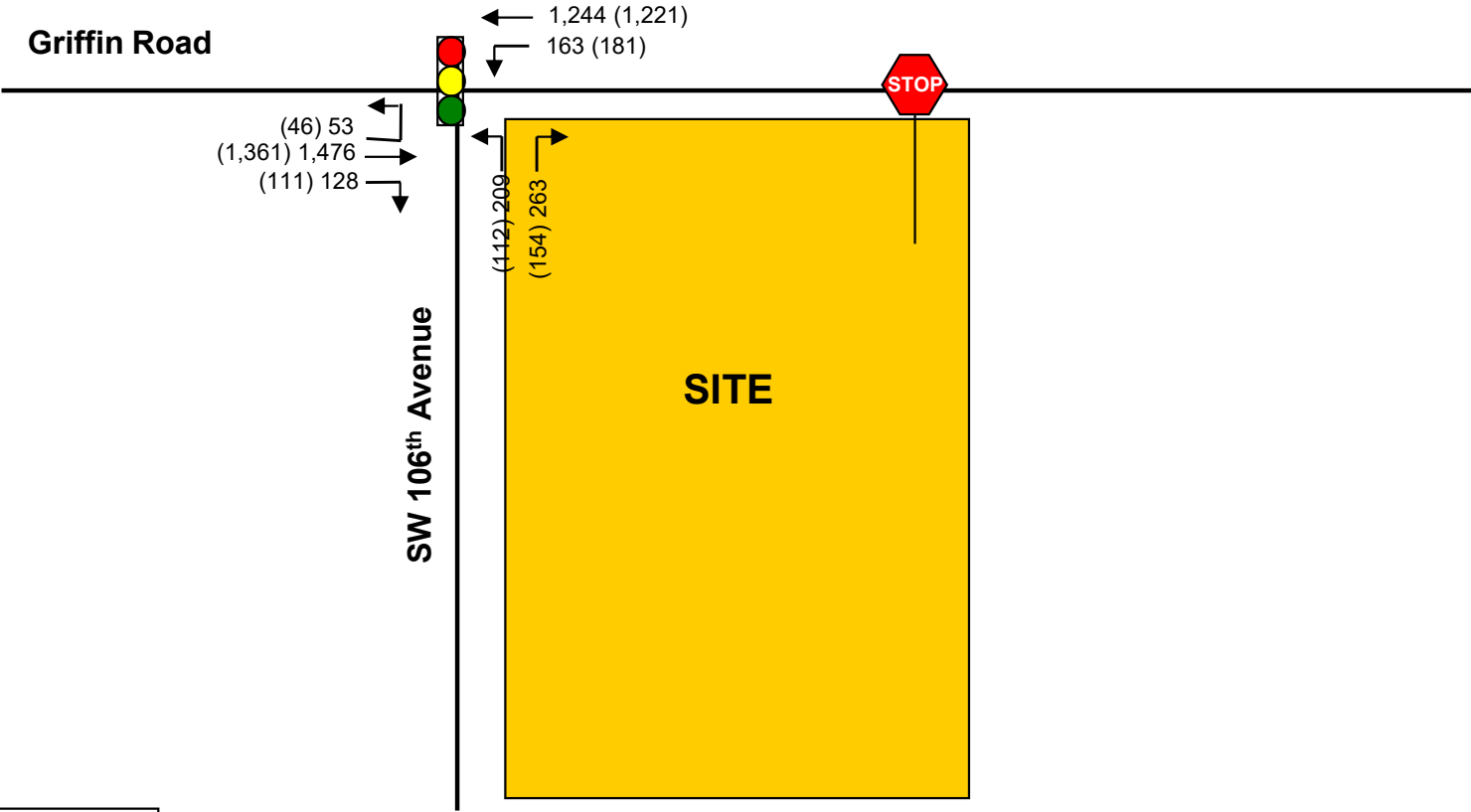
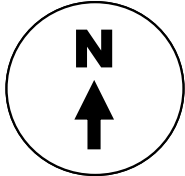


| LEGEND | |
|--------|--------------|
| XX | AM Peak Hour |
| (YY) | PM Peak Hour |

EXISTING TRAFFIC COUNTS – AM & (PM) Peak Hour

FIGURE 3
Hanson Site
Broward County, Florida



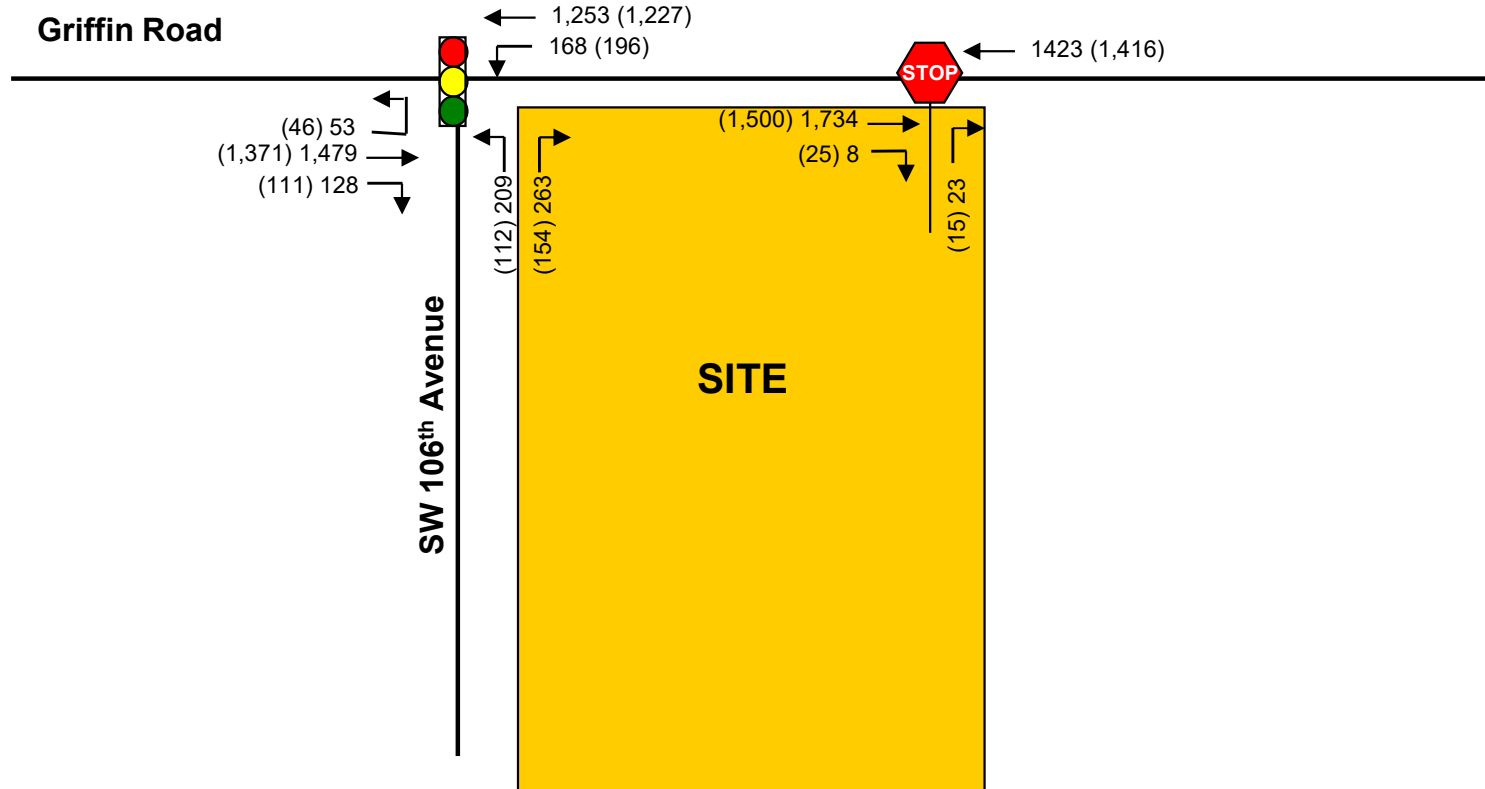
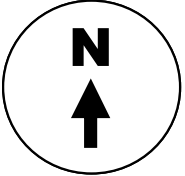


| LEGEND | |
|--------|--------------|
| XX | AM Peak Hour |
| (YY) | PM Peak Hour |

BACKGROUND TRAFFIC – Year 2025
AM & (PM) Peak Hour

FIGURE 5
Hanson Site
Broward County, Florida





| LEGEND | |
|--------|--------------|
| XX | AM Peak Hour |
| (YY) | PM Peak Hour |

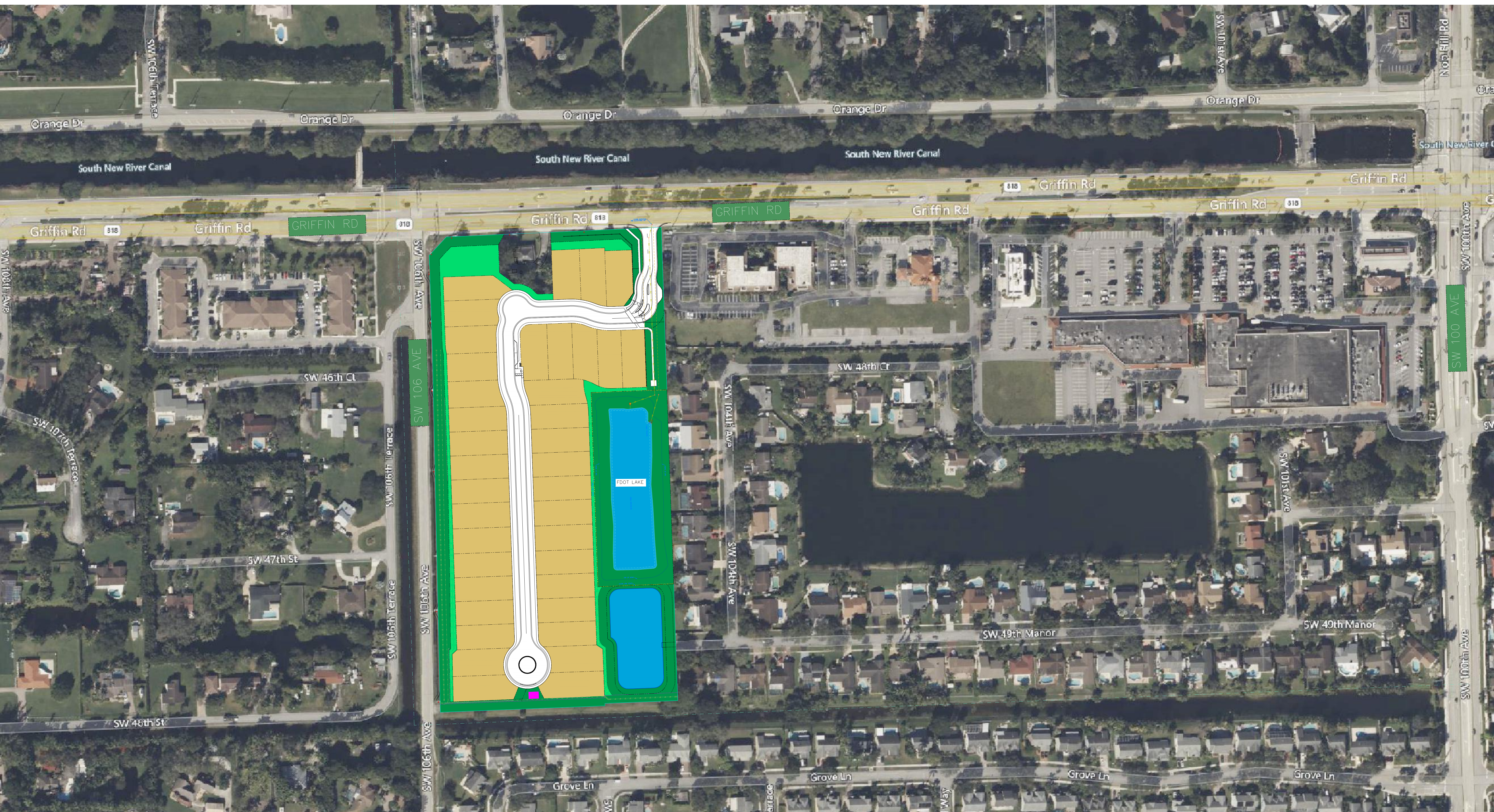
**TOTAL TRAFFIC VOLUMES
(Year 2025 Peak Season)**

FIGURE 6
Hanson Site
Broward County, Florida



Attachment A

**Site Plan
Hanson Site**



Attachment B

Traffic Counts and Signal Timing

Traf Tech Engineering Inc.

File Name : 1- SW 106th Ave & Griffin Rd
 Site Code : 00000000
 Start Date : 5/24/2023
 Page No : 1

Groups Printed- Peds & Bikes

| Start Time | SW 106th Ave From North | | | | Griffin Rd From East | | | | SW 106th Ave From South | | | | Griffin Rd From West | | | | Int. Total |
|---------------|-------------------------|---|---|------|----------------------|---|---|------|-------------------------|---|---|------|----------------------|---|---|------|------------|
| | Bikes | | | Peds | Bikes | | | Peds | Bikes | | | Peds | Bikes | | | Peds | |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| *** BREAK *** | | | | | | | | | | | | | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| *** BREAK *** | | | | | | | | | | | | | | | | | |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 |
| *** BREAK *** | | | | | | | | | | | | | | | | | |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 8 |
| *** BREAK *** | | | | | | | | | | | | | | | | | |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 8 | 0 | 0 | 1 | 12 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66.7 | 0 | 0 | 33.3 | 88.9 | 0 | 0 | 11.1 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16.7 | 0 | 0 | 8.3 | 66.7 | 0 | 0 | 8.3 | |

Traf Tech Engineering Inc.

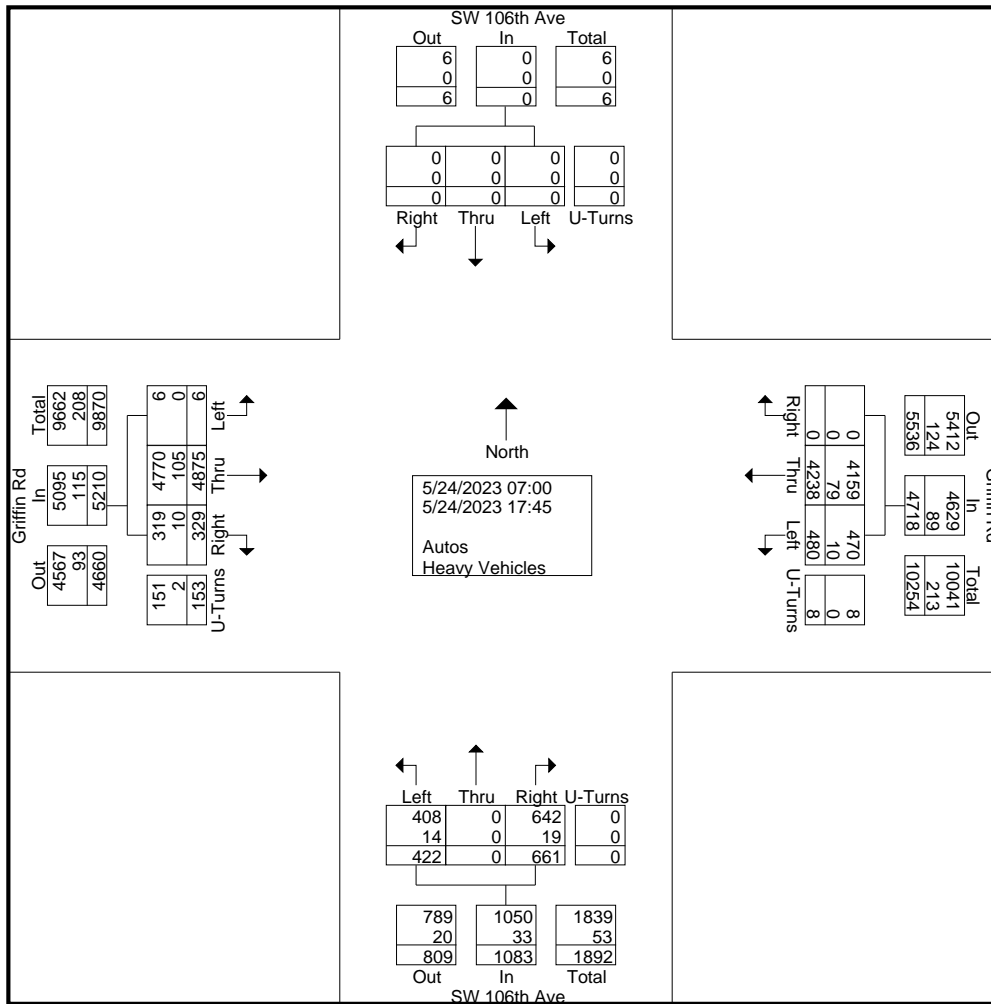
File Name : 1- SW 106th Ave & Griffin Rd
 Site Code : 00000000
 Start Date : 5/24/2023
 Page No : 1

Groups Printed- Autos - Heavy Vehicles

| Start Time | SW 106th Ave From North | | | | | Griffin Rd From East | | | | | SW 106th Ave From South | | | | | Griffin Rd From West | | | | | Int. Total |
|------------------|-------------------------|------|------|---------|------------|----------------------|------|------|---------|------------|-------------------------|------|------|---------|------------|----------------------|------|------|---------|------------|------------|
| | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 206 | 12 | 0 | 218 | 47 | 0 | 25 | 0 | 72 | 10 | 214 | 0 | 9 | 233 | 523 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 260 | 22 | 0 | 282 | 46 | 0 | 22 | 0 | 68 | 9 | 272 | 0 | 4 | 285 | 635 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 297 | 28 | 1 | 326 | 56 | 0 | 42 | 0 | 98 | 17 | 351 | 1 | 5 | 374 | 798 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 315 | 40 | 0 | 355 | 67 | 0 | 46 | 0 | 113 | 42 | 350 | 1 | 11 | 404 | 872 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1078 | 102 | 1 | 1181 | 216 | 0 | 135 | 0 | 351 | 78 | 1187 | 2 | 29 | 1296 | 2828 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 273 | 38 | 0 | 311 | 48 | 0 | 47 | 0 | 95 | 24 | 346 | 0 | 10 | 380 | 786 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 18 | 0 | 254 | 47 | 0 | 35 | 0 | 82 | 21 | 312 | 0 | 22 | 355 | 691 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 222 | 21 | 0 | 243 | 51 | 0 | 26 | 0 | 77 | 20 | 349 | 0 | 8 | 377 | 697 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 242 | 26 | 0 | 268 | 41 | 0 | 29 | 0 | 70 | 16 | 320 | 0 | 12 | 348 | 686 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 973 | 103 | 0 | 1076 | 187 | 0 | 137 | 0 | 324 | 81 | 1327 | 0 | 52 | 1460 | 2860 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 224 | 33 | 1 | 258 | 39 | 0 | 16 | 0 | 55 | 32 | 370 | 0 | 10 | 412 | 725 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 268 | 31 | 2 | 301 | 39 | 0 | 19 | 0 | 58 | 17 | 259 | 1 | 10 | 287 | 646 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 287 | 35 | 3 | 325 | 27 | 0 | 28 | 0 | 55 | 20 | 328 | 2 | 8 | 358 | 738 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 273 | 37 | 0 | 310 | 42 | 0 | 12 | 0 | 54 | 20 | 287 | 0 | 10 | 317 | 681 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1052 | 136 | 6 | 1194 | 147 | 0 | 75 | 0 | 222 | 89 | 1244 | 3 | 38 | 1374 | 2790 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 235 | 28 | 1 | 264 | 27 | 0 | 30 | 0 | 57 | 27 | 343 | 0 | 11 | 381 | 702 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 335 | 37 | 0 | 372 | 23 | 0 | 19 | 0 | 42 | 17 | 304 | 1 | 11 | 333 | 747 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 304 | 34 | 0 | 338 | 27 | 0 | 5 | 0 | 32 | 16 | 139 | 0 | 6 | 161 | 531 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 261 | 40 | 0 | 301 | 34 | 0 | 21 | 0 | 55 | 21 | 331 | 0 | 6 | 358 | 714 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1135 | 139 | 1 | 1275 | 111 | 0 | 75 | 0 | 186 | 81 | 1117 | 1 | 34 | 1233 | 2694 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 4238 | 480 | 8 | 4726 | 661 | 0 | 422 | 0 | 1083 | 329 | 4875 | 6 | 153 | 5363 | 11172 |
| Apprch % | 0 | 0 | 0 | 0 | 0 | 0 | 89.7 | 10.2 | 0.2 | | 61 | 0 | 39 | 0 | | 6.1 | 90.9 | 0.1 | 2.9 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 37.9 | 4.3 | 0.1 | 42.3 | 5.9 | 0 | 3.8 | 0 | 9.7 | 2.9 | 43.6 | 0.1 | 1.4 | 48 | |
| Autos | 0 | 0 | 0 | 0 | 0 | 0 | 4159 | | | | | | | | | 4770 | | | | | 10933 |
| % Autos | 0 | 0 | 0 | 0 | 0 | 0 | 98.1 | 97.9 | 100 | 98.1 | 97.1 | 0 | 96.7 | 0 | 97 | 97 | 97.8 | 100 | 98.7 | 97.8 | 97.9 |
| Heavy Vehicles | | | | | | | | | | | | | | | | | | | | | |
| % Heavy Vehicles | 0 | 0 | 0 | 0 | 0 | 0 | 1.9 | 2.1 | 0 | 1.9 | 2.9 | 0 | 3.3 | 0 | 3 | 3 | 2.2 | 0 | 1.3 | 2.2 | 2.1 |

Traf Tech Engineering Inc.

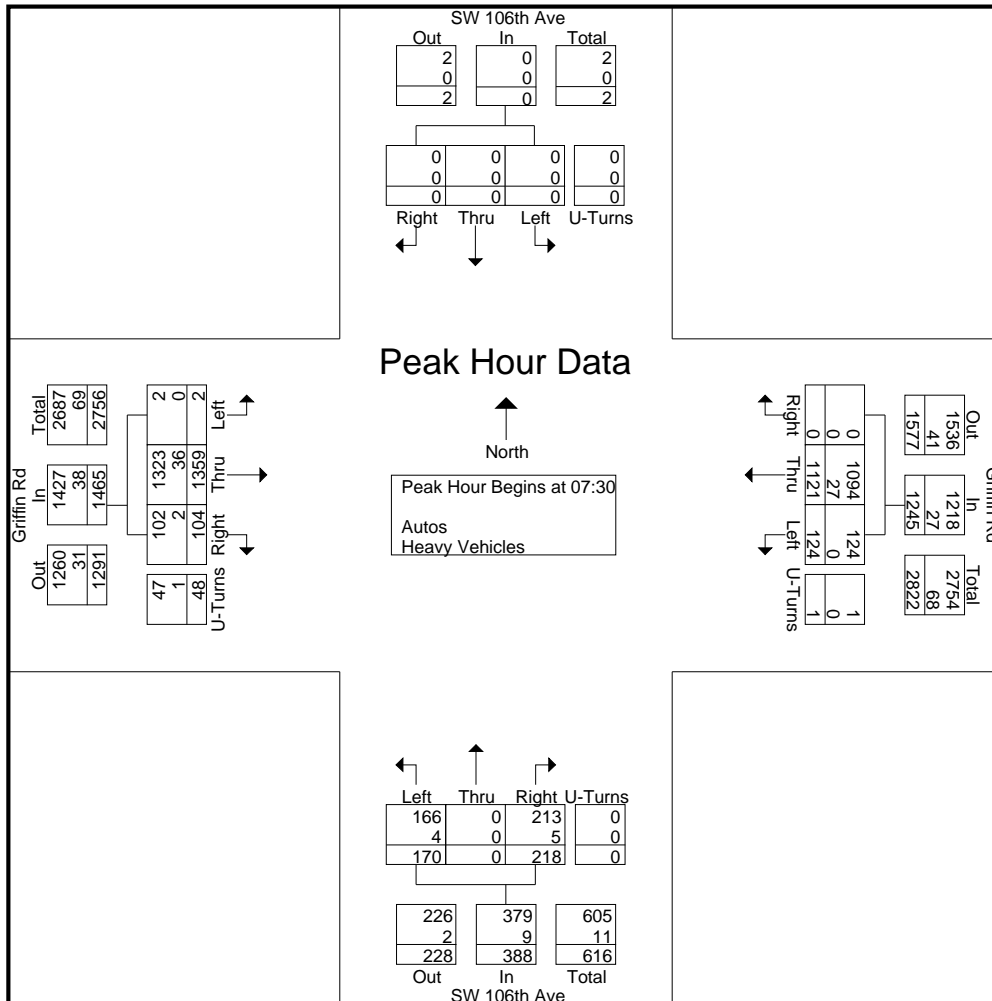
File Name : 1- SW 106th Ave & Griffin Rd
 Site Code : 00000000
 Start Date : 5/24/2023
 Page No : 2



Traf Tech Engineering Inc.

File Name : 1- SW 106th Ave & Griffin Rd
 Site Code : 00000000
 Start Date : 5/24/2023
 Page No : 3

| Start Time | SW 106th Ave From North | | | | | Griffin Rd From East | | | | | SW 106th Ave From South | | | | | Griffin Rd From West | | | | | Int. Total |
|--|-------------------------|------|------|---------|------------|----------------------|------|------|---------|------------|-------------------------|------|------|---------|------------|----------------------|------|------|---------|------------|------------|
| | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | |
| Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 297 | 28 | 1 | 326 | 56 | 0 | 42 | 0 | 98 | 17 | 351 | 1 | 5 | 374 | 798 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 315 | 40 | 0 | 355 | 67 | 0 | 46 | 0 | 113 | 42 | 350 | 1 | 11 | 404 | 872 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 273 | 38 | 0 | 311 | 48 | 0 | 47 | 0 | 95 | 24 | 346 | 0 | 10 | 380 | 786 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 18 | 0 | 254 | 47 | 0 | 35 | 0 | 82 | 21 | 312 | 0 | 22 | 355 | 691 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1121 | 124 | 1 | 1246 | 218 | 0 | 170 | 0 | 388 | 104 | 1359 | 2 | 48 | 1513 | 3147 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 10 | 0.1 | | 56.2 | 0 | 43.8 | 0 | | 6.9 | 89.8 | 0.1 | 3.2 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .890 | .775 | .250 | .877 | .813 | .000 | .904 | .000 | .858 | .619 | .968 | .500 | .545 | .936 | .902 |
| Autos | 0 | 0 | 0 | 0 | 0 | 0 | 1094 | | | | | | | | | 1323 | | | | | |
| % Autos | 0 | 0 | 0 | 0 | 0 | 0 | 97.6 | 100 | 100 | 97.8 | 97.7 | 0 | 97.6 | 0 | 97.7 | 98.1 | 97.4 | 100 | 97.9 | 97.4 | 97.6 |
| Heavy Vehicles | | | | | | | | | | | | | | | | | | | | | |
| % Heavy Vehicles | 0 | 0 | 0 | 0 | 0 | 0 | 2.4 | 0 | 0 | 2.2 | 2.3 | 0 | 2.4 | 0 | 2.3 | 1.9 | 2.6 | 0 | 2.1 | 2.6 | 2.4 |



Traf Tech Engineering Inc.

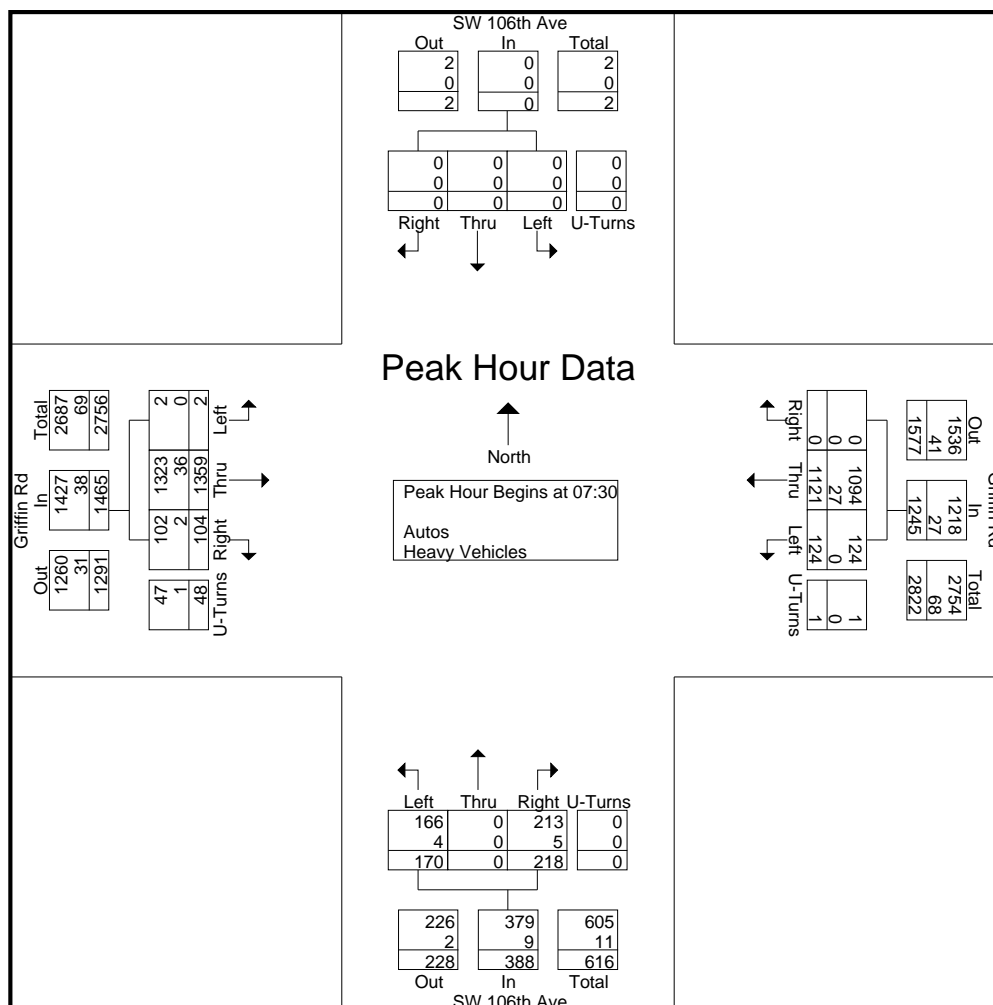
File Name : 1- SW 106th Ave & Griffin Rd

Site Code : 00000000

Start Date : 5/24/2023

Page No : 4

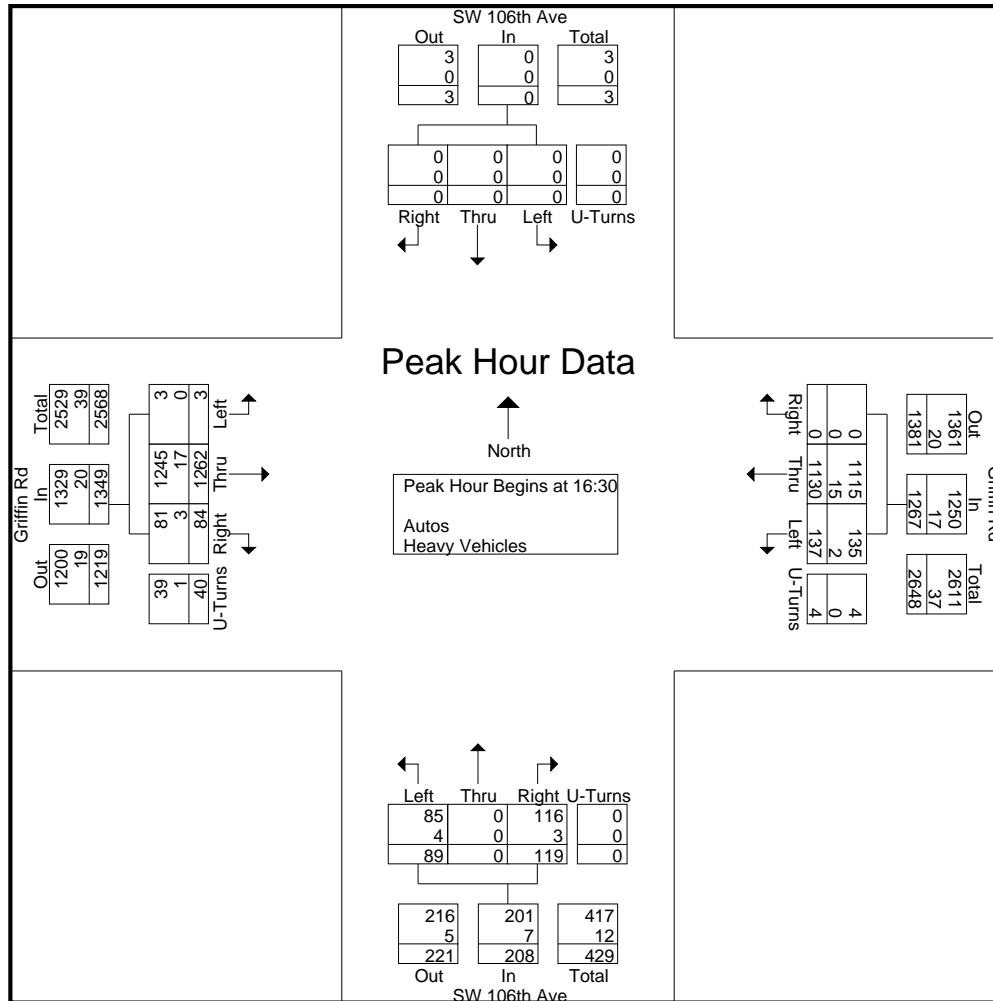
| Start Time | SW 106th Ave From North | | | | | Griffin Rd From East | | | | | SW 106th Ave From South | | | | | Griffin Rd From West | | | | | Int. Total |
|--|-------------------------|------|------|---------|------------|----------------------|------|------|---------|------------|-------------------------|------|------|---------|------------|----------------------|------|------|---------|------------|------------|
| | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 297 | 28 | 1 | 326 | 56 | 0 | 42 | 0 | 98 | 17 | 351 | 1 | 5 | 374 | 798 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 315 | 40 | 0 | 355 | 67 | 0 | 46 | 0 | 113 | 42 | 350 | 1 | 11 | 404 | 872 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 273 | 38 | 0 | 311 | 48 | 0 | 47 | 0 | 95 | 24 | 346 | 0 | 10 | 380 | 786 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 18 | 0 | 254 | 47 | 0 | 35 | 0 | 82 | 21 | 312 | 0 | 22 | 355 | 691 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1121 | 124 | 1 | 1246 | 218 | 0 | 170 | 0 | 388 | 104 | 1359 | 2 | 48 | 1513 | 3147 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 10 | 0.1 | | 56.2 | 0 | 43.8 | 0 | | 6.9 | 89.8 | 0.1 | 3.2 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .890 | .775 | .250 | .877 | .813 | .000 | .904 | .000 | .858 | .619 | .968 | .500 | .545 | .936 | .902 |
| Autos | 0 | 0 | 0 | 0 | 0 | 0 | 1094 | | | | | | | | | 1323 | | | | | |
| % Autos | 0 | 0 | 0 | 0 | 0 | 0 | 97.6 | 100 | 100 | 97.8 | 97.7 | 0 | 97.6 | 0 | 97.7 | 98.1 | 97.4 | 100 | 97.9 | 97.4 | 97.6 |
| Heavy Vehicles | | | | | | | | | | | | | | | | | | | | | |
| % Heavy Vehicles | 0 | 0 | 0 | 0 | 0 | 0 | 2.4 | 0 | 0 | 2.2 | 2.3 | 0 | 2.4 | 0 | 2.3 | 1.9 | 2.6 | 0 | 2.1 | 2.6 | 2.4 |



Traf Tech Engineering Inc.

File Name : 1- SW 106th Ave & Griffin Rd
 Site Code : 00000000
 Start Date : 5/24/2023
 Page No : 5

| Start Time | SW 106th Ave From North | | | | | Griffin Rd From East | | | | | SW 106th Ave From South | | | | | Griffin Rd From West | | | | | Int. Total |
|--|-------------------------|------|------|---------|------------|----------------------|------|------|---------|------------|-------------------------|------|------|---------|------------|----------------------|------|------|---------|------------|------------|
| | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | Right | Thru | Left | U-Turns | App. Total | |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | | | | | | | | | | | | |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 287 | 35 | 3 | 325 | 27 | 0 | 28 | 0 | 55 | 20 | 328 | 2 | 8 | 358 | 738 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 273 | 37 | 0 | 310 | 42 | 0 | 12 | 0 | 54 | 20 | 287 | 0 | 10 | 317 | 681 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 235 | 28 | 1 | 264 | 27 | 0 | 30 | 0 | 57 | 27 | 343 | 0 | 11 | 381 | 702 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 335 | 37 | 0 | 372 | 23 | 0 | 19 | 0 | 42 | 17 | 304 | 1 | 11 | 333 | 747 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1130 | 137 | 4 | 1271 | 119 | 0 | 89 | 0 | 208 | 84 | 1262 | 3 | 40 | 1389 | 2868 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 88.9 | 10.8 | 0.3 | | 57.2 | 0 | 42.8 | 0 | | 6 | 90.9 | 0.2 | 2.9 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .843 | .926 | .333 | .854 | .708 | .000 | .742 | .000 | .912 | .778 | .920 | .375 | .909 | .911 | .960 |
| Autos | 0 | 0 | 0 | 0 | 0 | 0 | 1115 | | | | | | 1245 | | | 1245 | | | | | |
| % Autos | 0 | 0 | 0 | 0 | 0 | 0 | 98.7 | 98.5 | 100 | 98.7 | 97.5 | 0 | 95.5 | 0 | 96.6 | 96.4 | 98.7 | 100 | 97.5 | 98.5 | 98.4 |
| Heavy Vehicles | | | | | | | | | | | | | | | | | | | | | |
| % Heavy Vehicles | 0 | 0 | 0 | 0 | 0 | 0 | 1.3 | 1.5 | 0 | 1.3 | 2.5 | 0 | 4.5 | 0 | 3.4 | 3.6 | 1.3 | 0 | 2.5 | 1.5 | 1.6 |





BROWARD COUNTY TRAFFIC ENGINEERING
ACTUATED TRAFFIC SIGNAL TIMING SHEET

| | | | |
|----------------------------|---|-------------------------------|------------|
| Intersection Number | 3222 | Initial Operation Date | 03/11/2008 |
| Controller Type | 2070 LN | System Number | 3222 |
| Modification Number | 4 | Modification Date | TBD |
| Drawing/Project No | 421261-1-52-01 | FPL Grid Number | |
| Intersection | GRIFFIN ROAD (SR 818) and SW 106 AVENUE | | |
| Municipality | COOPER CITY | | |

| | | | | | | |
|-----------------------------|--------|-----|-----|--------|-----|-------|
| Controller Phase | 1 | 2 | 4 | 5 | 6 | 8 |
| Face Number | 1 | 2 | 4 | 5 | 6 | 8,5 |
| Direction | EBU | WB | NB | WBL | EB | X-PED |
| Initial Green(MIN) | 4 | 15 | 6 | 4 | 15 | 7 |
| Vehicle Ext.(GAP) | 1.5 | 3.0 | 2.0 | 1.5 | 3.0 | |
| Maximum Green I | 12 | 60 | 20 | 12 | 60 | 40 |
| Maximum Green II | | | | | | |
| Yellow Clearance | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 | 5.0 |
| All Red Clearance | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Phase Recall | OFF | MIN | OFF | OFF | MIN | OFF |
| Detector Delay | 20-RT | | | | | |
| Walk | | | | | 7 | 7 |
| Pedestrian Clearance | | | | | 19 | 33 |
| Permissive | YES | | | YES | | |
| Flash Operation | YELLOW | | RED | YELLOW | | |

Attachment

NOTES:

1. ANTI-BACKDOWN EAST/WEST: PHASES 2+6 ON---> OMIT PHASE 5.
2. MOD. 4 REFLECTS INSTALLATION OF EXCLUSIVE PEDESTRIAN CROSSING.

Submitted By _____

Approved By _____

Station : 3222 - Griffin Rd & SW 106 Ave (Standard File)

| Phase | 1 (EL) | 2 (WT) | 3 | 4 (NT) | 5 (WL) | 6 (ET) | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|--------------------|-----------|-----------|---|-----------|-----------|-----------|---|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Walk | | | | | | 7 | | | | | | | | | | |
| Ped Clearance | | | | | | 19 | | | | | | | | | | |
| Min Green | 4 | 15 | | 6 | 4 | 15 | | | | | | | | | | |
| Gap Ext | 1.5 | 3 | | 2 | 1.5 | 3 | | | | | | | | | | |
| Max1 | 12 | 60 | | 20 | 12 | 60 | | | | | | | | | | |
| Max2 | | | | | | | | | | | | | | | | |
| Yellow Clr | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Red Clr | 2 | 2 | | 2 | 2 | 2 | | | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Red Revert | | | | | | | | | | | | | | | | |
| Added Initial | | | | | | | | | | | | | | | | |
| Max Initial | | | | | | | | | | | | | | | | |
| Time Before Reduce | | | | | | | | | | | | | | | | |
| Cars Before Reduce | | | | | | | | | | | | | | | | |
| Time To Reduce | | | | | | | | | | | | | | | | |
| Reduce By | | | | | | | | | | | | | | | | |
| Min Gap | | | | | | | | | | | | | | | | |
| Dynamic Max Limit | | | | | | | | | | | | | | | | |
| Dynamic Max Step | | | | | | | | | | | | | | | | |
| Enable | ON | ON | | ON | ON | ON | | | | | | | | | | |
| Auto Flash Entry | | | | ON | | | | ON | | | | | | | | |
| Auto Flash Exit | | ON | | | | ON | | | | | | | | | | |
| Non-Actuated 1 | | | | | | | | | | | | | | | | |
| Non-Actuated 2 | | | | | | | | | | | | | | | | |
| Lock Call | | | | | | | | | | | | | | | | |
| Min Recall | | ON | | | | ON | | | | | | | | | | |
| Max Recall | | | | | | | | | | | | | | | | |
| Ped Recall | | | | | | | | | | | | | | | | |
| Soft Recall | | | | | | | | | | | | | | | | |
| Dual Entry | | | | | | | | | | | | | | | | |
| Sim Gap Enable | | | | | | | | | ON | ON | ON | ON | ON | ON | ON | ON |
| Guar Passage | | | | | | | | | | | | | | | | |
| Rest In Walk | | | | | | ON | | | | | | | | | | |
| Cond Service | | | | | | | | | | | | | | | | |
| Add Init Calc | | | | | | | | | | | | | | | | |
| Concurrent Ps | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | | | | | | | | |

Preemption

| Channel | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------------------|----|----|----|----|----|----|
| Lock Input | ON | ON | ON | ON | ON | ON |
| Override Auto Flash | ON | ON | ON | ON | ON | ON |
| Override Higher Preempt | ON | ON | ON | ON | ON | ON |
| Flash in Dwell | ON | ON | ON | ON | ON | ON |
| Link to Preempt | | | | | | |
| Delay | | | | | | |
| Min Duration | | | | | | |
| Min Green | | | | | | |
| Min Walk | | | | | | |
| Ped Clear | | | | | | |
| Track Green | | | | | | |
| Min Dwell | | | | | | |
| Max Presence | | | | | | |
| Track Veh 1 | | | | | | |
| Track Veh 2 | | | | | | |
| Track Veh 3 | | | | | | |
| Track Veh 4 | | | | | | |
| Dwell Cyc Veh 1 | | | | | | |
| Dwell Cyc Veh 2 | | | | | | |
| Dwell Cyc Veh 3 | | | | | | |
| Dwell Cyc Veh 4 | | | | | | |
| Dwell Cyc Veh 5 | | | | | | |

Preempt LP

| Channel | 1 | 2 | 3 | 4 |
|------------------|-----|-----|-----|-----|
| Min | | | | |
| Max | | | | |
| Enable | | | | |
| Lock Mode | MAX | MAX | MAX | MAX |
| Coord in Preempt | | | | |
| No Skip | | | | |
| Priority P1 | | | | |
| Priority P2 | | | | |
| Priority P3 | | | | |
| Priority P4 | | | | |
| Lock | | | | |
| Headway | | | | |
| Group Lock | | | | |
| Queue Jump | | | | |
| Free Mode | | | | |
| Alt Table | | | | |

Attachment C

**PSCF, Historical Data, Growth Rate,
and Committed Developments
Information**

2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 8630 WEST-W OF US441

| WEEK | DATES | SF | MOCF: 0.97 PSCF |
|------|-------------------------|------|--------------------|
| 1 | 01/01/2022 - 01/01/2022 | 0.99 | 1.02 |
| 2 | 01/02/2022 - 01/08/2022 | 1.01 | 1.04 |
| 3 | 01/09/2022 - 01/15/2022 | 1.02 | 1.05 |
| 4 | 01/16/2022 - 01/22/2022 | 1.01 | 1.04 |
| 5 | 01/23/2022 - 01/29/2022 | 1.00 | 1.03 |
| 6 | 01/30/2022 - 02/05/2022 | 0.98 | 1.01 |
| * 7 | 02/06/2022 - 02/12/2022 | 0.97 | 1.00 |
| * 8 | 02/13/2022 - 02/19/2022 | 0.96 | 0.99 |
| * 9 | 02/20/2022 - 02/26/2022 | 0.96 | 0.99 |
| *10 | 02/27/2022 - 03/05/2022 | 0.96 | 0.99 |
| *11 | 03/06/2022 - 03/12/2022 | 0.96 | 0.99 |
| *12 | 03/13/2022 - 03/19/2022 | 0.96 | 0.99 |
| *13 | 03/20/2022 - 03/26/2022 | 0.96 | 0.99 |
| *14 | 03/27/2022 - 04/02/2022 | 0.97 | 1.00 |
| *15 | 04/03/2022 - 04/09/2022 | 0.97 | 1.00 |
| *16 | 04/10/2022 - 04/16/2022 | 0.97 | 1.00 |
| *17 | 04/17/2022 - 04/23/2022 | 0.97 | 1.00 |
| *18 | 04/24/2022 - 04/30/2022 | 0.98 | 1.01 |
| *19 | 05/01/2022 - 05/07/2022 | 0.98 | 1.01 |
| 20 | 05/08/2022 - 05/14/2022 | 0.99 | 1.02 |
| 21 | 05/15/2022 - 05/21/2022 | 1.00 | 1.03 |
| 22 | 05/22/2022 - 05/28/2022 | 1.01 | 1.04 |
| 23 | 05/29/2022 - 06/04/2022 | 1.02 | 1.05 |
| 24 | 06/05/2022 - 06/11/2022 | 1.03 | 1.06 |
| 25 | 06/12/2022 - 06/18/2022 | 1.04 | 1.07 |
| 26 | 06/19/2022 - 06/25/2022 | 1.04 | 1.07 |
| 27 | 06/26/2022 - 07/02/2022 | 1.05 | 1.08 |
| 28 | 07/03/2022 - 07/09/2022 | 1.05 | 1.08 |
| 29 | 07/10/2022 - 07/16/2022 | 1.06 | 1.09 |
| 30 | 07/17/2022 - 07/23/2022 | 1.05 | 1.08 |
| 31 | 07/24/2022 - 07/30/2022 | 1.04 | 1.07 |
| 32 | 07/31/2022 - 08/06/2022 | 1.03 | 1.06 |
| 33 | 08/07/2022 - 08/13/2022 | 1.02 | 1.05 |
| 34 | 08/14/2022 - 08/20/2022 | 1.01 | 1.04 |
| 35 | 08/21/2022 - 08/27/2022 | 1.02 | 1.05 |
| 36 | 08/28/2022 - 09/03/2022 | 1.02 | 1.05 |
| 37 | 09/04/2022 - 09/10/2022 | 1.03 | 1.06 |
| 38 | 09/11/2022 - 09/17/2022 | 1.03 | 1.06 |
| 39 | 09/18/2022 - 09/24/2022 | 1.02 | 1.05 |
| 40 | 09/25/2022 - 10/01/2022 | 1.01 | 1.04 |
| 41 | 10/02/2022 - 10/08/2022 | 0.99 | 1.02 |
| 42 | 10/09/2022 - 10/15/2022 | 0.98 | 1.01 |
| 43 | 10/16/2022 - 10/22/2022 | 0.99 | 1.02 |
| 44 | 10/23/2022 - 10/29/2022 | 1.00 | 1.03 |
| 45 | 10/30/2022 - 11/05/2022 | 1.00 | 1.03 |
| 46 | 11/06/2022 - 11/12/2022 | 1.01 | 1.04 |
| 47 | 11/13/2022 - 11/19/2022 | 1.02 | 1.05 |
| 48 | 11/20/2022 - 11/26/2022 | 1.01 | 1.04 |
| 49 | 11/27/2022 - 12/03/2022 | 1.01 | 1.04 |
| 50 | 12/04/2022 - 12/10/2022 | 1.00 | 1.03 |
| 51 | 12/11/2022 - 12/17/2022 | 0.99 | 1.02 |
| 52 | 12/18/2022 - 12/24/2022 | 1.01 | 1.04 |
| 53 | 12/25/2022 - 12/31/2022 | 1.02 | 1.05 |

* PEAK SEASON

23-FEB-2023 09:11:21

830UPD

4_8630_PKSEASON.TXT

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2022 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 0115 - SR 818 / GRIFFIN RD - E OF NOB HILL RD

| YEAR | AADT | | DIRECTION 1 | | DIRECTION 2 | *K FACTOR | D FACTOR | T FACTOR |
|------|-------|---|-------------|--|-------------|-----------|----------|----------|
| 2022 | 38500 | C | E 19500 | | W 19000 | 9.00 | 53.80 | 3.40 |
| 2021 | 25500 | C | E 15000 | | W 10500 | 9.00 | 54.00 | 3.40 |
| 2020 | 35500 | F | E 17500 | | W 18000 | 9.00 | 55.10 | 4.70 |
| 2019 | 37500 | C | E 18500 | | W 19000 | 9.00 | 56.00 | 4.70 |
| 2018 | 32000 | C | E 16500 | | W 15500 | 9.00 | 56.30 | 4.70 |
| 2017 | 37500 | C | E 20000 | | W 17500 | 9.00 | 57.10 | 3.10 |
| 2016 | 35000 | C | E 17500 | | W 17500 | 9.00 | 56.10 | 3.10 |
| 2015 | 32500 | C | E 19000 | | W 13500 | 9.00 | 56.20 | 3.10 |
| 2014 | 34000 | C | E 17500 | | W 16500 | 9.00 | 56.80 | 6.20 |
| 2013 | 33000 | C | E 17500 | | W 15500 | 9.00 | 56.20 | 3.80 |
| 2012 | 35500 | C | E 18500 | | W 17000 | 9.00 | 57.00 | 6.50 |
| 2011 | 35500 | C | E 18000 | | W 17500 | 9.00 | 59.10 | 4.80 |
| 2010 | 30500 | C | E 16000 | | W 14500 | 9.60 | 57.92 | 3.70 |
| 2009 | 32500 | C | E 16500 | | W 16000 | 9.71 | 58.42 | 4.90 |
| 2008 | 32000 | C | E 17000 | | W 15000 | 9.67 | 56.67 | 3.90 |
| 2007 | 29500 | C | E 16000 | | W 13500 | 10.19 | 60.63 | 3.90 |

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

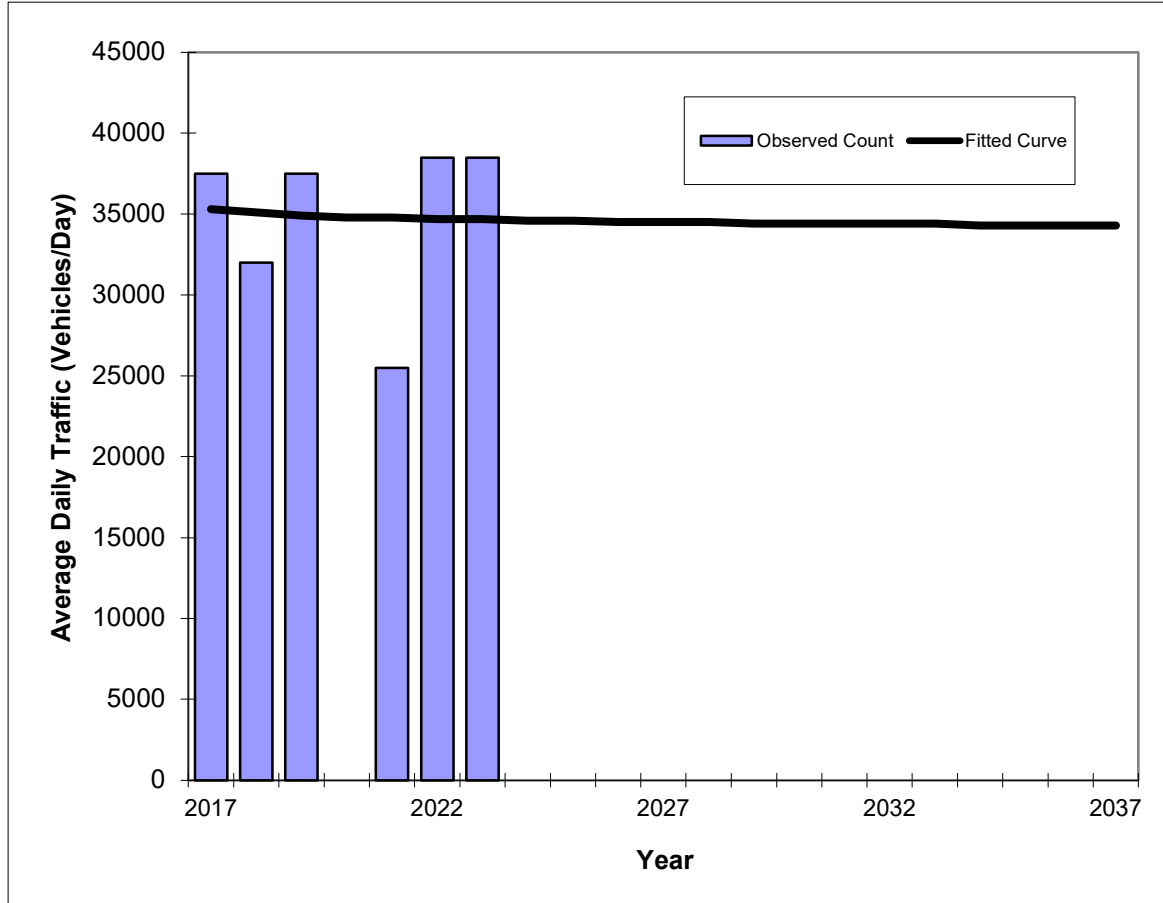
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V03.a

SR 818 / GRIFFIN RD -- E OF NOB HILL RD

| | |
|----------|---|
| FIN# | 0 |
| Location | 1 |

| | |
|------------|---------------------|
| County: | BROWARD |
| Station #: | 0115 |
| Highway: | SR 818 / GRIFFIN RD |



| Year | Traffic (ADT/AADT) | |
|----------------------------------|--------------------|---------|
| | Count* | Trend** |
| 2017 | 37500 | 35300 |
| 2018 | 32000 | 35100 |
| 2019 | 37500 | 34900 |
| 2020 | N/A | N/A |
| 2021 | 25500 | 34800 |
| 2022 | 38500 | 34700 |
| 2023 | 38500 | 34700 |
| 2023 Opening Year Trend | | |
| 2023 | N/A | 34700 |
| 2024 Mid-Year Trend | | |
| 2024 | N/A | 34600 |
| 2025 Design Year Trend | | |
| 2025 | N/A | 34600 |
| TRANPLAN Forecasts/Trends | | |
| | | |

| | |
|---|-----------|
| Trend R-squared: | 0.24% |
| Compounded Annual Historic Growth Rate: | -0.34% |
| Compounded Growth Rate (2022 to Design Year): | -0.10% |
| Printed: | 30-Aug-23 |
| Decaying Exponential Growth Option | |

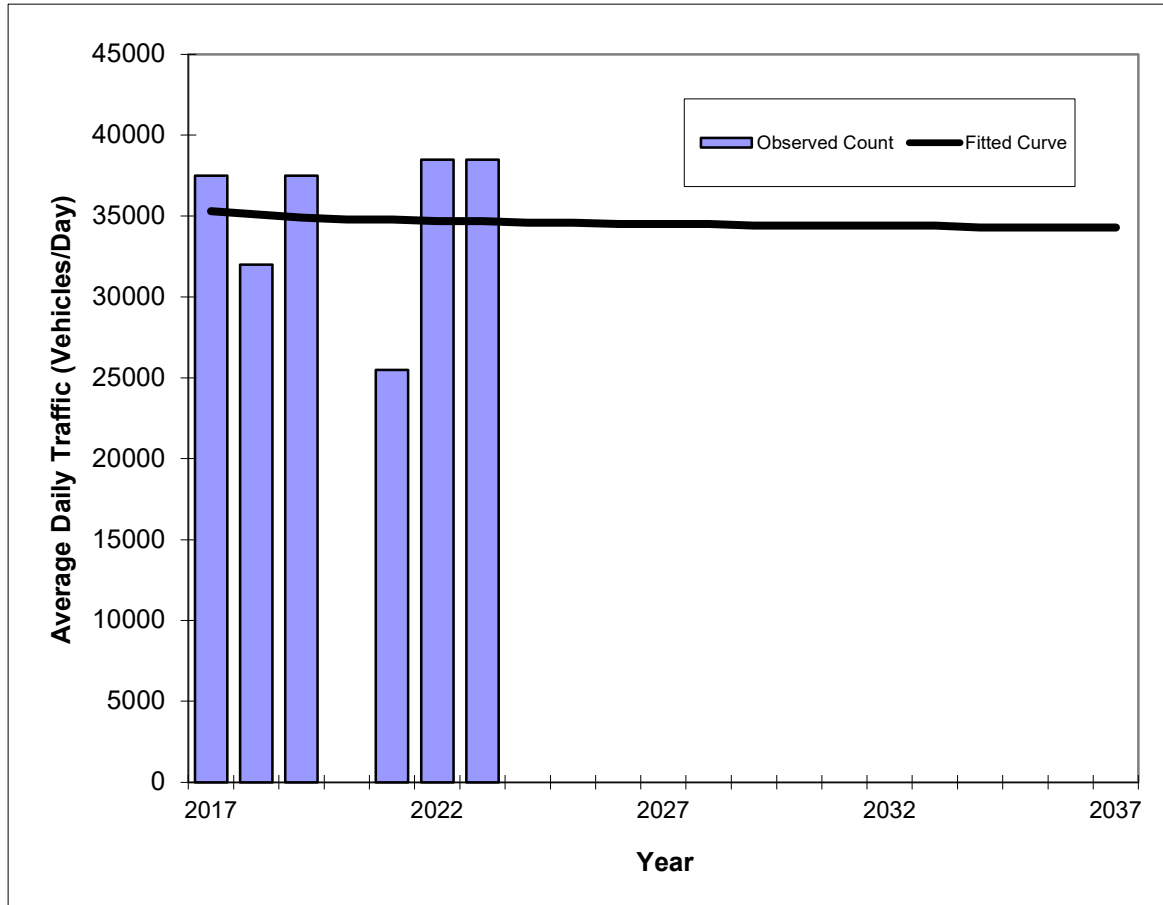
*Axle-Adjusted

Traffic Trends - V03.a

SR 818 / GRIFFIN RD -- E OF NOB HILL RD

| | |
|----------|---|
| FIN# | 0 |
| Location | 1 |

| | |
|------------|---------------------|
| County: | BROWARD |
| Station #: | 0115 |
| Highway: | SR 818 / GRIFFIN RD |



| Year | Traffic (ADT/AADT) | |
|----------------------------------|--------------------|---------|
| | Count* | Trend** |
| 2017 | 37500 | 35300 |
| 2018 | 32000 | 35100 |
| 2019 | 37500 | 34900 |
| 2020 | N/A | N/A |
| 2021 | 25500 | 34800 |
| 2022 | 38500 | 34700 |
| 2023 | 38500 | 34700 |
| 2023 Opening Year Trend | | |
| 2023 | N/A | 34700 |
| 2024 Mid-Year Trend | | |
| 2024 | N/A | 34600 |
| 2025 Design Year Trend | | |
| 2025 | N/A | 34600 |
| TRANPLAN Forecasts/Trends | | |
| | | |

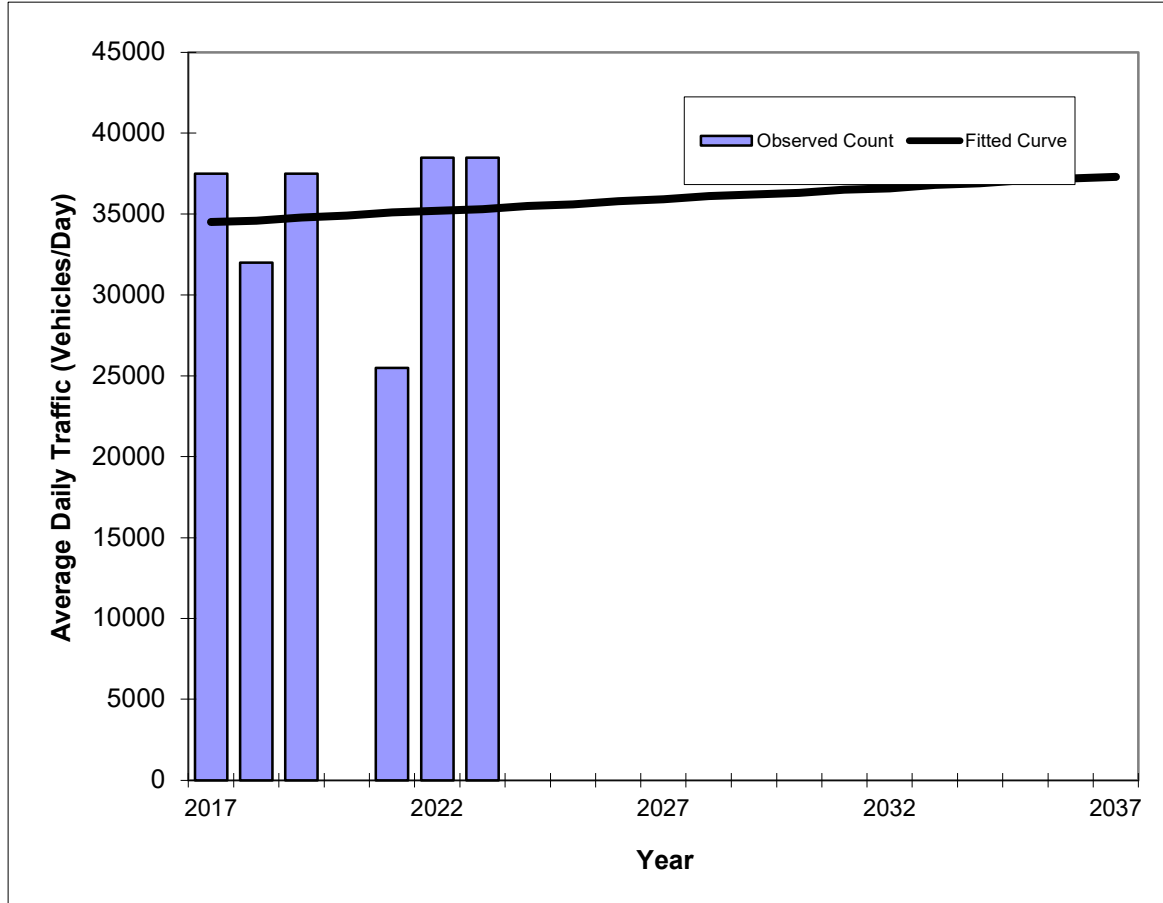
| | |
|---|-----------|
| Trend R-squared: | 0.11% |
| Compounded Annual Historic Growth Rate: | -0.34% |
| Compounded Growth Rate (2022 to Design Year): | -0.10% |
| Printed: | 30-Aug-23 |
| Exponential Growth Option | |

*Axle-Adjusted

Traffic Trends - V03.a
SR 818 / GRIFFIN RD -- E OF NOB HILL RD

| | |
|----------|---|
| FIN# | 0 |
| Location | 1 |

| | |
|------------|---------------------|
| County: | BROWARD |
| Station #: | 0115 |
| Highway: | SR 818 / GRIFFIN RD |



| Year | Traffic (ADT/AADT) | |
|----------------------------------|--------------------|---------|
| | Count* | Trend** |
| 2017 | 37500 | 34500 |
| 2018 | 32000 | 34600 |
| 2019 | 37500 | 34800 |
| 2020 | N/A | N/A |
| 2021 | 25500 | 35100 |
| 2022 | 38500 | 35200 |
| 2023 | 38500 | 35300 |
| 2023 Opening Year Trend | | |
| 2023 | N/A | 35300 |
| 2024 Mid-Year Trend | | |
| 2024 | N/A | 35500 |
| 2025 Design Year Trend | | |
| 2025 | N/A | 35600 |
| TRANPLAN Forecasts/Trends | | |
| | | |

| | |
|--|-----------|
| ** Annual Trend Increase: | 143 |
| Trend R-squared: | 0.42% |
| Trend Annual Historic Growth Rate: | 0.41% |
| Trend Growth Rate (2022 to Design Year): | 0.38% |
| Printed: | 30-Aug-23 |

Straight Line Growth Option

*Axle-Adjusted

Growth Rate Trend Analysis Calculations

| Description | 115 | | |
|---|-------------|-------------|----------------------|
| Option | Linear | Exponential | Decaying Exponential |
| Trend Growth Rate 5 years | 0.41 | -0.34 | -0.34 |
| Adjusted Growth Rate 5-years (2) | 0.41 | 0.50 | 0.50 |
| Trend R-squared 5 years | 0.42 | 0.11 | 0.24 |
| Growth Rate with highest R-squared (5-year) | 0.41 | | |
| Average Growth Rate (5-year) | 0.47 | | |
| Growth Rate Used | 1.00 | | |

Notes:

1: Refer to Trend Analysis Chart

2: If the resulting growth rate is negative, a 0.5 growth rate was used

What Is R-squared?

R-squared is a statistical measure of how close the data are to the fitted regression line. It is also known as the coefficient of determination, or the coefficient of multiple determination for multiple regression.

The definition of R-squared is fairly straight-forward; it is the percentage of the response variable variation that is explained by a linear model. Or:

R-squared = Explained variation / Total variation

R-squared is always between 0 and 100%:

0% indicates that the model explains none of the variability of the response data around its mean.

100% indicates that the model explains all the variability of the response data around its mean.

In general, the higher the R-squared, the better the model fits your data. However, there are important conditions for this guideline that I'll talk about both in this post and my next post.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Griffin Road and SW 106th Avenue AM Peak Hour

| Description | SW 106th Avenue Northbound | | | Southbound | | | Griffin Road Eastbound | | | Griffin Road Westbound | | |
|---|----------------------------|----------|------------|------------|----------|----------|------------------------|--------------|-----------|------------------------|--------------|----------|
| | Left | Through | Right | Left | Through | Right | Left | Through | Right | Left | Through | Right |
| Existing Traffic (4/2/2019) (source: Chabad) | 104 | | 193 | | | | 22 | 1,509 | 61 | 120 | 1,105 | |
| PSCF (Chabad) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Growth Rate (Chabad) | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% |
| 2020 Peak Season Traffic | 107 | 0 | 199 | 0 | 0 | 0 | 23 | 1,558 | 63 | 124 | 1,141 | 0 |
| Annual Growth Rate | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% |
| Committed Development | | | | | | | | | | | | |
| Committed (Source: Chabad) | 9 | | 9 | | | | | 34 | 4 | 3 | 55 | |
| Chabad Phases 1 & 2 | 4 | | 9 | | | | | | 4 | 11 | | |
| 2022 Background Traffic | 127 | 0 | 230 | 0 | 0 | 0 | 24 | 1,694 | 75 | 146 | 1,271 | 0 |
| Kingfisher Reserve | 6 | | 6 | | | | | | 2 | 2 | | |
| 2022 Total Traffic | 133 | 0 | 236 | 0 | 0 | 0 | 24 | 1,694 | 77 | 148 | 1,271 | 0 |

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Griffin Road and SW 106th Avenue PM Peak Hour

| Description | SW 106th Avenue Northbound | | | Southbound | | | Griffin Road Eastbound | | | Griffin Road Westbound | | |
|---|----------------------------|----------|------------|------------|----------|----------|------------------------|--------------|------------|------------------------|--------------|----------|
| | Left | Through | Right | Left | Through | Right | Left | Through | Right | Left | Through | Right |
| Existing Traffic (4/2/2019) (source: Chabad) | 96 | | 146 | | | | 31 | 1,604 | 139 | 185 | 1,414 | |
| PSCF (Chabad) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Growth Rate (Chabad) | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% |
| 2020 Peak Season Traffic | 99 | 0 | 151 | 0 | 0 | 0 | 32 | 1,656 | 143 | 191 | 1,460 | 0 |
| Annual Growth Rate | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% | 3.23% |
| Committed Development | | | | | | | | | | | | |
| Committed (Source: Chabad) | 4 | | 4 | | | | | 22 | 7 | 7 | 22 | |
| Chabad Phases 1 & 2 | 4 | | 10 | | | | | | 4 | 11 | | |
| 2022 Background Traffic | 114 | 0 | 175 | 0 | 0 | 0 | 34 | 1,787 | 164 | 222 | 1,577 | 0 |
| Kingfisher Reserve | 3 | | 4 | | | | | | 6 | 6 | | |
| 2022 Total Traffic | 117 | 0 | 179 | 0 | 0 | 0 | 34 | 1,787 | 170 | 228 | 1,577 | 0 |

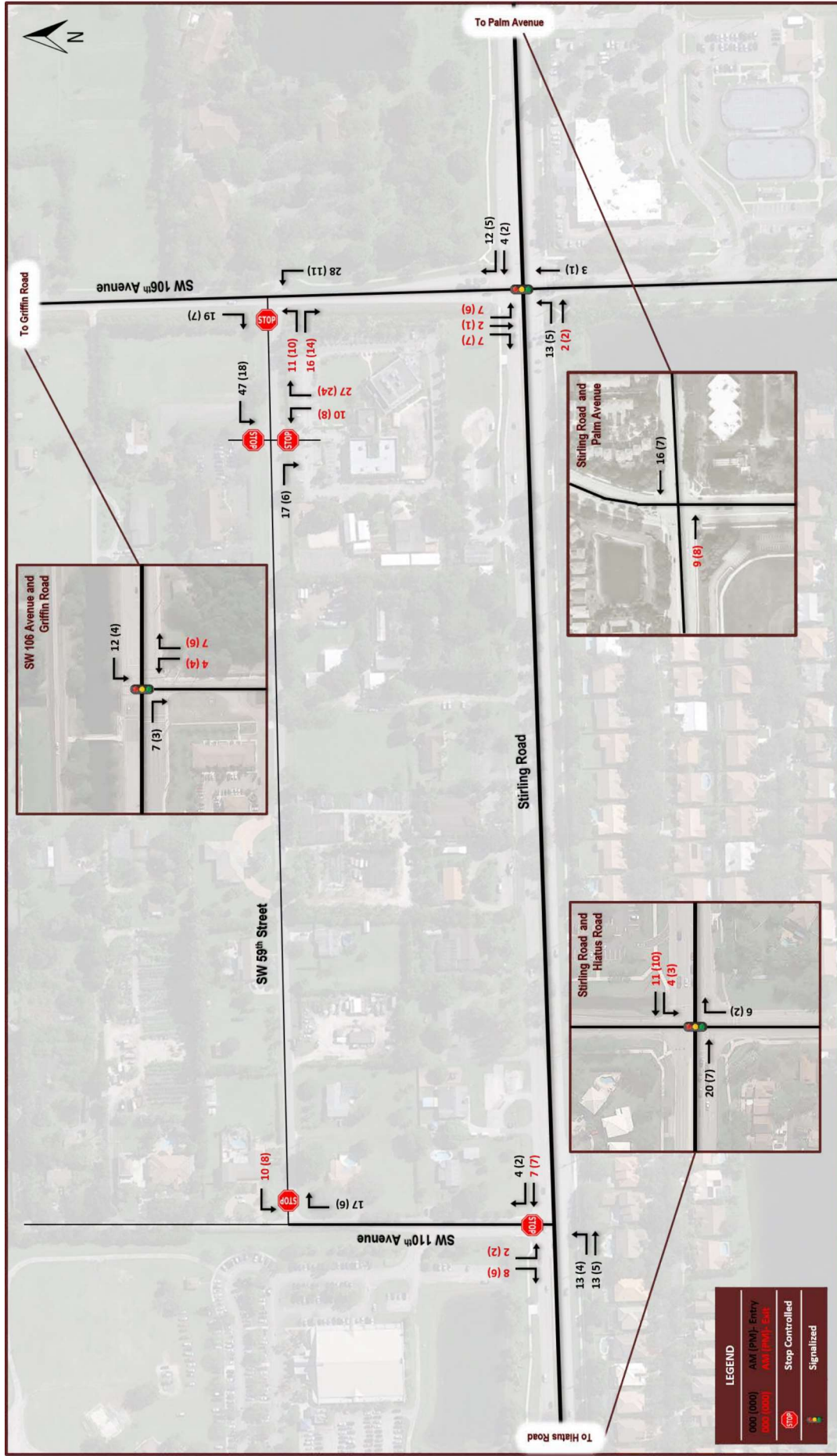


Figure 11: Scenario 3 -Build-out Trip Assignment (School)

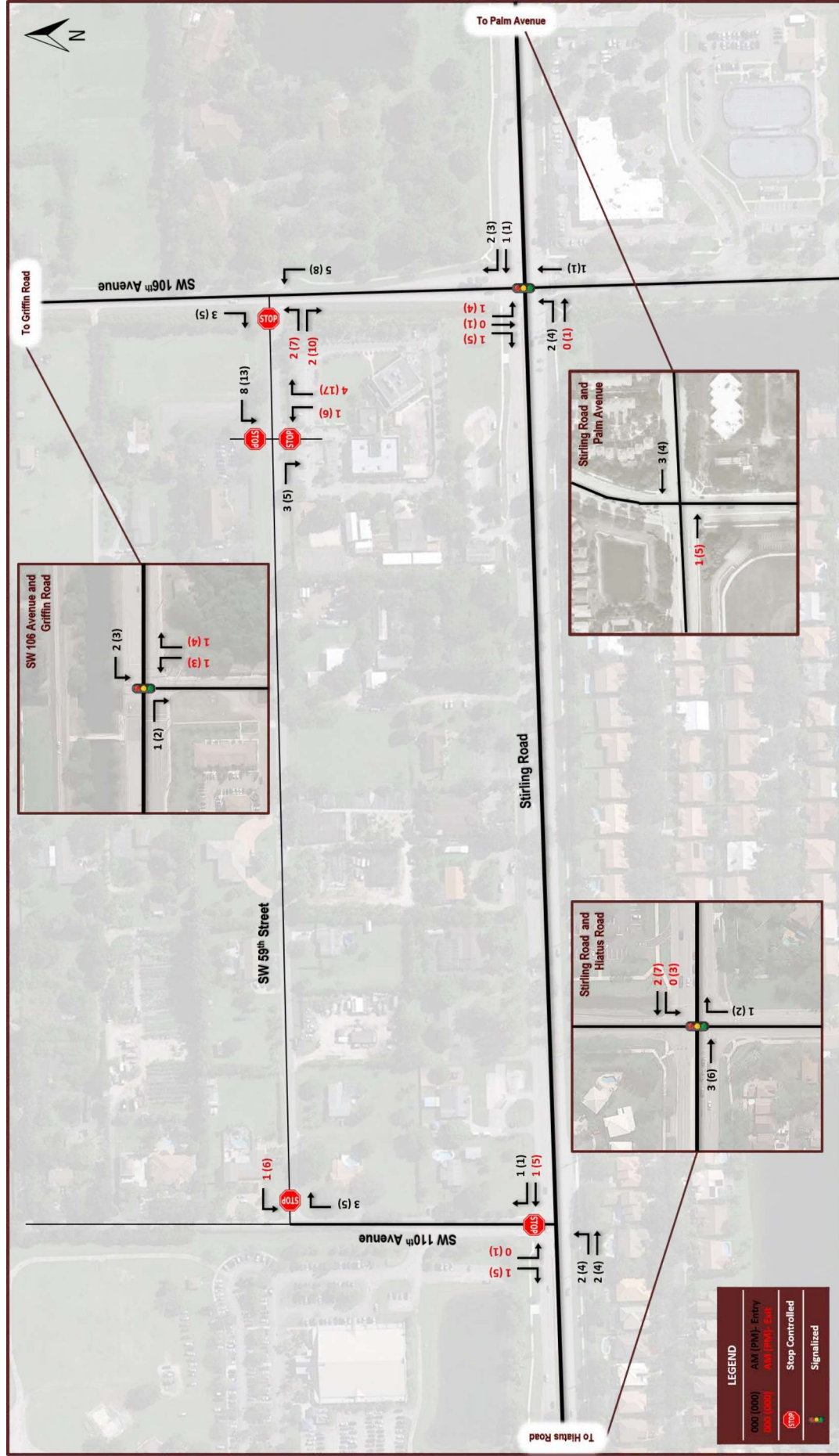


Figure 12: Scenario 3 -Build-out Trip Assignment (Mosque)

Attachment D
Future Turning Movement Volumes

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

**Griffin Road and SW 106th Avenue
AM Peak Hour**

| Description | SW 106th Avenue Northbound | | | Southbound | | | Griffin Road Eastbound | | | Griffin Road Westbound | | |
|--------------------------------|----------------------------|----------|------------|------------|----------|----------|------------------------|--------------|------------|------------------------|--------------|----------|
| | Left | Through | Right | Left | Through | Right | U-Turn | Through | Right | Left | Through | Right |
| Existing Traffic (5/24/2023) | 170 | | 218 | | | | 50 | 1,359 | 104 | 125 | 1,121 | |
| Season Adjustment Factor | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| 2023 Peak Season Traffic | 177 | 0 | 227 | 0 | 0 | 0 | 52 | 1413 | 108 | 130 | 1166 | 0 |
| Annual Growth Rate | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% |
| Committed Developments: | | | | | | | | | | | | |
| Committed (Source: Chabad) | 9 | | 9 | | | | | 34 | 4 | 3 | 55 | |
| Chabad Phases 1& 2 | 9 | | 9 | | | | | | 4 | 11 | | |
| Kingfisher Reserve | 6 | | 6 | | | | | | 2 | 2 | | |
| Nur-UI-Islam of South Florida | 5 | | 8 | | | | | | 8 | 14 | | |
| 2025 Background Traffic | 209 | 0 | 263 | 0 | 0 | 0 | 53 | 1,476 | 128 | 163 | 1,244 | 0 |
| Project | | | | | | | | 3 | | 5 | 9 | |
| 2025 Total Traffic | 209 | 0 | 263 | 0 | 0 | 0 | 53 | 1,479 | 128 | 168 | 1,253 | 0 |

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

**Griffin Road and SW 106th Avenue
PM Peak Hour**

| Description | SW 106th Avenue Northbound | | | Southbound | | | Griffin Road Eastbound | | | Griffin Road Westbound | | |
|--------------------------------|----------------------------|----------|------------|------------|----------|----------|------------------------|--------------|------------|------------------------|--------------|----------|
| | Left | Through | Right | Left | Through | Right | U-Turn | Through | Right | Left | Through | Right |
| Existing Traffic (5/24/2023) | 89 | | 119 | | | | 43 | 1,262 | 84 | 141 | 1,130 | |
| Season Adjustment Factor | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| 2023 Peak Season Traffic | 93 | 0 | 124 | 0 | 0 | 0 | 45 | 1312 | 87 | 147 | 1175 | 0 |
| Annual Growth Rate | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% |
| Committed Developments: | | | | | | | | | | | | |
| Committed (Source: Chabad) | 4 | | 4 | | | | | 22 | 7 | 7 | 22 | |
| Chabad Phases 1& 2 | 4 | | 10 | | | | | | 4 | 11 | | |
| Kingfisher Reserve | 3 | | 4 | | | | | | 6 | 6 | | |
| Nur-UI-Islam of South Florida | 7 | | 10 | | | | | | 5 | 7 | | |
| 2025 Background Traffic | 112 | 0 | 154 | 0 | 0 | 0 | 46 | 1,361 | 111 | 181 | 1,221 | 0 |
| Project | | | | | | | 10 | | | 15 | 6 | |
| 2025 Total Traffic | 112 | 0 | 154 | 0 | 0 | 0 | 46 | 1,371 | 111 | 196 | 1,227 | 0 |

Attachment E
SYNCHRO Analyses

Timings

101: SW 106th Avenue & Griffin Road



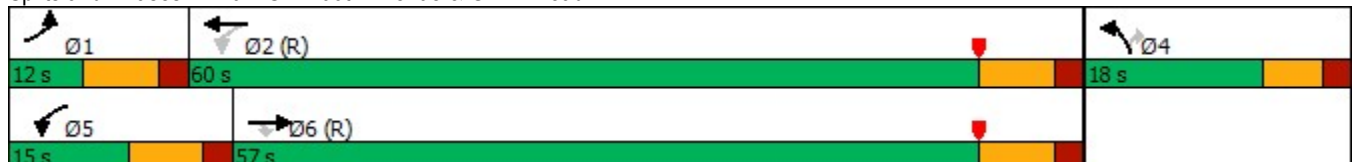
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↑↑↑ | ↗ | ↖ | ↑↑↑ | ↖ | ↗ |
| Traffic Volume (vph) | 52 | 1413 | 108 | 130 | 1166 | 177 | 227 |
| Future Volume (vph) | 52 | 1413 | 108 | 130 | 1166 | 177 | 227 |
| Turn Type | Prot | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | 4 | |
| Permitted Phases | | | 6 | 2 | | | 4 |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 4 | 4 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 4.0 | 15.0 | 15.0 | 4.0 | 15.0 | 6.0 | 6.0 |
| Minimum Split (s) | 11.0 | 33.0 | 33.0 | 11.0 | 33.0 | 13.0 | 13.0 |
| Total Split (s) | 12.0 | 57.0 | 57.0 | 15.0 | 60.0 | 18.0 | 18.0 |
| Total Split (%) | 13.3% | 63.3% | 63.3% | 16.7% | 66.7% | 20.0% | 20.0% |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | Max | Max |
| Act Effect Green (s) | 4.8 | 51.7 | 51.7 | 60.8 | 55.4 | 12.0 | 12.0 |
| Actuated g/C Ratio | 0.05 | 0.57 | 0.57 | 0.68 | 0.62 | 0.13 | 0.13 |
| v/c Ratio | 0.61 | 0.54 | 0.13 | 0.58 | 0.42 | 0.83 | 0.77 |
| Control Delay | 69.3 | 12.9 | 2.2 | 16.6 | 10.0 | 67.9 | 35.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 69.3 | 12.9 | 2.2 | 16.6 | 10.0 | 67.9 | 35.4 |
| LOS | E | B | A | B | A | E | D |
| Approach Delay | | 14.0 | | | 10.6 | | |
| Approach LOS | | B | | | B | | |

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 66 (73%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 17.1
 Intersection Capacity Utilization 59.3%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 101: SW 106th Avenue & Griffin Road



Queues

101: SW 106th Avenue & Griffin Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 58 | 1570 | 120 | 144 | 1296 | 197 | 252 |
| v/c Ratio | 0.61 | 0.54 | 0.13 | 0.58 | 0.42 | 0.83 | 0.77 |
| Control Delay | 69.3 | 12.9 | 2.2 | 16.6 | 10.0 | 67.9 | 35.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 69.3 | 12.9 | 2.2 | 16.6 | 10.0 | 67.9 | 35.4 |
| Queue Length 50th (ft) | 33 | 187 | 0 | 21 | 137 | 111 | 64 |
| Queue Length 95th (ft) | #88 | 238 | 23 | 60 | 169 | #228 | #182 |
| Internal Link Dist (ft) | | 935 | | | 687 | | |
| Turn Bay Length (ft) | 325 | | 210 | 330 | | 85 | |
| Base Capacity (vph) | 98 | 2892 | 952 | 280 | 3099 | 236 | 326 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.54 | 0.13 | 0.51 | 0.42 | 0.83 | 0.77 |

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 101: SW 106th Avenue & Griffin Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|-------|-------|-----|-----|-----|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 52 | 1413 | 108 | 130 | 1166 | 0 | 177 | 0 | 227 | 0 | 0 | 0 |
| Future Volume (veh/h) | 52 | 1413 | 108 | 130 | 1166 | 0 | 177 | 0 | 227 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1856 | 1856 | 1856 | 1856 | 0 | 1870 | 0 | 1870 | | | |
| Adj Flow Rate, veh/h | 58 | 1570 | 120 | 144 | 1296 | 0 | 197 | 0 | 252 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | | | |
| Percent Heavy Veh, % | 2 | 3 | 3 | 3 | 3 | 0 | 2 | 0 | 2 | | | |
| Cap, veh/h | 74 | 2998 | 931 | 291 | 3053 | 0 | 238 | 0 | 211 | | | |
| Arrive On Green | 0.04 | 0.59 | 0.59 | 0.05 | 0.60 | 0.00 | 0.13 | 0.00 | 0.13 | | | |
| Sat Flow, veh/h | 1781 | 5066 | 1572 | 1767 | 5233 | 0 | 1781 | 0 | 1585 | | | |
| Grp Volume(v), veh/h | 58 | 1570 | 120 | 144 | 1296 | 0 | 197 | 0 | 252 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1689 | 1572 | 1767 | 1689 | 0 | 1781 | 0 | 1585 | | | |
| Q Serve(g_s), s | 2.9 | 16.5 | 3.0 | 2.8 | 12.3 | 0.0 | 9.7 | 0.0 | 12.0 | | | |
| Cycle Q Clear(g_c), s | 2.9 | 16.5 | 3.0 | 2.8 | 12.3 | 0.0 | 9.7 | 0.0 | 12.0 | | | |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 74 | 2998 | 931 | 291 | 3053 | 0 | 238 | 0 | 211 | | | |
| V/C Ratio(X) | 0.78 | 0.52 | 0.13 | 0.49 | 0.42 | 0.00 | 0.83 | 0.00 | 1.19 | | | |
| Avail Cap(c_a), veh/h | 99 | 2998 | 931 | 355 | 3053 | 0 | 238 | 0 | 211 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 42.7 | 10.9 | 8.1 | 9.2 | 9.5 | 0.0 | 38.0 | 0.0 | 39.0 | | | |
| Incr Delay (d2), s/veh | 17.5 | 0.7 | 0.3 | 0.5 | 0.4 | 0.0 | 27.2 | 0.0 | 123.6 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(95%),veh/ln | 2.9 | 9.0 | 1.7 | 1.6 | 6.9 | 0.0 | 9.9 | 0.0 | 25.8 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 60.2 | 11.5 | 8.4 | 9.7 | 10.0 | 0.0 | 65.2 | 0.0 | 162.6 | | | |
| LnGrp LOS | E | B | A | A | A | A | E | A | F | | | |
| Approach Vol, veh/h | | 1748 | | | 1440 | | | 449 | | | | |
| Approach Delay, s/veh | | 12.9 | | | 9.9 | | | 119.9 | | | | |
| Approach LOS | | B | | | A | | | F | | | | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | 10.8 | 61.2 | | 18.0 | 11.7 | 60.3 | | | | | | |
| Change Period (Y+Rc), s | 7.0 | 7.0 | | 6.0 | 7.0 | 7.0 | | | | | | |
| Max Green Setting (Gmax), s | 5.0 | 53.0 | | 12.0 | 8.0 | 50.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 4.9 | 14.3 | | 14.0 | 4.8 | 18.5 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 11.0 | | 0.0 | 0.0 | 14.1 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 24.9 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

Timings

101: SW 106th Avenue & Griffin Road



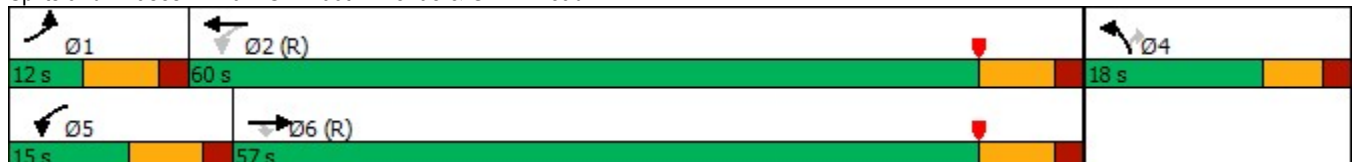
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↑↑↑ | ↗ | ↘ | ↑↑↑ | ↘ | ↗ |
| Traffic Volume (vph) | 53 | 1476 | 128 | 163 | 1244 | 209 | 263 |
| Future Volume (vph) | 53 | 1476 | 128 | 163 | 1244 | 209 | 263 |
| Turn Type | Prot | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | 4 | |
| Permitted Phases | | | 6 | 2 | | | 4 |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 4 | 4 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 4.0 | 15.0 | 15.0 | 4.0 | 15.0 | 6.0 | 6.0 |
| Minimum Split (s) | 11.0 | 33.0 | 33.0 | 11.0 | 33.0 | 13.0 | 13.0 |
| Total Split (s) | 12.0 | 57.0 | 57.0 | 15.0 | 60.0 | 18.0 | 18.0 |
| Total Split (%) | 13.3% | 63.3% | 63.3% | 16.7% | 66.7% | 20.0% | 20.0% |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | Max | Max |
| Act Effct Green (s) | 4.8 | 50.8 | 50.8 | 61.5 | 55.4 | 12.0 | 12.0 |
| Actuated g/C Ratio | 0.05 | 0.56 | 0.56 | 0.68 | 0.62 | 0.13 | 0.13 |
| v/c Ratio | 0.62 | 0.58 | 0.15 | 0.72 | 0.45 | 0.98 | 0.90 |
| Control Delay | 70.4 | 13.8 | 2.1 | 29.7 | 10.2 | 95.9 | 51.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.4 | 13.8 | 2.1 | 29.7 | 10.2 | 95.9 | 51.9 |
| LOS | E | B | A | C | B | F | D |
| Approach Delay | | 14.7 | | | 12.5 | | |
| Approach LOS | | B | | | B | | |

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 66 (73%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 21.4
 Intersection Capacity Utilization 64.1%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 101: SW 106th Avenue & Griffin Road



Queues

101: SW 106th Avenue & Griffin Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 59 | 1640 | 142 | 181 | 1382 | 232 | 292 |
| v/c Ratio | 0.62 | 0.58 | 0.15 | 0.72 | 0.45 | 0.98 | 0.90 |
| Control Delay | 70.4 | 13.8 | 2.1 | 29.7 | 10.2 | 95.9 | 51.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.4 | 13.8 | 2.1 | 29.7 | 10.2 | 95.9 | 51.9 |
| Queue Length 50th (ft) | 34 | 210 | 0 | 30 | 149 | 134 | 91 |
| Queue Length 95th (ft) | #91 | 254 | 24 | #121 | 183 | #278 | #241 |
| Internal Link Dist (ft) | | 935 | | | 687 | | |
| Turn Bay Length (ft) | 325 | | 210 | 330 | | 85 | |
| Base Capacity (vph) | 98 | 2843 | 947 | 265 | 3099 | 236 | 326 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.58 | 0.15 | 0.68 | 0.45 | 0.98 | 0.90 |

Intersection Summary

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

HCM 6th Signalized Intersection Summary

101: SW 106th Avenue & Griffin Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|-------|-------|-----|-----|-----|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 53 | 1476 | 128 | 163 | 1244 | 0 | 209 | 0 | 263 | 0 | 0 | 0 |
| Future Volume (veh/h) | 53 | 1476 | 128 | 163 | 1244 | 0 | 209 | 0 | 263 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1856 | 1856 | 1856 | 1856 | 0 | 1870 | 0 | 1870 | | | |
| Adj Flow Rate, veh/h | 59 | 1640 | 142 | 181 | 1382 | 0 | 232 | 0 | 292 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | | | |
| Percent Heavy Veh, % | 2 | 3 | 3 | 3 | 3 | 0 | 2 | 0 | 2 | | | |
| Cap, veh/h | 76 | 2948 | 915 | 291 | 3050 | 0 | 238 | 0 | 211 | | | |
| Arrive On Green | 0.04 | 0.58 | 0.58 | 0.06 | 0.60 | 0.00 | 0.13 | 0.00 | 0.13 | | | |
| Sat Flow, veh/h | 1781 | 5066 | 1572 | 1767 | 5233 | 0 | 1781 | 0 | 1585 | | | |
| Grp Volume(v), veh/h | 59 | 1640 | 142 | 181 | 1382 | 0 | 232 | 0 | 292 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1689 | 1572 | 1767 | 1689 | 0 | 1781 | 0 | 1585 | | | |
| Q Serve(g_s), s | 3.0 | 18.0 | 3.7 | 3.7 | 13.4 | 0.0 | 11.7 | 0.0 | 12.0 | | | |
| Cycle Q Clear(g_c), s | 3.0 | 18.0 | 3.7 | 3.7 | 13.4 | 0.0 | 11.7 | 0.0 | 12.0 | | | |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 76 | 2948 | 915 | 291 | 3050 | 0 | 238 | 0 | 211 | | | |
| V/C Ratio(X) | 0.78 | 0.56 | 0.16 | 0.62 | 0.45 | 0.00 | 0.98 | 0.00 | 1.38 | | | |
| Avail Cap(c_a), veh/h | 99 | 2948 | 915 | 338 | 3050 | 0 | 238 | 0 | 211 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 42.7 | 11.6 | 8.6 | 12.0 | 9.8 | 0.0 | 38.9 | 0.0 | 39.0 | | | |
| Incr Delay (d2), s/veh | 18.3 | 0.8 | 0.4 | 1.5 | 0.5 | 0.0 | 52.7 | 0.0 | 198.4 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(95%),veh/ln | 2.9 | 9.7 | 2.1 | 2.1 | 7.5 | 0.0 | 13.2 | 0.0 | 33.1 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.0 | 12.4 | 9.0 | 13.5 | 10.3 | 0.0 | 91.6 | 0.0 | 237.4 | | | |
| LnGrp LOS | E | B | A | B | B | A | F | A | F | | | |
| Approach Vol, veh/h | | 1841 | | | 1563 | | | 524 | | | | |
| Approach Delay, s/veh | | 13.7 | | | 10.7 | | | 172.9 | | | | |
| Approach LOS | | B | | | B | | | F | | | | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | 10.8 | 61.2 | | 18.0 | 12.6 | 59.4 | | | | | | |
| Change Period (Y+Rc), s | 7.0 | 7.0 | | 6.0 | 7.0 | 7.0 | | | | | | |
| Max Green Setting (Gmax), s | 5.0 | 53.0 | | 12.0 | 8.0 | 50.0 | | | | | | |
| Max Q Clear Time (g_c+l1), s | 5.0 | 15.4 | | 14.0 | 5.7 | 20.0 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 12.0 | | 0.0 | 0.0 | 14.8 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 33.7 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |

Timings

101: SW 106th Avenue & Griffin Road



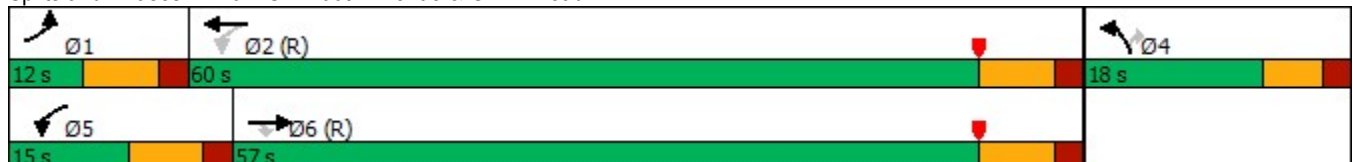
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↑↑↑ | ↗ | ↖ | ↑↑↑ | ↖ | ↗ |
| Traffic Volume (vph) | 53 | 1479 | 128 | 168 | 1253 | 209 | 263 |
| Future Volume (vph) | 53 | 1479 | 128 | 168 | 1253 | 209 | 263 |
| Turn Type | Prot | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | 4 | |
| Permitted Phases | | | 6 | 2 | | | 4 |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 4 | 4 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 5.0 | 15.0 | 15.0 | 4.0 | 15.0 | 6.0 | 6.0 |
| Minimum Split (s) | 12.0 | 33.0 | 33.0 | 11.0 | 33.0 | 13.0 | 13.0 |
| Total Split (s) | 12.0 | 57.0 | 57.0 | 15.0 | 60.0 | 18.0 | 18.0 |
| Total Split (%) | 13.3% | 63.3% | 63.3% | 16.7% | 66.7% | 20.0% | 20.0% |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | Max | Max |
| Act Effect Green (s) | 5.0 | 50.7 | 50.7 | 61.5 | 55.4 | 12.0 | 12.0 |
| Actuated g/C Ratio | 0.06 | 0.56 | 0.56 | 0.68 | 0.62 | 0.13 | 0.13 |
| v/c Ratio | 0.60 | 0.58 | 0.15 | 0.75 | 0.45 | 0.98 | 0.90 |
| Control Delay | 67.8 | 13.9 | 2.2 | 32.2 | 10.3 | 95.9 | 51.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 67.8 | 13.9 | 2.2 | 32.2 | 10.3 | 95.9 | 51.9 |
| LOS | E | B | A | C | B | F | D |
| Approach Delay | | 14.7 | | | 12.9 | | |
| Approach LOS | | B | | | B | | |

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 66 (73%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 21.5
 Intersection Capacity Utilization 64.5%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 101: SW 106th Avenue & Griffin Road



Queues

101: SW 106th Avenue & Griffin Road


























| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 59 | 1643 | 142 | 187 | 1392 | 232 | 292 |
| v/c Ratio | 0.60 | 0.58 | 0.15 | 0.75 | 0.45 | 0.98 | 0.90 |
| Control Delay | 67.8 | 13.9 | 2.2 | 32.2 | 10.3 | 95.9 | 51.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 67.8 | 13.9 | 2.2 | 32.2 | 10.3 | 95.9 | 51.9 |
| Queue Length 50th (ft) | 34 | 210 | 0 | 36 | 151 | 134 | 91 |
| Queue Length 95th (ft) | #91 | 255 | 24 | #131 | 185 | #278 | #241 |
| Internal Link Dist (ft) | | 935 | | | 687 | | |
| Turn Bay Length (ft) | 325 | | 210 | 330 | | 85 | |
| Base Capacity (vph) | 98 | 2839 | 946 | 264 | 3099 | 236 | 326 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.58 | 0.15 | 0.71 | 0.45 | 0.98 | 0.90 |

Intersection Summary

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

HCM 6th Signalized Intersection Summary

101: SW 106th Avenue & Griffin Road

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |  |    | |  | |  | | | |
| Traffic Volume (veh/h) | 53 | 1479 | 128 | 168 | 1253 | 0 | 209 | 0 | 263 | 0 | 0 | 0 |
| Future Volume (veh/h) | 53 | 1479 | 128 | 168 | 1253 | 0 | 209 | 0 | 263 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1856 | 1856 | 1856 | 1856 | 0 | 1870 | 0 | 1870 | | | |
| Adj Flow Rate, veh/h | 59 | 1643 | 142 | 187 | 1392 | 0 | 232 | 0 | 292 | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | | | |
| Percent Heavy Veh, % | 2 | 3 | 3 | 3 | 3 | 0 | 2 | 0 | 2 | | | |
| Cap, veh/h | 76 | 2940 | 913 | 293 | 3047 | 0 | 238 | 0 | 211 | | | |
| Arrive On Green | 0.04 | 0.58 | 0.58 | 0.06 | 0.60 | 0.00 | 0.13 | 0.00 | 0.13 | | | |
| Sat Flow, veh/h | 1781 | 5066 | 1572 | 1767 | 5233 | 0 | 1781 | 0 | 1585 | | | |
| Grp Volume(v), veh/h | 59 | 1643 | 142 | 187 | 1392 | 0 | 232 | 0 | 292 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1689 | 1572 | 1767 | 1689 | 0 | 1781 | 0 | 1585 | | | |
| Q Serve(g_s), s | 3.0 | 18.1 | 3.7 | 3.8 | 13.6 | 0.0 | 11.7 | 0.0 | 12.0 | | | |
| Cycle Q Clear(g_c), s | 3.0 | 18.1 | 3.7 | 3.8 | 13.6 | 0.0 | 11.7 | 0.0 | 12.0 | | | |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 76 | 2940 | 913 | 293 | 3047 | 0 | 238 | 0 | 211 | | | |
| V/C Ratio(X) | 0.77 | 0.56 | 0.16 | 0.64 | 0.46 | 0.00 | 0.98 | 0.00 | 1.38 | | | |
| Avail Cap(c_a), veh/h | 99 | 2940 | 913 | 337 | 3047 | 0 | 238 | 0 | 211 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 42.6 | 11.7 | 8.7 | 12.4 | 9.8 | 0.0 | 38.9 | 0.0 | 39.0 | | | |
| Incr Delay (d2), s/veh | 23.9 | 0.8 | 0.4 | 1.9 | 0.5 | 0.0 | 52.7 | 0.0 | 198.4 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(95%),veh/ln | 3.2 | 9.8 | 2.1 | 2.3 | 7.6 | 0.0 | 13.2 | 0.0 | 33.1 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 66.5 | 12.5 | 9.1 | 14.4 | 10.3 | 0.0 | 91.6 | 0.0 | 237.4 | | | |
| LnGrp LOS | E | B | A | B | B | A | F | A | F | | | |
| Approach Vol, veh/h | | 1844 | | | 1579 | | | 524 | | | | |
| Approach Delay, s/veh | | 14.0 | | | 10.8 | | | 172.9 | | | | |
| Approach LOS | | B | | | B | | | F | | | | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | 10.9 | 61.1 | | 18.0 | 12.8 | 59.2 | | | | | | |
| Change Period (Y+Rc), s | 7.0 | 7.0 | | 6.0 | 7.0 | 7.0 | | | | | | |
| Max Green Setting (Gmax), s | 5.0 | 53.0 | | 12.0 | 8.0 | 50.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 5.0 | 15.6 | | 14.0 | 5.8 | 20.1 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 12.1 | | 0.0 | 0.0 | 14.8 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 33.8 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |

HCM 6th TWSC
202: Driveway & Griffin Road

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑↑ | | | ↑↑↑ | | ↑ |
| Traffic Vol, veh/h | 1734 | 8 | 0 | 1421 | 0 | 23 |
| Future Vol, veh/h | 1734 | 8 | 0 | 1421 | 0 | 23 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1885 | 9 | 0 | 1545 | 0 | 25 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 0 | 0 | - | - | 947 |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | 4.5 |
| Critical Hdwy Stg 1 | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | 3 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 531 |
| Stage 1 | - | - | 0 | - | - |
| Stage 2 | - | - | 0 | - | - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | - | 531 |
| Mov Cap-2 Maneuver | - | - | - | - | - |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |

| Approach | EB | WB | NB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 12.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|-----------------------|-------|-----|-----|-----|
| Capacity (veh/h) | 531 | - | - | - |
| HCM Lane V/C Ratio | 0.047 | - | - | - |
| HCM Control Delay (s) | 12.1 | - | - | - |
| HCM Lane LOS | B | - | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - |

Timings

101: SW 106th Avenue & Griffin Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↑↑↑ | ↗ | ↘ | ↑↑↑ | ↘ | ↗ |
| Traffic Volume (vph) | 45 | 1312 | 87 | 147 | 1175 | 93 | 124 |
| Future Volume (vph) | 45 | 1312 | 87 | 147 | 1175 | 93 | 124 |
| Turn Type | Prot | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | 4 | |
| Permitted Phases | | | 6 | 2 | | | 4 |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 4 | 4 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 4.0 | 15.0 | 15.0 | 4.0 | 15.0 | 6.0 | 6.0 |
| Minimum Split (s) | 11.0 | 33.0 | 33.0 | 11.0 | 33.0 | 13.0 | 13.0 |
| Total Split (s) | 15.0 | 47.0 | 47.0 | 15.0 | 47.0 | 18.0 | 18.0 |
| Total Split (%) | 18.8% | 58.8% | 58.8% | 18.8% | 58.8% | 22.5% | 22.5% |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | Max | Max |
| Act Effct Green (s) | 6.0 | 41.7 | 41.7 | 50.9 | 46.6 | 12.0 | 12.0 |
| Actuated g/C Ratio | 0.08 | 0.52 | 0.52 | 0.64 | 0.58 | 0.15 | 0.15 |
| v/c Ratio | 0.35 | 0.52 | 0.10 | 0.53 | 0.42 | 0.37 | 0.35 |
| Control Delay | 42.0 | 13.7 | 1.1 | 13.7 | 10.9 | 35.1 | 7.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 42.0 | 13.7 | 1.1 | 13.7 | 10.9 | 35.1 | 7.2 |
| LOS | D | B | A | B | B | D | A |
| Approach Delay | | 13.8 | | | 11.2 | | |
| Approach LOS | | B | | | B | | |

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 40 (50%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 13.0

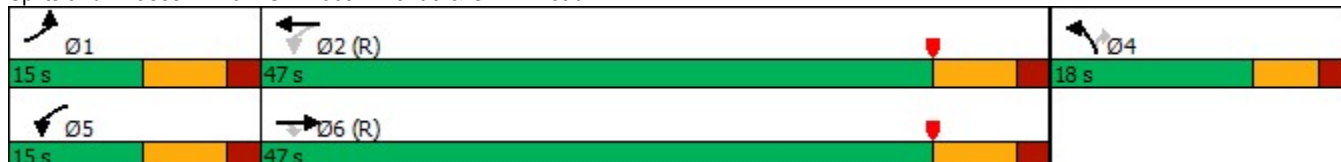
Intersection LOS: B

Intersection Capacity Utilization 53.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 101: SW 106th Avenue & Griffin Road



Queues

101: SW 106th Avenue & Griffin Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 47 | 1367 | 91 | 153 | 1224 | 97 | 129 |
| v/c Ratio | 0.35 | 0.52 | 0.10 | 0.53 | 0.42 | 0.37 | 0.35 |
| Control Delay | 42.0 | 13.7 | 1.1 | 13.7 | 10.9 | 35.1 | 7.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 42.0 | 13.7 | 1.1 | 13.7 | 10.9 | 35.1 | 7.2 |
| Queue Length 50th (ft) | 23 | 154 | 0 | 22 | 131 | 44 | 0 |
| Queue Length 95th (ft) | 54 | 202 | 10 | 50 | 176 | 89 | 36 |
| Internal Link Dist (ft) | | 935 | | | 982 | | |
| Turn Bay Length (ft) | 325 | | 210 | 330 | | 85 | |
| Base Capacity (vph) | 177 | 2624 | 882 | 320 | 2932 | 265 | 364 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.27 | 0.52 | 0.10 | 0.48 | 0.42 | 0.37 | 0.35 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: SW 106th Avenue & Griffin Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 45 | 1312 | 87 | 147 | 1175 | 0 | 93 | 0 | 124 | 0 | 0 | 0 |
| Future Volume (veh/h) | 45 | 1312 | 87 | 147 | 1175 | 0 | 93 | 0 | 124 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1856 | 1856 | 1856 | 1856 | 0 | 1870 | 0 | 1870 | | | |
| Adj Flow Rate, veh/h | 47 | 1367 | 91 | 153 | 1224 | 0 | 97 | 0 | 129 | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | | | |
| Percent Heavy Veh, % | 2 | 3 | 3 | 3 | 3 | 0 | 2 | 0 | 2 | | | |
| Cap, veh/h | 59 | 2729 | 847 | 331 | 2871 | 0 | 267 | 0 | 238 | | | |
| Arrive On Green | 0.03 | 0.54 | 0.54 | 0.06 | 0.57 | 0.00 | 0.15 | 0.00 | 0.15 | | | |
| Sat Flow, veh/h | 1781 | 5066 | 1572 | 1767 | 5233 | 0 | 1781 | 0 | 1585 | | | |
| Grp Volume(v), veh/h | 47 | 1367 | 91 | 153 | 1224 | 0 | 97 | 0 | 129 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1689 | 1572 | 1767 | 1689 | 0 | 1781 | 0 | 1585 | | | |
| Q Serve(g_s), s | 2.1 | 13.6 | 2.3 | 3.0 | 11.0 | 0.0 | 3.9 | 0.0 | 6.0 | | | |
| Cycle Q Clear(g_c), s | 2.1 | 13.6 | 2.3 | 3.0 | 11.0 | 0.0 | 3.9 | 0.0 | 6.0 | | | |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 59 | 2729 | 847 | 331 | 2871 | 0 | 267 | 0 | 238 | | | |
| V/C Ratio(X) | 0.79 | 0.50 | 0.11 | 0.46 | 0.43 | 0.00 | 0.36 | 0.00 | 0.54 | | | |
| Avail Cap(c_a), veh/h | 178 | 2729 | 847 | 400 | 2871 | 0 | 267 | 0 | 238 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 38.4 | 11.7 | 9.0 | 9.0 | 9.9 | 0.0 | 30.6 | 0.0 | 31.5 | | | |
| Incr Delay (d2), s/veh | 8.6 | 0.7 | 0.3 | 0.4 | 0.5 | 0.0 | 3.8 | 0.0 | 8.6 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(95%),veh/ln | 1.8 | 7.8 | 1.3 | 1.7 | 6.1 | 0.0 | 3.4 | 0.0 | 9.8 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 47.0 | 12.3 | 9.3 | 9.4 | 10.4 | 0.0 | 34.4 | 0.0 | 40.1 | | | |
| LnGrp LOS | D | B | A | A | B | A | C | A | D | | | |
| Approach Vol, veh/h | | 1505 | | | 1377 | | | 226 | | | | |
| Approach Delay, s/veh | | 13.2 | | | 10.3 | | | 37.6 | | | | |
| Approach LOS | | B | | | B | | | D | | | | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | 9.7 | 52.3 | | 18.0 | 11.9 | 50.1 | | | | | | |
| Change Period (Y+Rc), s | 7.0 | 7.0 | | 6.0 | 7.0 | 7.0 | | | | | | |
| Max Green Setting (Gmax), s | 8.0 | 40.0 | | 12.0 | 8.0 | 40.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 4.1 | 13.0 | | 8.0 | 5.0 | 15.6 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 9.2 | | 0.1 | 0.0 | 10.5 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 13.7 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |

Timings

101: SW 106th Avenue & Griffin Road

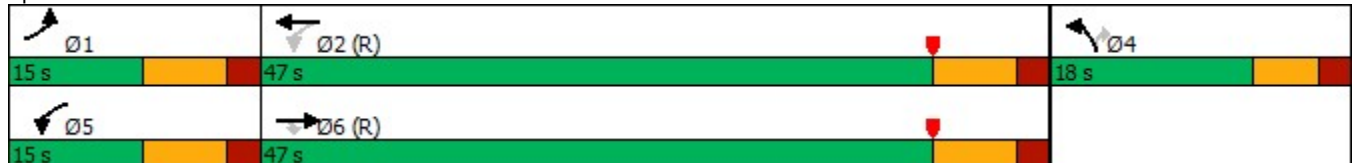


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↑↑↑ | ↗ | ↘ | ↑↑↑ | ↘ | ↗ |
| Traffic Volume (vph) | 46 | 1361 | 111 | 181 | 1221 | 112 | 154 |
| Future Volume (vph) | 46 | 1361 | 111 | 181 | 1221 | 112 | 154 |
| Turn Type | Prot | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | 4 | |
| Permitted Phases | | | 6 | 2 | | | 4 |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 4 | 4 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 5.0 | 15.0 | 15.0 | 4.0 | 15.0 | 6.0 | 6.0 |
| Minimum Split (s) | 12.0 | 33.0 | 33.0 | 11.0 | 33.0 | 13.0 | 13.0 |
| Total Split (s) | 15.0 | 47.0 | 47.0 | 15.0 | 47.0 | 18.0 | 18.0 |
| Total Split (%) | 18.8% | 58.8% | 58.8% | 18.8% | 58.8% | 22.5% | 22.5% |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | Max | Max |
| Act Effct Green (s) | 7.1 | 41.1 | 41.1 | 50.7 | 46.1 | 12.0 | 12.0 |
| Actuated g/C Ratio | 0.09 | 0.51 | 0.51 | 0.63 | 0.58 | 0.15 | 0.15 |
| v/c Ratio | 0.31 | 0.55 | 0.13 | 0.67 | 0.44 | 0.44 | 0.43 |
| Control Delay | 39.1 | 14.3 | 2.0 | 22.1 | 11.4 | 36.9 | 9.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 39.1 | 14.3 | 2.0 | 22.1 | 11.4 | 36.9 | 9.5 |
| LOS | D | B | A | C | B | D | A |
| Approach Delay | | 14.2 | | | 12.8 | | |
| Approach LOS | | B | | | B | | |

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 40 (50%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 14.1
 Intersection Capacity Utilization 57.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 101: SW 106th Avenue & Griffin Road



Queues

101: SW 106th Avenue & Griffin Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 48 | 1418 | 116 | 189 | 1272 | 117 | 160 |
| v/c Ratio | 0.31 | 0.55 | 0.13 | 0.67 | 0.44 | 0.44 | 0.43 |
| Control Delay | 39.1 | 14.3 | 2.0 | 22.1 | 11.4 | 36.9 | 9.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 39.1 | 14.3 | 2.0 | 22.1 | 11.4 | 36.9 | 9.5 |
| Queue Length 50th (ft) | 23 | 166 | 0 | 28 | 145 | 54 | 0 |
| Queue Length 95th (ft) | 55 | 212 | 19 | #100 | 184 | 104 | 51 |
| Internal Link Dist (ft) | | 935 | | | 982 | | |
| Turn Bay Length (ft) | 325 | | 210 | 330 | | 85 | |
| Base Capacity (vph) | 177 | 2588 | 872 | 305 | 2902 | 265 | 373 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.27 | 0.55 | 0.13 | 0.62 | 0.44 | 0.44 | 0.43 |

Intersection Summary

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

HCM 6th Signalized Intersection Summary

101: SW 106th Avenue & Griffin Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 46 | 1361 | 111 | 181 | 1221 | 0 | 112 | 0 | 154 | 0 | 0 | 0 |
| Future Volume (veh/h) | 46 | 1361 | 111 | 181 | 1221 | 0 | 112 | 0 | 154 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1856 | 1856 | 1856 | 1856 | 0 | 1870 | 0 | 1870 | | | |
| Adj Flow Rate, veh/h | 48 | 1418 | 116 | 189 | 1272 | 0 | 117 | 0 | 160 | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | | | |
| Percent Heavy Veh, % | 2 | 3 | 3 | 3 | 3 | 0 | 2 | 0 | 2 | | | |
| Cap, veh/h | 73 | 2673 | 830 | 333 | 2832 | 0 | 267 | 0 | 238 | | | |
| Arrive On Green | 0.04 | 0.53 | 0.53 | 0.07 | 0.56 | 0.00 | 0.15 | 0.00 | 0.15 | | | |
| Sat Flow, veh/h | 1781 | 5066 | 1572 | 1767 | 5233 | 0 | 1781 | 0 | 1585 | | | |
| Grp Volume(v), veh/h | 48 | 1418 | 116 | 189 | 1272 | 0 | 117 | 0 | 160 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1689 | 1572 | 1767 | 1689 | 0 | 1781 | 0 | 1585 | | | |
| Q Serve(g_s), s | 2.1 | 14.7 | 3.0 | 3.8 | 11.8 | 0.0 | 4.8 | 0.0 | 7.6 | | | |
| Cycle Q Clear(g_c), s | 2.1 | 14.7 | 3.0 | 3.8 | 11.8 | 0.0 | 4.8 | 0.0 | 7.6 | | | |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 73 | 2673 | 830 | 333 | 2832 | 0 | 267 | 0 | 238 | | | |
| V/C Ratio(X) | 0.66 | 0.53 | 0.14 | 0.57 | 0.45 | 0.00 | 0.44 | 0.00 | 0.67 | | | |
| Avail Cap(c_a), veh/h | 178 | 2673 | 830 | 382 | 2832 | 0 | 267 | 0 | 238 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 37.8 | 12.4 | 9.6 | 10.2 | 10.4 | 0.0 | 30.9 | 0.0 | 32.1 | | | |
| Incr Delay (d2), s/veh | 9.6 | 0.8 | 0.4 | 0.6 | 0.5 | 0.0 | 5.1 | 0.0 | 14.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(95%),veh/ln | 1.9 | 8.3 | 1.7 | 2.1 | 6.6 | 0.0 | 4.2 | 0.0 | 12.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 47.4 | 13.1 | 10.0 | 10.8 | 10.9 | 0.0 | 36.1 | 0.0 | 46.4 | | | |
| LnGrp LOS | D | B | A | B | B | A | D | A | D | | | |
| Approach Vol, veh/h | | 1582 | | | 1461 | | | 277 | | | | |
| Approach Delay, s/veh | | 14.0 | | | 10.9 | | | 42.0 | | | | |
| Approach LOS | | B | | | B | | | D | | | | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | 10.3 | 51.7 | | 18.0 | 12.8 | 49.2 | | | | | | |
| Change Period (Y+Rc), s | 7.0 | 7.0 | | 6.0 | 7.0 | 7.0 | | | | | | |
| Max Green Setting (Gmax), s | 8.0 | 40.0 | | 12.0 | 8.0 | 40.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 4.1 | 13.8 | | 9.6 | 5.8 | 16.7 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 9.5 | | 0.1 | 0.0 | 10.8 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 14.9 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |

Timings

101: SW 106th Avenue & Griffin Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↑↑↑ | ↗ | ↘ | ↑↑↑ | ↘ | ↗ |
| Traffic Volume (vph) | 46 | 1371 | 111 | 196 | 1227 | 112 | 154 |
| Future Volume (vph) | 46 | 1371 | 111 | 196 | 1227 | 112 | 154 |
| Turn Type | Prot | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | 4 | |
| Permitted Phases | | | 6 | 2 | | | 4 |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 4 | 4 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 4.0 | 15.0 | 15.0 | 4.0 | 15.0 | 6.0 | 6.0 |
| Minimum Split (s) | 11.0 | 33.0 | 33.0 | 11.0 | 33.0 | 13.0 | 13.0 |
| Total Split (s) | 15.0 | 47.0 | 47.0 | 15.0 | 47.0 | 18.0 | 18.0 |
| Total Split (%) | 18.8% | 58.8% | 58.8% | 18.8% | 58.8% | 22.5% | 22.5% |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | Max | Max |
| Act Effct Green (s) | 6.0 | 40.8 | 40.8 | 51.3 | 46.6 | 12.0 | 12.0 |
| Actuated g/C Ratio | 0.08 | 0.51 | 0.51 | 0.64 | 0.58 | 0.15 | 0.15 |
| v/c Ratio | 0.36 | 0.56 | 0.13 | 0.72 | 0.44 | 0.44 | 0.43 |
| Control Delay | 42.2 | 14.5 | 2.0 | 26.2 | 11.1 | 36.9 | 9.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 42.2 | 14.5 | 2.0 | 26.2 | 11.1 | 36.9 | 9.5 |
| LOS | D | B | A | C | B | D | A |
| Approach Delay | | 14.5 | | | 13.2 | | |
| Approach LOS | | B | | | B | | |

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 40 (50%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 14.4

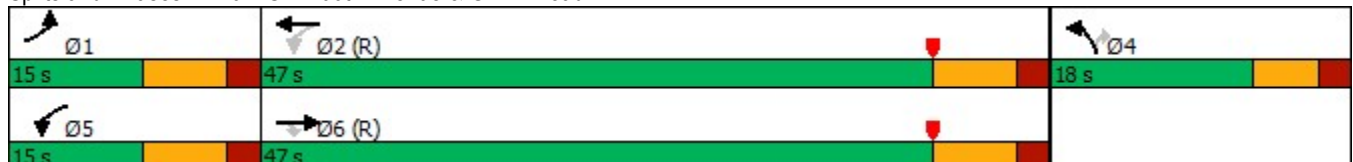
Intersection LOS: B

Intersection Capacity Utilization 58.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 101: SW 106th Avenue & Griffin Road



Queues

101: SW 106th Avenue & Griffin Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 48 | 1428 | 116 | 204 | 1278 | 117 | 160 |
| v/c Ratio | 0.36 | 0.56 | 0.13 | 0.72 | 0.44 | 0.44 | 0.43 |
| Control Delay | 42.2 | 14.5 | 2.0 | 26.2 | 11.1 | 36.9 | 9.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 42.2 | 14.5 | 2.0 | 26.2 | 11.1 | 36.9 | 9.5 |
| Queue Length 50th (ft) | 23 | 170 | 0 | 30 | 139 | 54 | 0 |
| Queue Length 95th (ft) | 55 | 214 | 19 | #126 | 185 | 104 | 51 |
| Internal Link Dist (ft) | | 935 | | | 982 | | |
| Turn Bay Length (ft) | 325 | | 210 | 330 | | 85 | |
| Base Capacity (vph) | 177 | 2571 | 867 | 301 | 2931 | 265 | 373 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.27 | 0.56 | 0.13 | 0.68 | 0.44 | 0.44 | 0.43 |

Intersection Summary

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

HCM 6th Signalized Intersection Summary

101: SW 106th Avenue & Griffin Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 46 | 1371 | 111 | 196 | 1227 | 0 | 112 | 0 | 154 | 0 | 0 | 0 |
| Future Volume (veh/h) | 46 | 1371 | 111 | 196 | 1227 | 0 | 112 | 0 | 154 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1856 | 1856 | 1856 | 1856 | 0 | 1870 | 0 | 1870 | | | |
| Adj Flow Rate, veh/h | 48 | 1428 | 116 | 204 | 1278 | 0 | 117 | 0 | 160 | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | | | |
| Percent Heavy Veh, % | 2 | 3 | 3 | 3 | 3 | 0 | 2 | 0 | 2 | | | |
| Cap, veh/h | 61 | 2650 | 823 | 338 | 2867 | 0 | 267 | 0 | 238 | | | |
| Arrive On Green | 0.03 | 0.52 | 0.52 | 0.08 | 0.57 | 0.00 | 0.15 | 0.00 | 0.15 | | | |
| Sat Flow, veh/h | 1781 | 5066 | 1572 | 1767 | 5233 | 0 | 1781 | 0 | 1585 | | | |
| Grp Volume(v), veh/h | 48 | 1428 | 116 | 204 | 1278 | 0 | 117 | 0 | 160 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1689 | 1572 | 1767 | 1689 | 0 | 1781 | 0 | 1585 | | | |
| Q Serve(g_s), s | 2.1 | 15.0 | 3.0 | 4.2 | 11.7 | 0.0 | 4.8 | 0.0 | 7.6 | | | |
| Cycle Q Clear(g_c), s | 2.1 | 15.0 | 3.0 | 4.2 | 11.7 | 0.0 | 4.8 | 0.0 | 7.6 | | | |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 61 | 2650 | 823 | 338 | 2867 | 0 | 267 | 0 | 238 | | | |
| V/C Ratio(X) | 0.79 | 0.54 | 0.14 | 0.60 | 0.45 | 0.00 | 0.44 | 0.00 | 0.67 | | | |
| Avail Cap(c_a), veh/h | 178 | 2650 | 823 | 379 | 2867 | 0 | 267 | 0 | 238 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 38.4 | 12.7 | 9.8 | 10.9 | 10.1 | 0.0 | 30.9 | 0.0 | 32.1 | | | |
| Incr Delay (d2), s/veh | 8.3 | 0.8 | 0.4 | 1.2 | 0.5 | 0.0 | 5.1 | 0.0 | 14.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(95%),veh/ln | 1.8 | 8.5 | 1.7 | 2.4 | 6.5 | 0.0 | 4.2 | 0.0 | 12.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.7 | 13.5 | 10.2 | 12.1 | 10.6 | 0.0 | 36.1 | 0.0 | 46.4 | | | |
| LnGrp LOS | D | B | B | B | B | A | D | A | D | | | |
| Approach Vol, veh/h | | 1592 | | | 1482 | | | 277 | | | | |
| Approach Delay, s/veh | | 14.2 | | | 10.8 | | | 42.0 | | | | |
| Approach LOS | | B | | | B | | | D | | | | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | | | | | |
| Phs Duration (G+Y+Rc), s | 9.7 | 52.3 | | 18.0 | 13.1 | 48.9 | | | | | | |
| Change Period (Y+Rc), s | 7.0 | 7.0 | | 6.0 | 7.0 | 7.0 | | | | | | |
| Max Green Setting (Gmax), s | 8.0 | 40.0 | | 12.0 | 8.0 | 40.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 4.1 | 13.7 | | 9.6 | 6.2 | 17.0 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 9.6 | | 0.1 | 0.0 | 10.9 | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 15.0 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |

HCM 6th TWSC
201: Driveway & Griffin Road

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑↑ | | | ↑↑↑ | | ↑ |
| Traffic Vol, veh/h | 1500 | 25 | 0 | 1423 | 0 | 15 |
| Future Vol, veh/h | 1500 | 25 | 0 | 1423 | 0 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1630 | 27 | 0 | 1547 | 0 | 16 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 0 | 0 | - | - | 829 |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | 4.5 |
| Critical Hdwy Stg 1 | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | 3 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 590 |
| Stage 1 | - | - | 0 | - | - |
| Stage 2 | - | - | 0 | - | - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | - | 590 |
| Mov Cap-2 Maneuver | - | - | - | - | - |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |

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

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|-----------------------|-------|-----|-----|-----|
| Capacity (veh/h) | 590 | - | - | - |
| HCM Lane V/C Ratio | 0.028 | - | - | - |
| HCM Control Delay (s) | 11.3 | - | - | - |
| HCM Lane LOS | B | - | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - |

Attachment F
Queuing Analysis

Traffic Demand

Based on the trip generation analysis, the highest traffic demand entering the driveway occurs during the PM Peak hour with 25 vehicles entering the entrance along Griffin Road. It was assumed that 92% of the vehicles are residents. Therefore, the traffic demand for the residents using this gate is 23 vehicles and the maximum traffic demand for visitors using the east gate was conservatively assumed to be 8% of the maximum demand. Therefore, the maximum demand for visitors is 2 vehicles.

Swing Gate Service Rate

The opening speed of this type of gate is 12 seconds. The design service rate considered for this queuing analysis assumed 300 vehicles per hour as the design service rate for a gate operated with a card reader with an easy or straight approach to control the service position. Therefore, the service rate for the residents is calculated as follows: $3600 \text{ seconds} / 12 \text{ seconds} = 300 \text{ vehicles per hour}$.

Telephone entry system Service Rate

For visitor vehicles a Telephone Entry System is proposed. The service rate of the telephone entry system is based on the assumption of a total of 120 seconds for a resident/tenant to respond to the telephone entry system, verify the request and open the gate¹. Therefore, the service rate for providing access to visitors is calculated as follows: $3600 \text{ seconds} / 120 \text{ seconds} = 30 \text{ vehicles per hour}$.

95th Percentile Queue Length

The 95th percentile queue length was calculated for two (2) scenarios: (1) traffic demand for residents and (2) traffic demand of visitors. Table 5 summarizes the traffic demand, service rates, 95th percentile queue, and stacking distance provided.

¹ Open the gate includes 12 seconds for the swing gate to open.

Queueing Analysis - PM Peak Hour

M= Queue length which is exceeded p percent of the time

$$M = \left[\frac{\ln P(x > M) - \ln Q_M}{\ln \rho} \right] - 1 \quad \text{where} \quad \ln P(x > M) = \ln 0.05$$

N= Number of service channels

Q= Service rate per channel (vph)

ρ = Demand rate/Service rate

$$\rho = \frac{q}{NQ}$$

q = Demand rate on the system (vph)

Q_M = Value obtained from Table 8.11 (refer to attachment)

| Gate Location- Residents | |
|--------------------------|------------------------------|
| Q= | 300 vph |
| q = | 23 vph |
| N= | 1 |
| ρ = | 0.0767 |
| Q_M = | 0.0767 |
| M= | -0.83337 \approx 1 vehicle |

| Gate Location - Visitors | |
|--------------------------|------------------------------|
| Q= | 30 vph |
| q = | 2 vph |
| N= | 1 |
| ρ = | 0.0667 |
| Q_M = | 0.0667 |
| M= | -0.89356 \approx 1 vehicle |

| Table 5 Queueing Analysis at Entry Gate | | | | | | |
|--|----------------------------|--------------|--------------------|----------------------------------|---------------------------------------|-----------------|
| Location | Category of Traffic Demand | Peak Hour | | | | |
| | | Demand (vph) | Service Rate (vph) | 95th Percentile Queue (vehicles) | Stacking Distance Provided (vehicles) | Is stacking OK? |
| Gate | Residents | 23 | 300 | 1 vehicle or 25 ft | 10 vehicles or 250 ft | YES |
| | Visitors | 2 | 30 | 1 vehicle or 25 ft | 10 vehicles or 250 ft | YES |

Attachment G
FDOT Letter



Florida Department of Transportation

RON DESANTIS GOVERNOR

605 Suwannee Street Tallahassee, FL 32399-0450 August 3, 2023

JARED W. PERDUE, P.E. SECRETARY

THIS PRE-APPLICATION LETTER IS VALID UNTIL – August 3, 2024 THIS LETTER IS NOT A PERMIT APPROVAL

Joaquin E. Vargas Traf Tech Engineering, Inc. 8400 N University Drive, Suite 309 Tamarac, Florida 33321

Dear Joaquin E. Vargas: RE: Pre-application Review for Category B Driveway, Pre-application Meeting Date: August 3, 2023 Broward County - Cooper City; SR 818; Sec. # 86015000; MP: 1.60; Access Class - 3; Posted Speed - 45; SIS - No; FDOT Ref. Project: FM 446371.1-Brad Salisbury-RESURFACING, FM 446371.1-Brad Salisbury-RESURFACING

Request: Right-in/right-out access on the south side of SR 818 / Griffin Road, approximately 550 feet east of SW 106th Avenue.

SITE SPECIFIC INFORMATION Project Name & Address: Hanson Residential – 10550 Griffin Road, Cooper City, Florida 33328 Property Owner: Hanson Homestead LLC; Parcel Size: 14.772 Acres Development Size: 38 Single family homes

REQUEST APPROVED

This decision is based on your presentation of the facts, site plan and survey - please see the conditions and comments below. You may choose to review this concept further with the District Access Management Review Committee (AMRC).

Conditions:

- A minimum driveway length of 25 feet, as measured from the ultimate right-of-way line to the first conflict point shall be provided. - If a gate is proposed, a minimum driveway length of 100 feet to the call box and/or gate house, and a turnaround area before the gate are required.

Comments:

- All driveways not approved in this letter must be fully removed and the area restored. • A Drainage Permit is required for any stormwater impacts within FDOT right-of-way (i.e. increased runoff or reduction of existing storage). • The applicant shall donate property to the Department if right-of-way dedication is required to implement the improvements. • Dimensions between driveways are measured from the near edge of pavement to near edge of pavement and for median openings are measured from centerline to centerline unless otherwise indicated.

The purpose of this Pre-Application letter is to document the conceptual review of the approximate location of driveway(s) to the State Highway System and to note required improvements, if any. This letter shall be submitted with any further reviews and for permitting. The Department’s personnel shall review permit plans for compliance with this letter as well as current Department standards and/or specifications. Final design must consider the existing roadway profile and any impacts to the existing drainage system. Note, this letter does not guarantee permit approval. The permit may be denied based on the review of the submitted engineering plans. Be aware that any approved median openings may be modified (or closed) in the future, at the sole discretion of the Department. For right-of-way dedication requirements go to: https://osp.fdot.gov; click on Statewide Permit News; Scroll down to District 4; Scroll down to Additional Information and Examples and choose Right-of-way Donations/Dedications.

Please contact the Access Management Manager - Tel. # 954-777-4363 or e-mail: D4AccessManagement@dot.state.fl.us with any questions regarding the Pre-Approval Letter.

Sincerely,

Carina Harvey District Access Management Manager

cc: Anthony Beecher

File: S:\Transportation Operations\Traffic Operations\Access Management\1. Pre-Apps and Variance\2023-08-03 & AMRC\Pre-App 03. 86015000 MP 1.6 SR 818_Hanson Residential\86015000 MP 1.6 SR 818_Hanson Residential.docx