

TRAFFIC IMPACT ANALYSIS

FOR

**GLADIOLUS PARK
APARTMENTS**

JONESBORO, ARKANSAS

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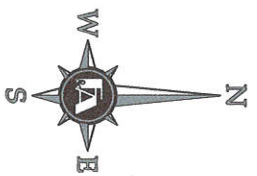
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PURPOSE

The purpose of this study is to evaluate the impact to traffic from a requested rezoning of property to include an apartment complex located at the west terminus of Gladiolus Drive in Jonesboro, Arkansas. This study includes determining if the intersection of Gladiolus Drive and Harrisburg Road meets any warrants for a traffic signal with the proposed traffic volumes. This study further evaluates the Level-of-Service of the unsignalized intersection that will provide access into the site off of Gladiolus Drive. Figure 1 shows the location of the proposed development.



FIGURE

VICINITY MAP

EXISTING CONDITIONS

Gladiolus Drive is a two-lane collector roadway that serves mainly residential development including both single-family and multi-family. This road begins to the east of at the intersection with Harrisburg Road and extends back to the west where it terminates at this subject property.

Harrisburg Road is a north – south highway (Highway 1B) that begins well south of the City Limits of Jonesboro and terminates to the north at Highway 18, or Highland Drive just prior to downtown Jonesboro. Harrisburg Road is currently a two-lane roadway south of East Parker Road in the study area.

Existing traffic counts were taken at the intersection of Gladiolus Drive and Harrisburg Road from a previous Traffic Study performed for the City of Jonesboro in June of 2017. These counts from that study were taken during the school year on a weekday. This 14-hour count reflects a period when traffic volumes are expected to be at their peak.

The results of this 14-hour count are shown in the appendix. The AM and PM Peak Hour volumes are shown in Figure 2. Figure 3 shows the existing lane configuration at the Gladiolus Drive and Harrisburg Road Intersection.

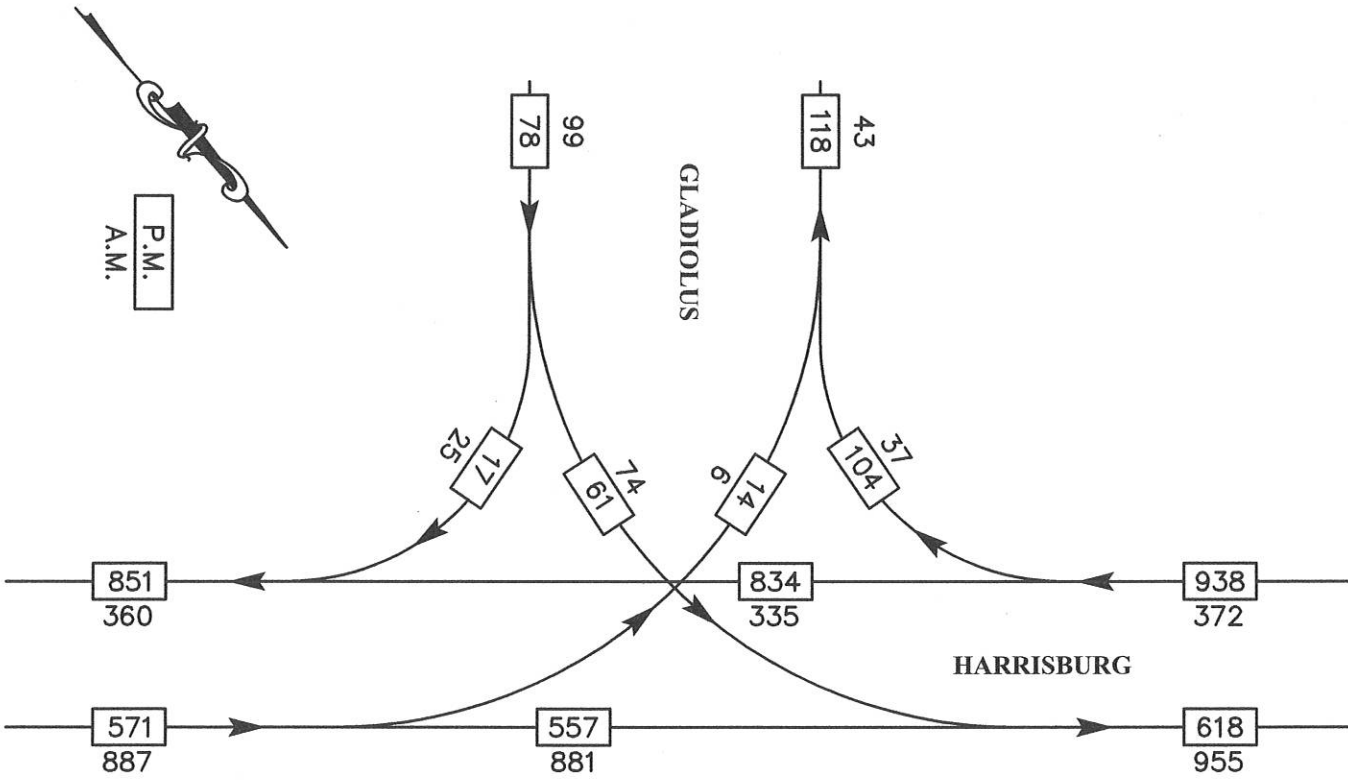


Figure 2
Existing Peak Hour Volumes
Harrisburg Road/Gladiolus Drive

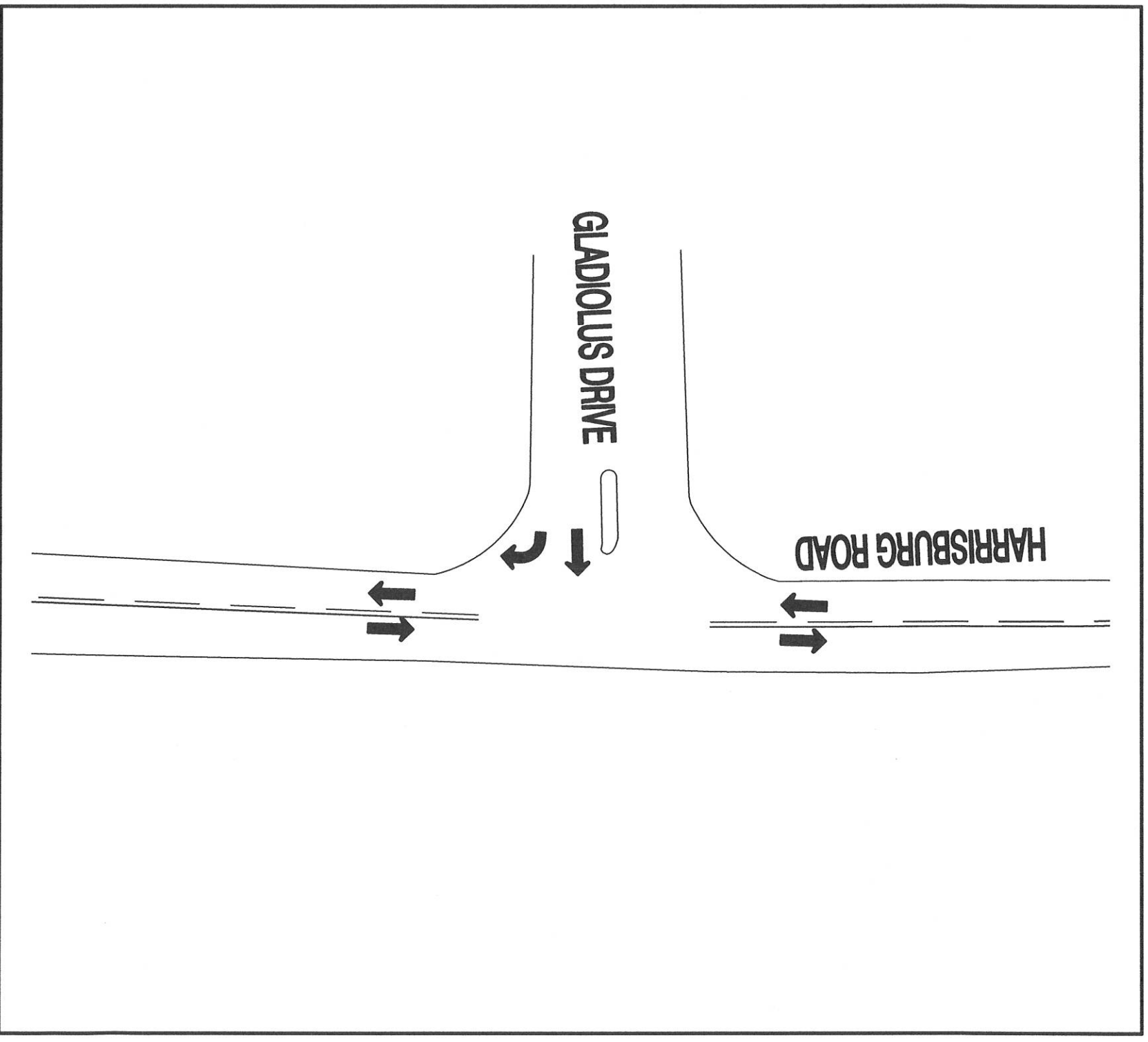


FIGURE 3

EXISTING HARRISBURG AND GLADIOLUS INTERSECTION

PROPOSED DEVELOPMENT

It is the intent to have this property rezoned to include a multi-family residential apartment complex with a total of 320 dwelling units. For the purpose of this study, the estimated traffic generated from the development will be for a total build-out of these 320 units. See Figure 4 for the location of the proposed property to be considered for rezoning.

Since no specific site plan has been developed as of yet, some conservative assumptions had to be made in order to evaluate the impact to traffic from a future multi-family development. The initial assumption is that all traffic generated from this proposed site will access Gladiolus Drive at one single intersection from the proposed development. This would place all the traffic on Gladiolus Drive thus impacting the existing intersection of Gladiolus Drive and Harrisburg Road. This would represent the worst possible case scenario that all traffic from the site would travel through the existing intersection of Gladiolus Drive and Harrisburg Road.

It should be pointed out however, that there exists a thirty (30) foot access easement across adjacent property north and east of the subject property that could be utilized as additional access. This potential future access drive would connect to two existing drives that provide access directly to both East Parker Road and Harrisburg Road. This would be a favorable alternative to traffic desiring to travel north on Harrisburg Road for the future site traffic. In the event that this access drive could be connected to Gladiolus Drive as well, it would help alleviate traffic at the existing intersection of Gladiolus Drive and Harrisburg Road.

Figure 5 displays a possible location for this 30-foot access drive and how it would connect to the two existing drives.

In addition to this potential future access drive, the City of Jonesboro is planning to improve Harrisburg Road in the area of this study to a five-lane section. This would provide for two lanes in each direction with a continuous center turn lane. These improvements are expected to be in place in the year 2020.

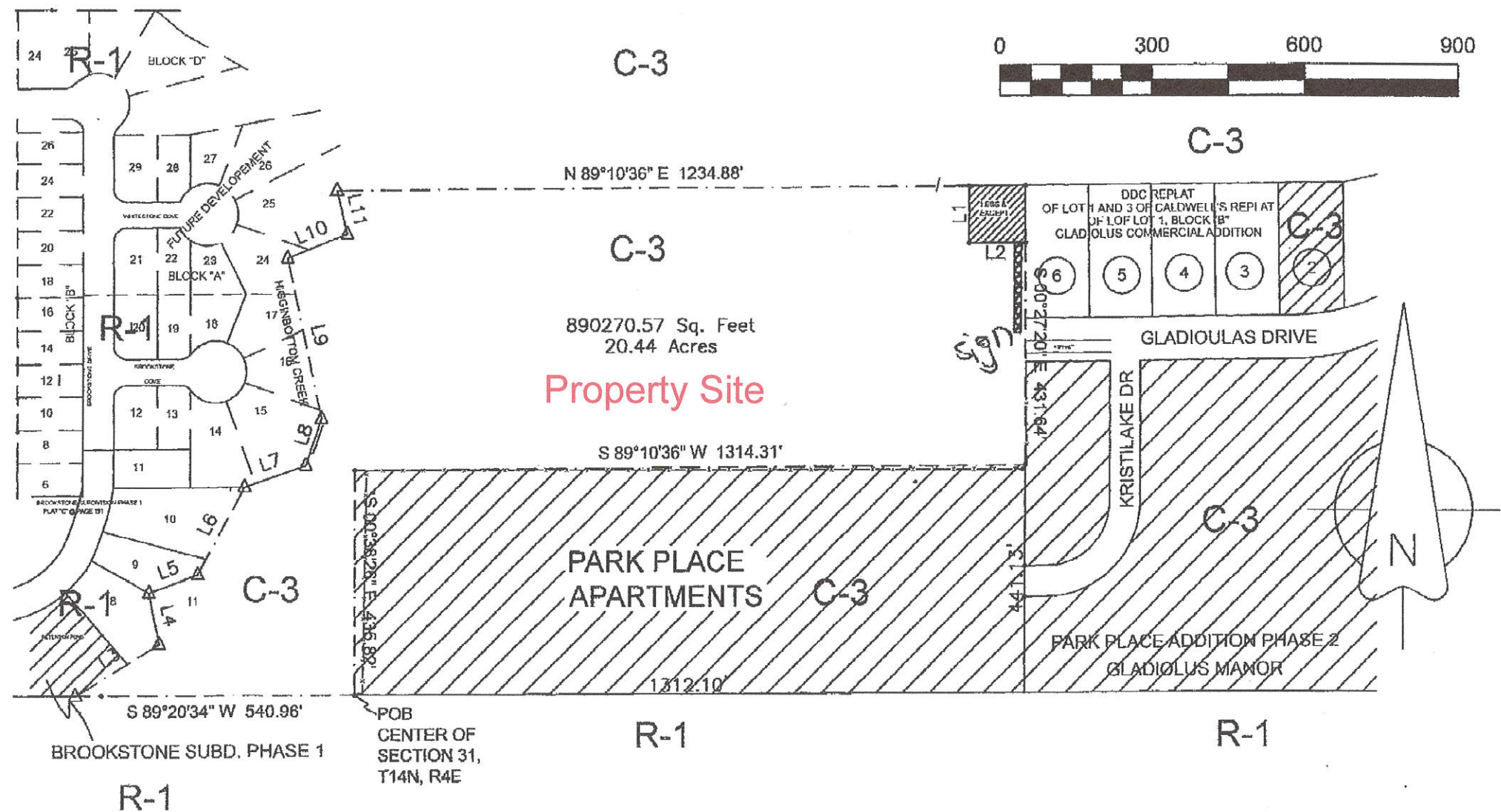


FIGURE 4 - SITE MAP
 DESCRIPTION:
 A PART OF THE SOUTHWEST HALF OF SECTION 31, TOWNSHIP 14 NORTH, RANGE 4 EAST, CRAIGHEAD COUNTY, ARKANSAS AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

(Not to Scale)

Beginning at the Center of said Section 31;
 thence South 89°20'34" West 540.96 feet to the centerline of an existing ditch; thence along said center line as follows: thence North 58°16'23" East 189.83 feet; thence North 11°33'55" West 101.70 feet; thence North 69°52'40" East 102.41 feet; thence North 27°54'14" East 191.97 feet; thence North 70°19'30" East 125.47 feet; thence North 18°02'52" East 95.58 feet; thence North 12°10'44" West 318.41 feet; thence North 67°43'12" East 123.29 feet; thence North 18°02'52" West 95.58 feet; thence North 89°10'36" East 1234.88 feet; thence South 00°27'20" West 110.00 feet; thence North 89°10'36" East 110.00 feet; thence South 00°27'20" East 431.64 feet; thence South 89°10'36" West 1314.31 feet; thence South 00°38'26" East 435.82 feet to the point of beginning proper, having an area of 890292.45 square feet, 20.44 acres more or less.

| LINE | BEARING | DISTANCE |
|------|---------------|----------|
| L1 | S 00°27'20" E | 110.00' |
| L2 | N 89°10'36" E | 110.00' |
| L3 | N 58°16'23" E | 189.83' |
| L4 | N 11°33'55" W | 101.70' |
| L5 | N 69°52'40" E | 102.41' |
| L6 | N 27°54'14" E | 191.97' |

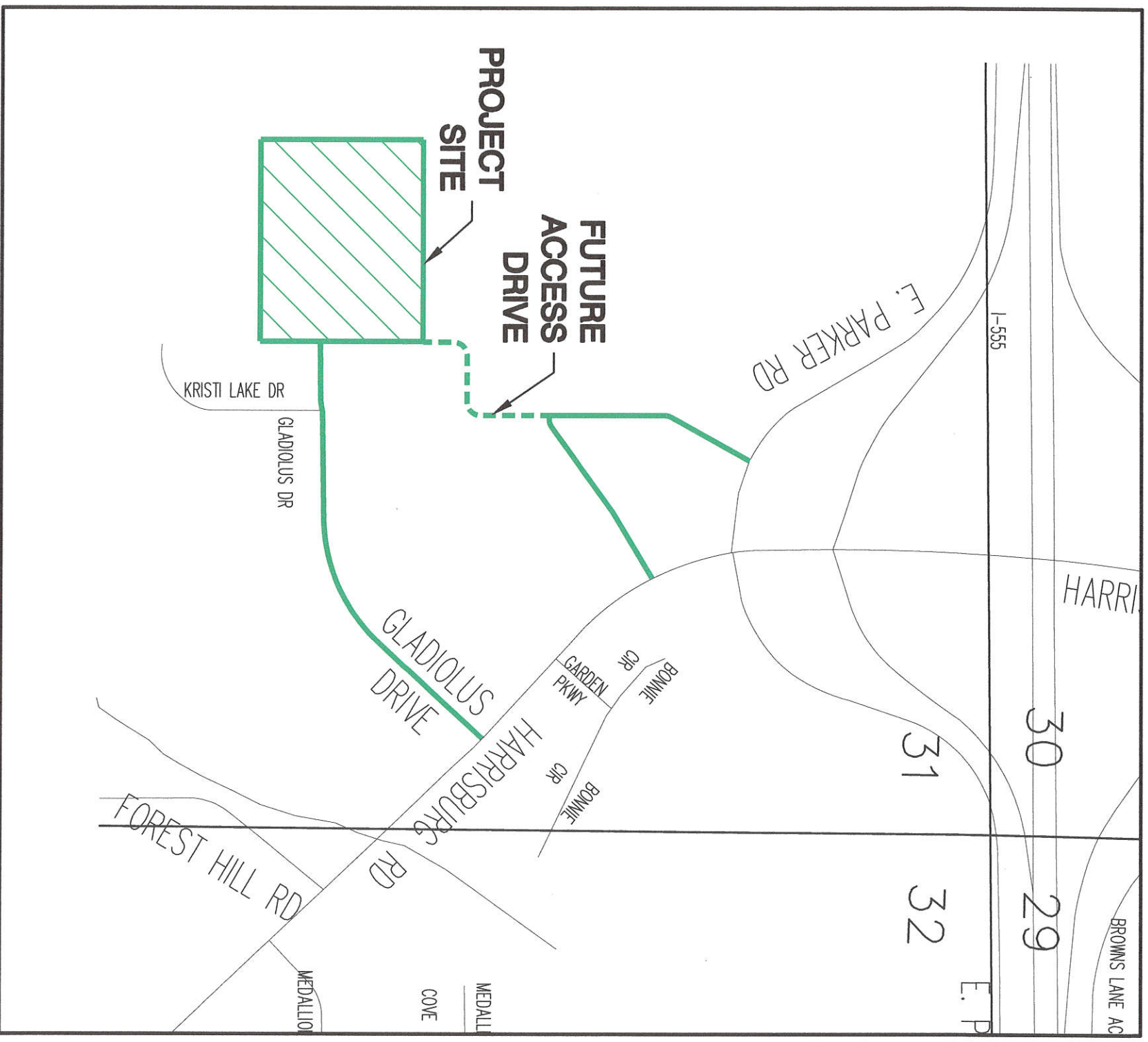
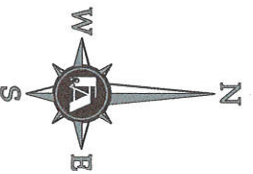


FIGURE 5



TRAFFIC PROJECTIONS

Traffic generated from the proposed site was estimated from the Institute of Transportation Engineers Trip Generation Manual 9th Edition. Volumes were generated for both the A.M. Peak Hour and the P.M. Peak Hour during a weekday when traffic volumes are greater. Below are the volumes anticipated for both A.M. and P.M. Peak Hours. Table 1 displays the anticipated traffic generated from the site.

320 Dwelling Units

A.M. PEAK HOURS

$$\begin{aligned} T &= 0.49 (X) + 3.73 \\ T &= 0.49 (320) + 3.73 &= 160 \\ 80\% \text{ Exiting } 0.8 \times 160 &= 128 \\ 20\% \text{ Entering } 0.2 \times 160 &= 32 \end{aligned}$$

P.M. PEAK HOUR

$$\begin{aligned} T &= 0.55 (X) + 17.65 \\ T &= 0.55 (320) + 17.65 &= 194 \\ 35\% \text{ Exiting } .35 \times 194 &= 68 \\ 65\% \text{ Entering } .65 \times 194 &= 126 \end{aligned}$$

X = Number of Dwelling Units

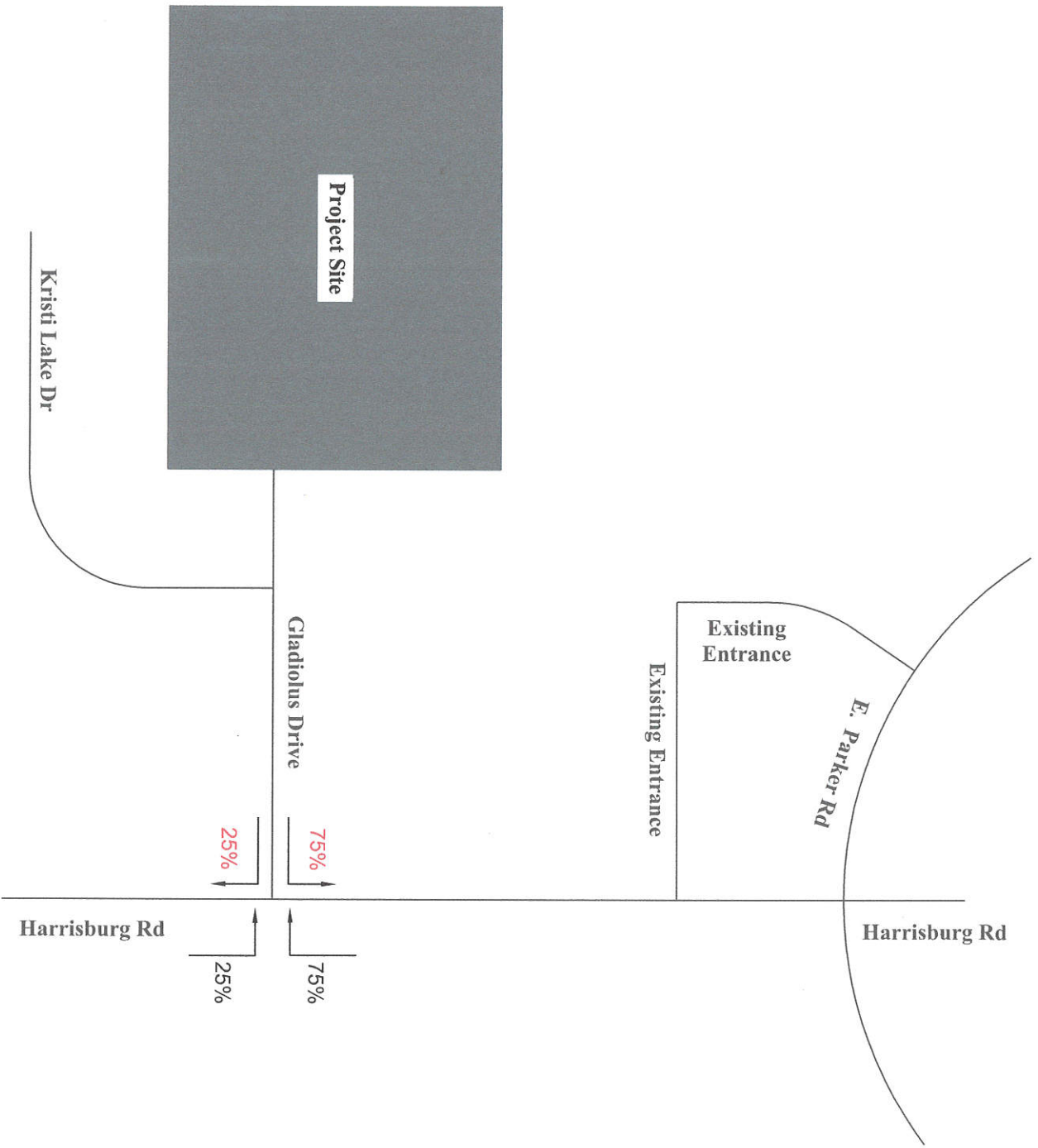
T = Total Trip Ends

| TABLE 1 | | | |
|-----------------|------|----------------|------|
| TRIP GENERATION | | | |
| A.M. Peak Hour | | P.M. Peak Hour | |
| Enter | Exit | Enter | Exit |
| 32 | 128 | 126 | 68 |

TRAFFIC DISTRIBUTION AND ASSIGNMENT

The anticipated trips generated by the development were assigned to the roadway network using the trip distributions shown in Figure 6. Figure 6 shows the trip distribution pattern for both the AM and the PM Peak Hour at the intersection of Gladiolus Drive and Harrisburg Road without the aforementioned future access drive. As stated earlier, this represents the worst case scenario for impact to the Gladiolus Drive and Harrisburg Road intersection. In the event of construction of this access drive, distribution out of the site will change significantly. Figure 7 show the anticipated distribution with the future access drive.

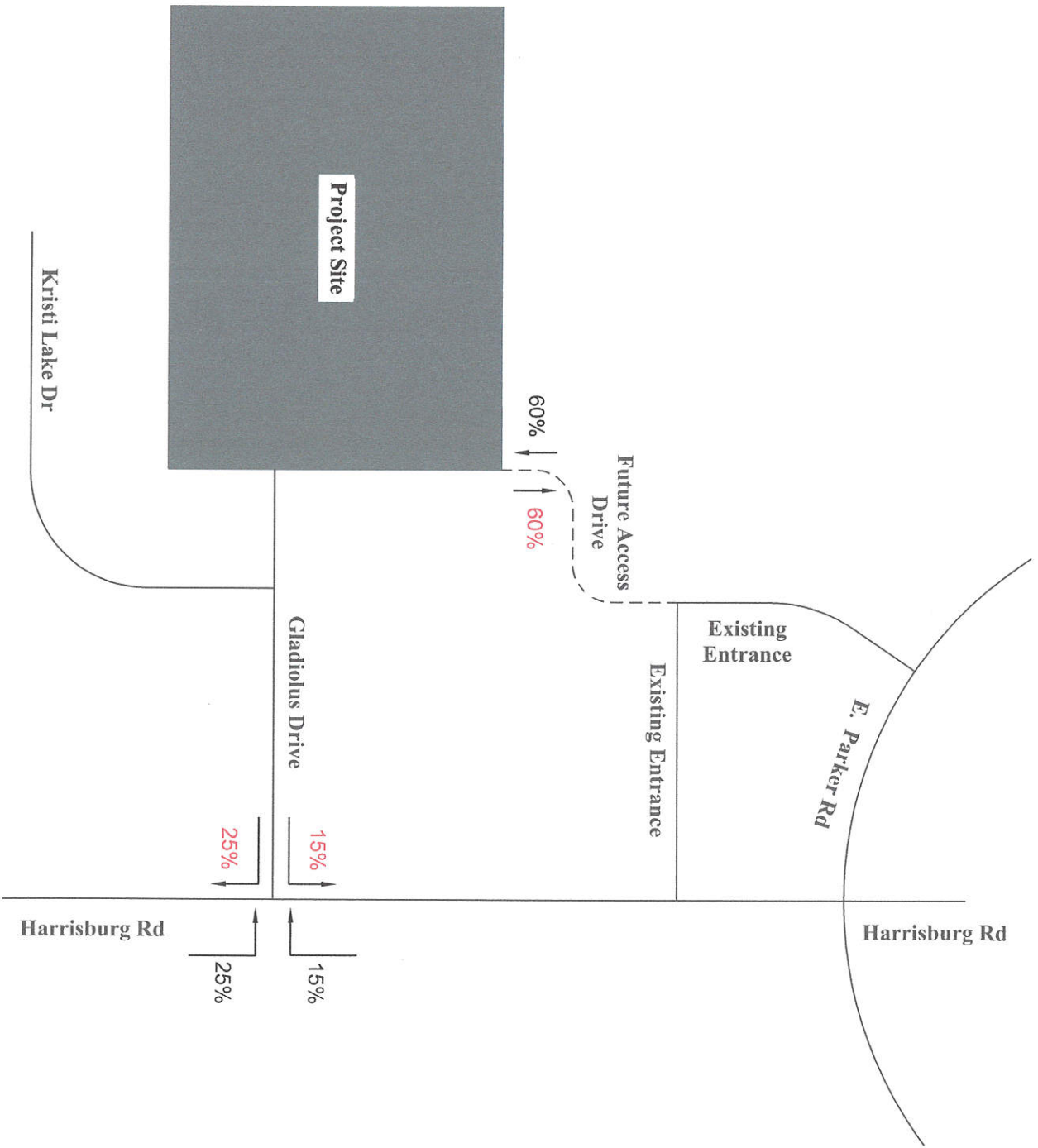
Trip distribution was based upon observed traffic patterns in the area. It is estimated that 75 percent of the AM and PM traffic generated from the site will desire to travel north towards I-555. It is estimated that 75% of the projected traffic will come from this same direction during both the AM and PM Peak Hour back towards the site. In the case of no future access drive, 75% of the anticipated projected traffic will turn left at the intersection of Gladiolus Drive and Harrisburg Road. In the event that this access drive is constructed, it is anticipated that 80% of the traffic from the development desiring to go north towards I-555, will utilize this new access drive. It further assumed that traffic desiring to travel south on Harrisburg Road will continue to utilize Gladiolus Drive. The traffic assignment for these peak hour volumes without the future access drive is shown in Figure 8. Figure 9 displays the volumes with the future access drive.



XXX% - ENTERING
XXX% - EXITING



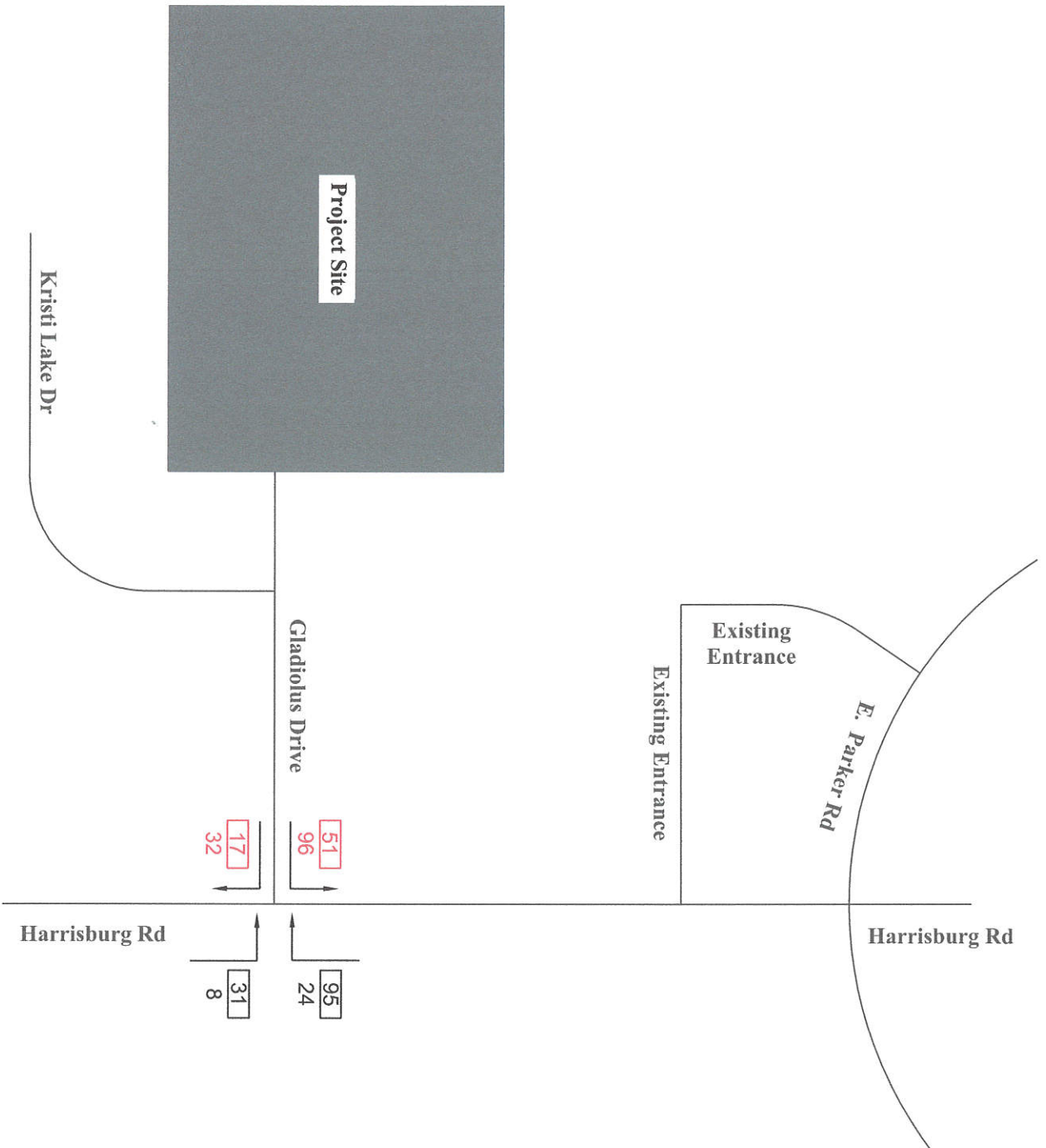
Figure 6
Distribution of Peak Hour Traffic Volumes
Generated by the Project Site With No Future Access Drive (AM/PM Peak Hour)
(Not to Scale)



XX% - ENTERING
XX% - EXITING



Figure 7
Distribution of Peak Hour Traffic Volumes
Generated by the Project Site With Future Access Drive (AM/PM Peak Hour)
(Not to Scale)



| | |
|-----|----------|
| 126 | ENTERING |
| 68 | EXITING |

| | |
|-----|----------|
| 32 | ENTERING |
| 128 | EXITING |

P.M.

A.M.

Figure 8
Assignment of Peak Hour Traffic Volumes
Generated by the Project Site With No Future Access Drive (AM/PM Peak Hour)
(Not to Scale)

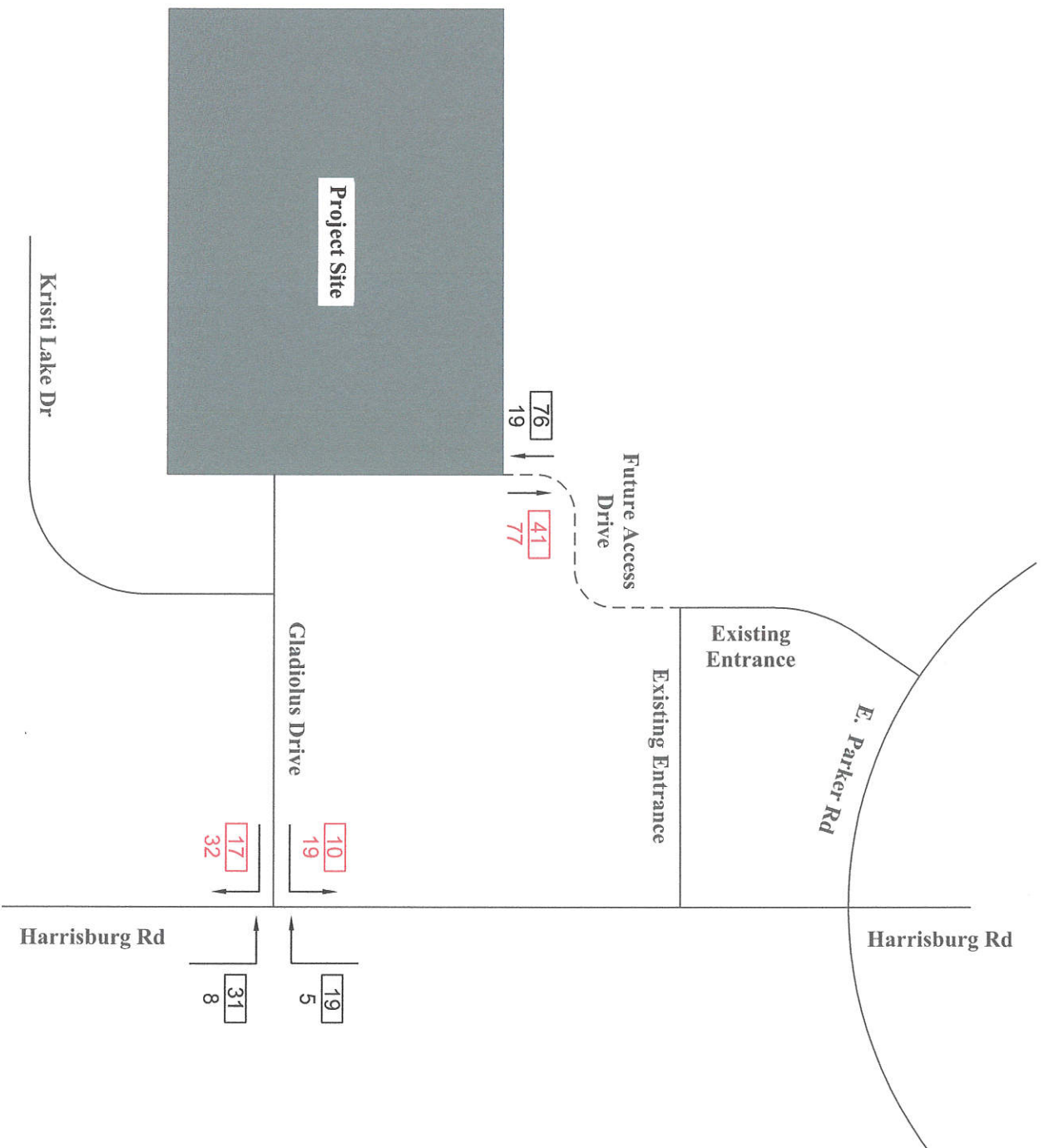


Figure 9
 Assignment of Peak Hour Traffic Volumes
 Generated by the Project Site With Future Access Drive (AM/PM Peak Hour)
 (Not to Scale)

LEVEL-OF-SERVICE ANALYSIS

In order to determine the Level-of-Service (LOS) for the site's access point with Gladiolus Drive and at the existing intersection of Gladiolus Drive and Harrisburg Road a capacity analysis was performed at these intersections. Synchro Software Version 10 was used to perform the LOS calculations.

Level-of-Service for an intersection is defined in the Highway Capacity Manual in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption and lost travel time. Six LOS are defined with letters designating each level from A to F, with LOS "A" representing the best operating conditions and LOS "F" representing the worst operating conditions. Table 2 shows the LOS for unsignalized intersections and the associated delay in seconds.

| TABLE 2 LEVEL-OF-SERVICE | |
|-----------------------------|----------------------------------|
| Level-of-Service | Average Total Delay (SEC/VEH) |
| | Unsignalized |
| A | ≤10 |
| B | >10 and ≤15 |
| C | >15 and ≤25 |
| D | >25 and ≤35 |
| E | >35 and ≤50 |
| F | >50 |

The LOS Analysis included the future intersection of the Site Access Drive with Gladiolus Drive and four different scenarios for Gladiolus Drive and Harrisburg Road. The LOS analyses for the four scenarios at Gladiolus Drive and Harrisburg Road include an existing conditions analysis, a “no-build” analysis where no new traffic from the site is added but non-site traffic volumes are increased, and a “build” analysis where both non-site background growth and projected traffic volumes from the site are included. The “build” option includes an analysis with and without the previously mentioned future access drive. The “no-build” and “build” analyses both include the 5 lane Harrisburg Road improvements as described earlier in this study. The Harrisburg Road improvements are included in the analyses due to the fact that a 2020 horizon year is anticipated for a full-buildout of the apartment complex, which correlates to the completion date of the Harrisburg Road improvements.

Traffic volumes used for the analysis included the volumes acquired from the traffic counts at the intersection of Gladiolus Drive and Harrisburg Road from the aforementioned traffic study. Since the development is not anticipated to be completed until 2020, a 1.5 % growth factor per year was used for Harrisburg Road through traffic only. No increase in volume was calculated for Gladiolus Drive due to the fact that the area is built out with the exception of this property. The existing peak hour volumes are shown in Figure 2, and the 2020 volumes without the development (No build) are shown in Figure 10. Volumes projected from the proposed site were added to the 2020 traffic volumes at this intersection. Figure 11 displays the anticipated volumes without the future access drive and Figure 12 displays the volumes with the future access drive.

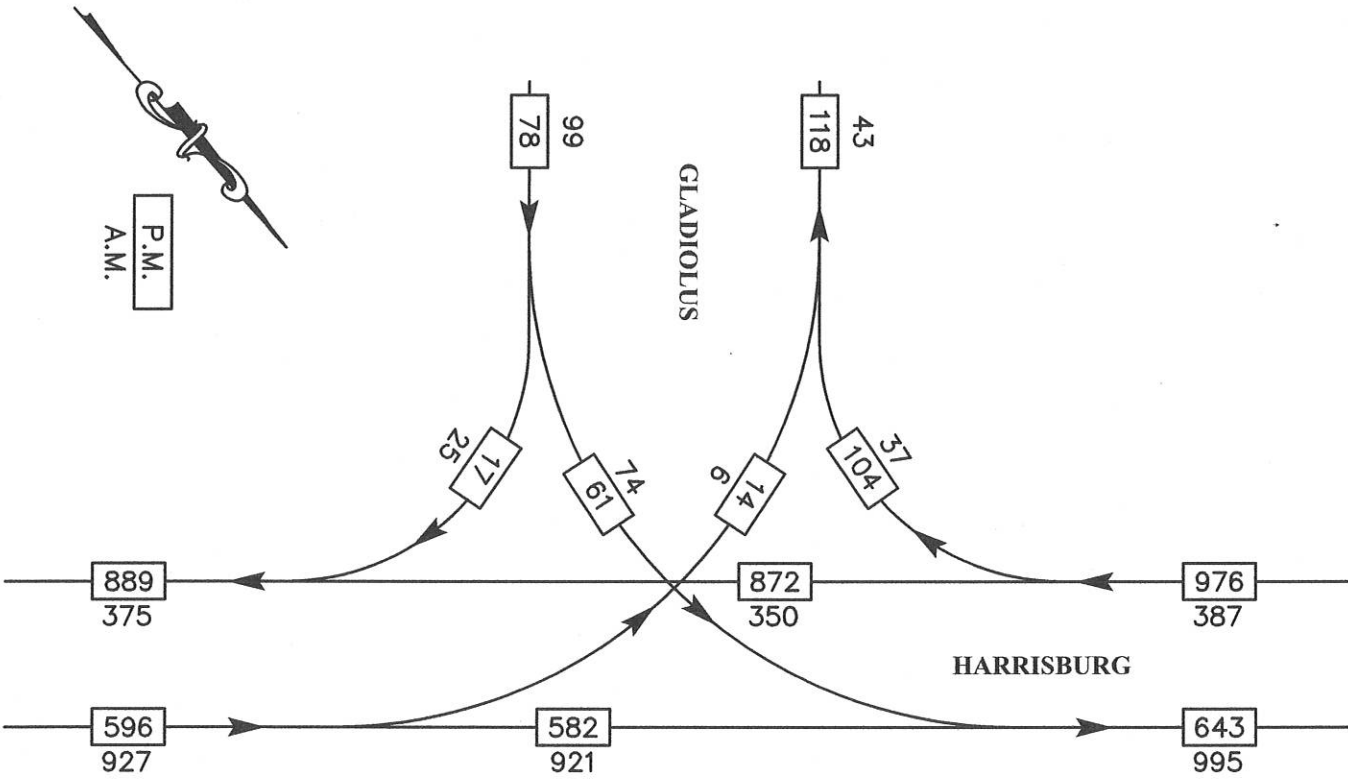


Figure 10
 2020 Peak Hour Volumes
 Harrisburg Road/Gladiolus Drive (No-Build)

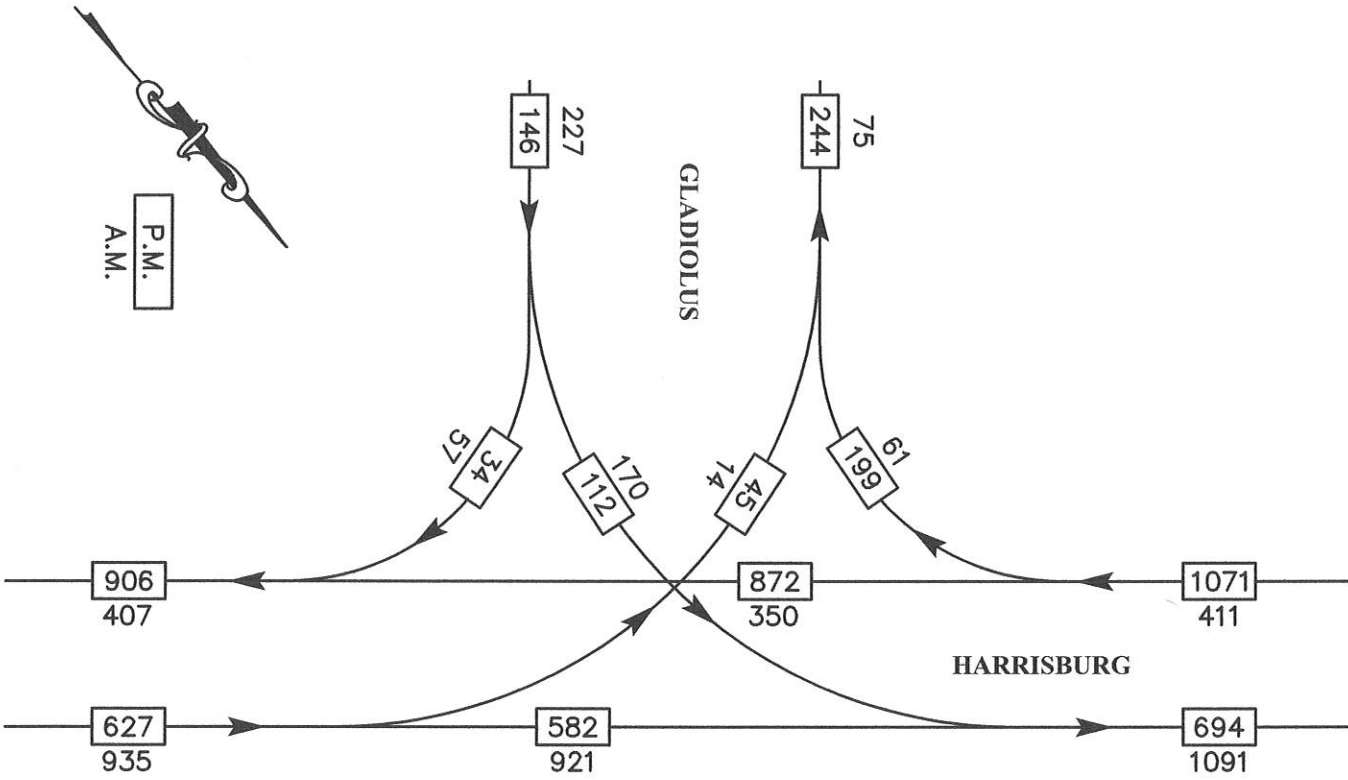


Figure 11
2020 Peak Hour Volumes
Harrisburg Road/Gladiolus Drive (Build no Future Access Drive)

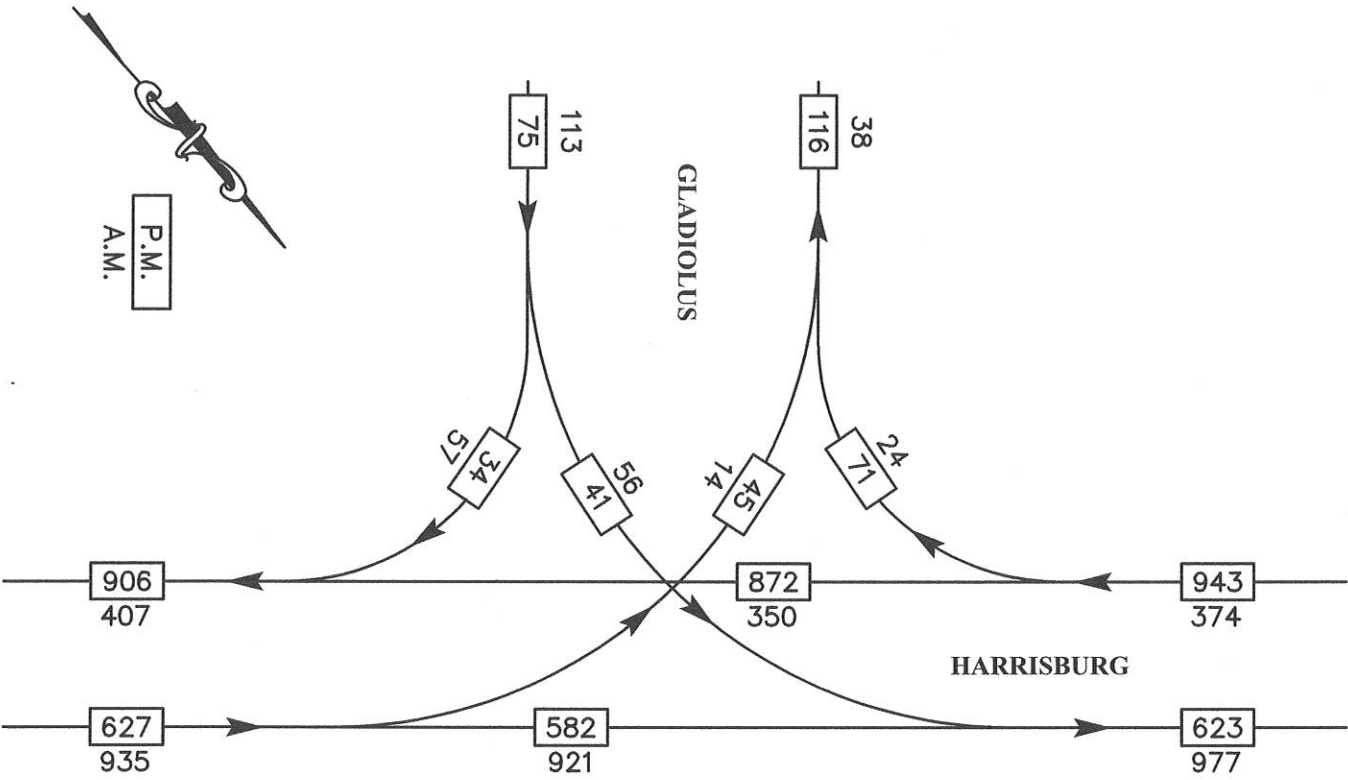


Figure 12
2020 Peak Hour Volumes
Harrisburg Road/Gladiolus Drive (Build with Future Access Drive)

- **Future Site Access Drive with Gladiolus Drive**

Although traffic volumes are unknown on Gladiolus Drive at the west end of this roadway, in order to run an analysis at this future intersection, the full amount of traffic on Gladiolus Drive at the Harrisburg Road Intersection was used. Traffic to and from the site was added to these existing volumes and an analysis was performed. Figure 13 shows the traffic volumes used in this analysis. The results show that even with this conservative estimate of vehicles for the Gladiolus Drive traffic volumes, this Site Access Drive will operate at a LOS "B". In reality, the delays should be much less due to reduced traffic volumes of the west end of Gladiolus Drive. The results are shown in Table 3.

TABLE 3
GLADIOLUS DRIVE AND SITE ACCESS DRIVE

| Approach | Movement | LEVEL OF SERVICE | | | |
|------------|---------------|--------------------|-------------------------|--------------------|-------------------------|
| | | AM Peak Hour (LOS) | Average Delay (sec/veh) | PM Peak Hour (LOS) | Average Delay (sec/veh) |
| Eastbound | Left | A | 0 | A | 0 |
| Westbound | Through/Right | * | * | * | * |
| Southbound | Left | B | 10.5 | B | 10.6 |

* No Delay

- **Gladiolus Drive and Harrisburg Road (Existing Conditions)**

The analysis for existing conditions at Gladiolus Drive and Harrisburg Road included the existing traffic volumes taken from the previously mentioned study with no improvements to Harrisburg Road. The analysis for the existing conditions show that the stop condition for the critical eastbound left turn at Gladiolus Drive currently operates at a LOS "F" for both AM and PM Peak

Hours. All other movements operate at a LOS "B" or better with the exception of the eastbound right turn in the PM Peak which operates at a LOS "C". The results are shown in Table 4.

| TABLE 4 | | | | | |
|-------------------------------------|----------|--------------|-------------------------|--------------|-------------------------|
| Harrisburg Road and Gladiolus Drive | | | | | |
| Existing Conditions | | | | | |
| Approach | Movement | AM PEAK HOUR | | PM PEAK HOUR | |
| | | LOS | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) |
| Eastbound | Left | F | 60.1 | F | 67.7 |
| | Right | B | 10.9 | C | 17.0 |
| Northbound | Left | A | 8.2 | B | 10.3 |
| | Through | A | 0 | A | 0 |
| Southbound | Through | * | * | * | * |
| | Right | * | * | * | * |

*No Delay

- **Gladiolus Drive and Harrisburg Road (2020 "No-Build")**

The intersection was analyzed again without the development and the future access drive. With the additional traffic projected from 2020 traffic without the development (no build), and with the improvements to Harrisburg Road, the LOS improves to a "C" or better for all movements. The critical eastbound left turn movements come in at a "C" for both AM and PM Peak Hours while all other movements are LOS "B" or better. The results are shown in Table 5.

| TABLE 5 | | | | | |
|---|----------|--------------|-------------------------|--------------|-------------------------|
| Harrisburg Road and Gladiolus Drive | | | | | |
| 2020 "No-Build" with Harrisburg Road Improvements | | | | | |
| Approach | Movement | AM PEAK HOUR | | PM PEAK HOUR | |
| | | LOS | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) |
| Eastbound | Left | C | 17.3 | C | 24.4 |
| | Right | A | 9.8 | B | 12.5 |
| Northbound | Left | A | 8.3 | B | 10.8 |
| | Through | * | * | * | * |
| Southbound | Through | * | * | * | * |
| | Right | * | * | * | * |

*No Delay

- **Gladiolus Drive and Harrisburg Road (2020 “Build” without Future Access Drive)**

Gladiolus Drive and Harrisburg Road was analyzed for the “Build” Scenarios without the future access drive. This would require all traffic generated from the site to travel to this existing intersection. The analysis includes 2020 traffic projections and improvements to Harrisburg Road. The results show that the critical eastbound left turn movement will operate at a LOS “D” for the AM Peak, and LOS “E” for the PM Peak. All other movement operate at a LOS “B” or better. The results are shown in Table 6.

| TABLE 6 Harrisburg Road and Gladiolus Drive 2020 “Build” with Harrisburg Road Improvements | | | | | |
|---|----------|--------------|-------------------------|--------------|-------------------------|
| Approach | Movement | AM PEAK HOUR | | PM PEAK HOUR | |
| | | LOS | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) |
| Eastbound | Left | D | 26.0 | E | 40.1 |
| | Right | B | 10.1 | B | 13.4 |
| Northbound | Left | A | 4 | B | 11.4 |
| | Through | * | * | * | * |
| Southbound | Through | * | * | * | * |
| | Right | * | * | * | * |

*No Delay

- **Gladiolus Drive and Harrisburg Road (2020 “Build” with Future Access Drive)**

This analysis included the “build” option with the construction of the future access drive. The following assumptions were made to develop the traffic volumes at the existing intersection of Gladiolus Drive and Harrisburg Road under this scenario.

1. Existing traffic on Gladiolus Drive will be able to utilize the future access drive.
2. All “site” and “non-site” traffic desiring to proceed south on Harrisburg Road will utilize Gladiolus Drive to access Harrisburg Road and not the future access drive.

3. During the peak hours 50% of the existing left turn volumes (non-site) at Gladiolus Drive and Harrisburg Road will utilize the future access drive and not this existing intersection.
4. During the peak hours 80% of the proposed site development traffic desiring to proceed in a northerly direction will use the future access drive. 20% will utilize the existing intersection of Gladiolus Drive and Harrisburg Road.
5. Harrisburg Road is improved to a five-lane section.

The following assumptions described above produce adjusted AM and PM Peak Hour Volumes at the Gladiolus Drive and Harrisburg Road intersection. These adjusted volumes include the increased “non-site” traffic described earlier to be expected in 2020. These adjusted volumes were shown in Figure 12.

The analysis shows that with the future access drive the LOS for the critical eastbound left turn movement improves to a LOS “C” for both the AM and PM Peak Hours. There is a significant decrease in delay for the eastbound left turn movement with the future access drive. An average delay per vehicle of 9.8 seconds in the AM Peak hour and 16.2 seconds in the PM Peak Hour. The results of this analysis are shown in Table 7. A comparison of the “Build” Options – One without the future access drive, and one with the future access drive are shown in Table 8.

| TABLE 7 Harrisburg Road and Gladiolus Drive 2020 "Build" with Future Access Drive and Harrisburg Road Improvements | | | | | | |
|--|----------|--------------|-------------------------|--------------|-------------------------|--|
| Approach | Movement | AM PEAK HOUR | | PM PEAK HOUR | | |
| | | LOS | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | |
| Eastbound | Left | C | 16.8 | C | 23.9 | |
| | Right | B | 10.0 | B | 12.5 | |
| Northbound | Left | A | 8.2 | B | 10.6 | |
| | Through | * | * | * | * | |
| Southbound | Through | * | * | * | * | |
| | Right | * | * | * | * | |

* No Delay

| TABLE 8 Harrisburg Road and Gladiolus Drive "Build" Comparison (With and Without Future Access Drive) | | | | | | | | |
|--|----------|-----------------------------|-------------------------|--------------------------|-----------------------------|-----|--------------------------|---|
| Approach | Movement | AM PEAK HOUR | | | PM PEAK HOUR | | | |
| | | Without Future Access Drive | | With Future Access Drive | Without Future Access Drive | | With Future Access Drive | |
| | | LOS | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | |
| Eastbound | Left | D | 26.0 | C | 16.8 | E | 40.1 | C |
| | Right | B | 10.1 | B | 10.0 | B | 13.4 | B |
| Northbound | Left | A | 8.4 | A | 8.2 | B | 11.4 | B |
| | Through | * | * | * | * | * | * | * |
| Southbound | Through | * | * | * | * | * | * | * |
| | Right | * | * | * | * | * | * | * |

* No Delay

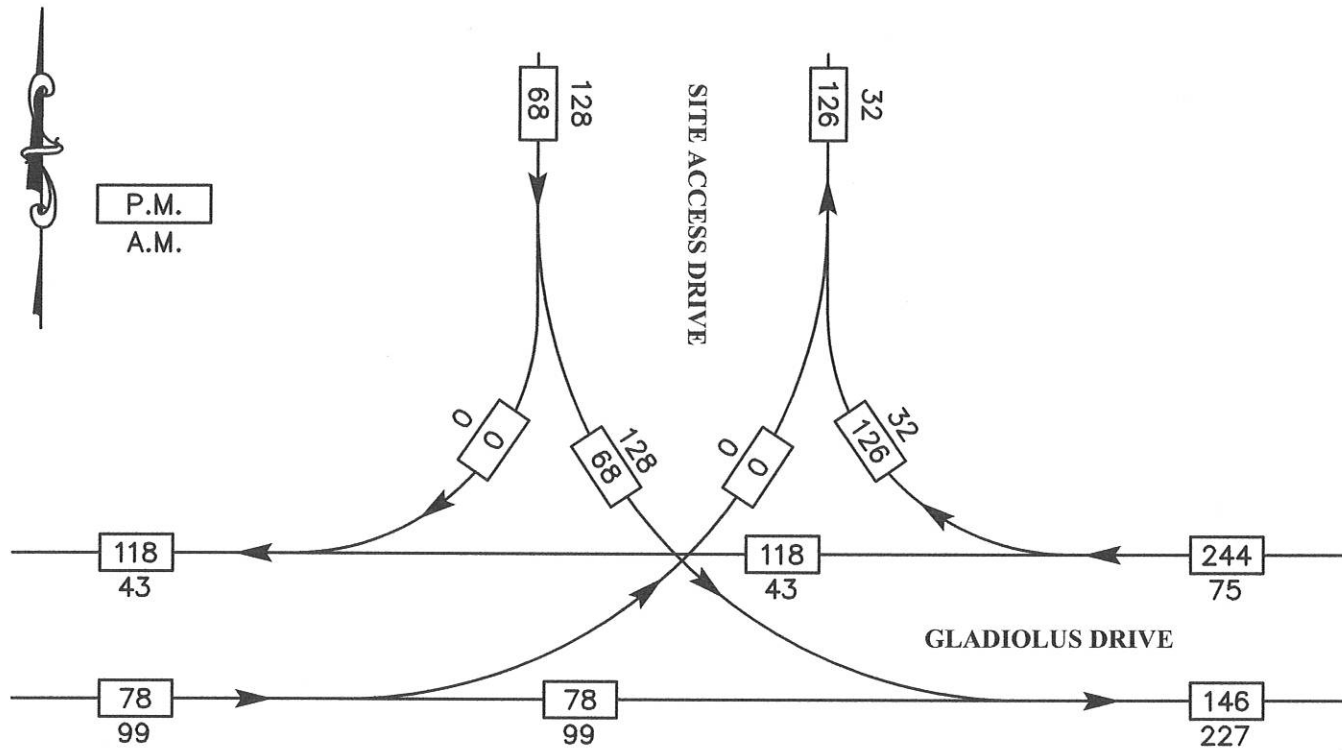


Figure 13
2020 Peak Hour Volumes
Gladiolus Drive/Site Access Drive

SIGNAL WARRANT ANALYSIS

The Manual on Uniform Traffic Control Devices (MUTCD) outlines 8 different warrants to justify the installation of a traffic signal. The traffic signal should not be installed unless one or more of these warrants are satisfied. After reviewing the volumes from the existing traffic counts, Warrant 1, Eight-Hour Vehicular Volume and Warrant 2, Four-Hour Vehicular Volume were considered. No other warrant appeared to apply.

Warrant 1, Eight-Hour Vehicular Volume

The MUTCD states the following for Warrant 1:

The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:

- A. *The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or*
- B. *The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.*

In applying each condition, the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

| Number of lanes for moving traffic on each approach | | Vehicles per hour on major street (total of both approaches) | | | | Vehicles per hour on higher-volume minor-street approach (one direction only) | | | |
|---|--------------|--|------------------|------------------|------------------|---|------------------|------------------|------------------|
| Major Street | Minor Street | 100% ^a | 80% ^b | 70% ^c | 56% ^d | 100% ^a | 80% ^b | 70% ^c | 56% ^d |
| 1 | 1 | 500 | 400 | 350 | 280 | 150 | 120 | 105 | 84 |
| 2 or more | 1 | 600 | 480 | 420 | 336 | 150 | 120 | 105 | 84 |
| 2 or more | 2 or more | 600 | 480 | 420 | 336 | 200 | 160 | 140 | 112 |
| 1 | 2 or more | 500 | 400 | 350 | 280 | 200 | 160 | 140 | 112 |

Condition B—Interruption of Continuous Traffic

| Number of lanes for moving traffic on each approach | | Vehicles per hour on major street (total of both approaches) | | | | | Vehicles per hour on higher-volume minor-street approach (one direction only) | | | |
|---|--------------|--|------------------|------------------|------------------|-------------------|---|------------------|------------------|------------------|
| Major Street | Minor Street | 100% ^a | 80% ^b | 70% ^c | 56% ^d | 100% ^a | 80% ^b | 70% ^c | 56% ^d | 56% ^d |
| 1 | 1 | 750 | 600 | 525 | 420 | 75 | 60 | 53 | 42 | 42 |
| 2 or more | 1 | 900 | 720 | 630 | 504 | 75 | 60 | 53 | 42 | 42 |
| 2 or more | 2 or more | 900 | 720 | 630 | 504 | 100 | 80 | 70 | 56 | 56 |
| 1 | 2 or more | 750 | 600 | 525 | 420 | 100 | 80 | 70 | 56 | 56 |

With the traffic conditions encountered at this intersection, it was determined that Condition “B” – “Interruption of Continuous Traffic”, was more likely to be met than Condition “A” of Warrant No. 1.

Since Harrisburg Road is the main street, both approaches, northbound and southbound volumes were added together. A growth factor of 1.046 for the horizon year was then applied to the through traffic only. Since the horizon year was assumed to be 2020, Harrisburg Road was considered to have two lanes in each direction.

For Gladiolus Drive, since only the AM and PM Peak Hours were known from the ITE Trip Generation Manual, assumptions had to be made in order to determine “non-peak” hour volumes from the site. Since this is a proposed residential development and Gladiolus Drive serves mainly residential development, it was assumed that this same traffic pattern will occur with the proposed development as occurs with the traffic on Gladiolus Drive. Percentages of this

total traffic for each hour were calculated on Gladiolus Drive for the eastbound traffic. These same percentages were used to predict the exiting or eastbound traffic from the development that would be on Gladiolus Drive in the event the future access drive is not constructed.

Since the ITE Trip Generator Manual does provide a “daily” or 24-hour count for this particular Land Use, this volume was calculated as shown below.

$$T = 6.06 (X) + 123.56$$

$$T = 6.06 (320) + 123.56$$

$$T = 2,062$$

$$X = \text{Dwelling Units} = 320$$

$$T = \text{Total Trips}$$

Of the 2,062 total trips generated, 50% would enter and 50% exit over a 24-hour period. Therefore, a total of 50%, or 1,031 would exit during the day to travel eastbound. Of the 1,031 total trips exiting, it was assumed that 75% of these trips would occur between the hours of 6:00 AM through 7:00 PM. Therefore, a total volume to be applied to the percentages calculated would be 0.75 X 1,031, or 774 vehicles. These added hourly volumes were calculated and shown for each hour. The only exception is the two peak hours which show the previously calculated volumes from the ITE Trip Generation Manual. These percentages and calculations are shown in the Appendix.

These projected hourly volumes from the site were then added to the existing eastbound traffic. Due to high left turn volumes, the right turn volumes were included in these counts for eastbound

Gladiolus Drive. The analysis for the Eight-Hour Vehicular Volumes Condition "B" show that 8 of the required 8 hours were satisfied at the intersection of Harrisburg Road and Gladiolus Drive. Therefore, this warrant is satisfied and consideration should be given for a traffic signal in the future. The results are shown in Table 9.

TABLE 9
Eight -Hour Vehicular Volume Warrant
Harrisburg Road and Gladiolus Drive

| Start/Ending | Harrisburg Road (Major Street) (2020 Volumes) | | | | Gladiolus Drive (Minor Street) Volumes | | Warrant Met |
|---------------------|---|-----|-------------------|-------------------------|--|-------------------------|----------------|
| | SB | NB | Total Approach | Minimum Requirements | Total Approach | Minimum Requirements | |
| 6:00 AM / 7:00 AM | 270 | 350 | 620 | 900 | 116 | 75 | N |
| 7:00 AM / 8:00 AM | 389 | 929 | 1318 | 900 | 227 | 75 | Y |
| 8:00 AM / 9:00 AM | 334 | 513 | 847 | 900 | 139 | 75 | N |
| 9:00 AM / 10:00 AM | 352 | 410 | 762 | 900 | 103 | 75 | N |
| 10:00 AM / 11:00 AM | 332 | 415 | 747 | 900 | 93 | 75 | N |
| 11:00 AM / 12:00 PM | 434 | 440 | 874 | 900 | 118 | 75 | N |
| 12:00 PM / 1:00 PM | 516 | 467 | 983 | 900 | 139 | 75 | Y |
| 1:00 PM / 2:00 PM | 521 | 473 | 994 | 900 | 137 | 75 | Y |
| 2:00 PM. / 3:00 PM | 612 | 560 | 1172 | 900 | 194 | 75 | Y |
| 3:00 PM. / 4:00 PM | 720 | 589 | 1309 | 900 | 132 | 75 | Y |
| 4:00 PM / 5:00 PM | 821 | 582 | 1403 | 900 | 166 | 75 | Y |
| 5:00 PM / 6:00 PM | 927 | 592 | 1519 | 900 | 116 | 75 | Y |
| 6:00 PM / 7:00 PM | 641 | 520 | 1161 | 900 | 141 | 75 | Y |

Major Street met minimum requirement.

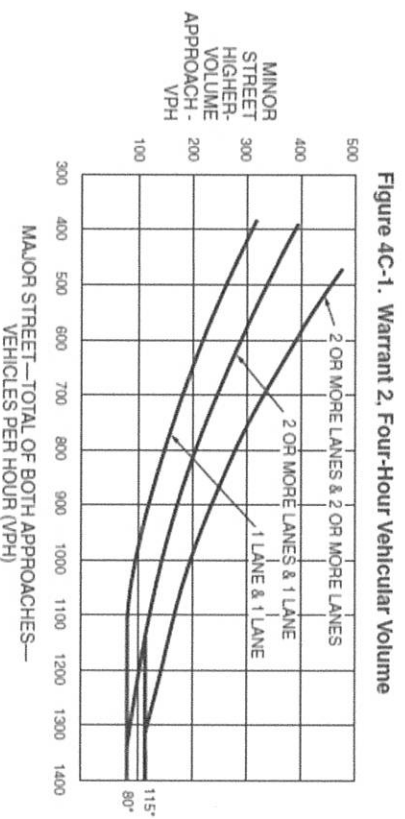
Minor Street met minimum requirement.

Hour satisfied minimum requirement.

Warrant 2, Four-Hour Vehicular Volume

The MUTCD states the following for Warrant 2:

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volumes shall not be required to be on the same approach during each of these 4 hours.



As stated previously, the existing counts for both approaches on Harrisburg Road were added together along with the growth factor for the through movements. The projected traffic volumes from the site were then added to the existing eastbound traffic on Gladiolus Drive. Again, due to the high volume of left turns, no right turns were excluded. The analysis for the Four-Hour Vehicular Volume Warrant show that eight of the minimum four hours required were satisfied for the intersection of Harrisburg Road and Gladiolus Drive. Therefore, this warrant was also satisfied. The results of the analysis are shown in Table 10.

TABLE 10

**Four-Hour Vehicular Volume Warrant
Harrisburg Road and Gladiolus Drive**

| Start/Ending | Harrisburg Road (Major Street) (2020 Volumes) | | | Gladiolus Drive (Minor Street) Volumes | Warrant Met |
|---------------------|---|------------|-------------------|--|----------------|
| | Southbound | Northbound | Total Approach | | |
| 6:00 AM / 7:00 AM | 270 | 350 | 620 | 116 | N |
| 7:00 AM / 8:00 AM | 389 | 929 | 1318 | 227 | Y |
| 8:00 AM / 9:00 AM | 334 | 513 | 847 | 139 | N |
| 9:00 AM / 10:00 AM | 352 | 410 | 762 | 103 | N |
| 10:00 AM / 11:00 AM | 332 | 415 | 747 | 93 | N |
| 11:00 AM / 12:00 PM | 434 | 440 | 874 | 118 | N |
| 12:00 PM / 1:00 PM | 516 | 467 | 983 | 139 | Y |
| 1:00 PM / 2:00 PM | 521 | 473 | 994 | 137 | Y |
| 2:00 PM / 3:00 PM | 612 | 560 | 1172 | 194 | Y |
| 3:00 PM / 4:00 PM | 720 | 589 | 1309 | 132 | Y |
| 4:00 PM / 5:00 PM | 821 | 582 | 1403 | 166 | Y |
| 5:00 PM / 6:00 PM | 927 | 592 | 1519 | 116 | Y |
| 6:00 PM / 7:00 PM | 641 | 520 | 1161 | 141 | Y |

Hour satisfied.

The Signal Warrant Analysis does show that if the Future Access Drive is not constructed in the year 2020, this intersection will meet two different signal warrants. However, if the future Access Drive is constructed, and Gladiolus Drive is able to utilize this new access drive, traffic volumes will decrease at the Gladiolus Drive and Harrisburg Road intersection. This is due to the anticipated reduction of eastbound traffic on Gladiolus Drive turning left onto Harrisburg Road at the intersection. The eastbound left turn movement should experience a 25 to 30% decrease in traffic over current volumes. This being the case, if the future Access Drive is constructed, due to a significant drop in eastbound left turns at Gladiolus Drive and Harrisburg Road signal, warrants would not be expected to be met. This assumption is based upon the fact that current existing conditions do not warrant a signal at this location from the previously mentioned traffic study. If left turns decrease compared to existing, the need for signalization would also decrease.

SUMMARY

The purpose of this study was to evaluate the impact to traffic if the undeveloped property at the west end of Gladiolus Drive is rezoned to allow multi-family. The particular impact studied was the existing intersection of Gladiolus Drive and Harrisburg Road. The study included a horizon year of 2020 traffic volumes and included both "with a future access drive", and "without a future access drive". The purpose further included an evaluation of this intersection to determine if any signal warrants would be met with the added vehicles from the proposed development.

Information including traffic counts at the intersection of Gladiolus Drive and Harrisburg Road was obtained from a recent traffic study for the City of Jonesboro along Harrisburg Road. Using this existing data and projected traffic volumes from the proposed development, LOS analysis was performed at this intersection. This analysis included existing conditions, 2020 traffic volumes without the development (no-build), 2020 traffic volumes with the development (build) without the future access drive, and 2020 traffic volumes with the development (build) with the future access drive. All the LOS analysis for the year 2020 included improvements to Harrisburg Road to a five-lane typical section. The results of the LOS analysis showed that currently with the existing lane configuration and volumes, the intersection operates at a LOS "F" for the critical eastbound left turn movement. With improvements in 2020 and "no-build" this movement will improve to a LOS "C". With the development in 2020 and without the future access drive, the LOS slips to a "D" in the AM Peak Hour and an "E" in the PM Peak Hour. If the future access drive is constructed under these same conditions there is a significant decrease in delay improving this eastbound left turn movement to a LOS "C".

The results of the signal warrant analysis concluded that in 2020 with the development, and without construction of the future access drive, a signal is warranted at this intersection. However, if the future access drive is constructed and Gladiolus Drive traffic are allowed to access this drive, traffic volumes for this left turn movement will significantly decrease. Therefore, with the construction of the future access drive, the intersection of Gladiolus Drive and Harrisburg Road would most likely not meet warrants for signalization.

In conclusion, the development of this property to include multi-family residential will significantly increase traffic at the Gladiolus Drive and Harrisburg Road intersection without the construction of future access drive. Warrants for signalization will also be met without the construction of this access drive. However, if the future access drive is constructed, eastbound left turning traffic will decrease and this intersection will operate at an acceptable LOS. It is recommended that strong consideration be given to the construction of this future access drive with the development of this property.

APPENDIX

Title EXISTING TRAFFIC COUNTS
Study Name Gladiolus Dr @ Harrisburg Rd TMC (Tues)
Start Date 04/11/2017
Start Time 5:30 AM

| Start Time | Harrisburg Rd Southbound | | | Harrisburg Rd Northbound | | | Gladiolus Dr Eastbound | | | Int. Total |
|--------------|--------------------------|------|------------|--------------------------|------|------------|------------------------|------|------------|------------|
| | Right | Thru | App. Total | Thru | Left | App. Total | Right | Left | App. Total | |
| | | | | | | | | | | |
| 5:30 AM | 1 | 13 | 14 | 36 | 0 | 36 | 0 | 7 | 7 | 57 |
| 5:45 AM | 2 | 35 | 37 | 55 | 1 | 56 | 0 | 14 | 14 | 107 |
| Hourly Total | 3 | 48 | 51 | 91 | 1 | 92 | 0 | 21 | 21 | 164 |
| 6:00 AM | 6 | 32 | 38 | 43 | 1 | 44 | 0 | 13 | 13 | 95 |
| 6:15 AM | 5 | 71 | 76 | 63 | 0 | 63 | 0 | 10 | 10 | 149 |
| 6:30 AM | 7 | 51 | 58 | 105 | 3 | 108 | 0 | 24 | 24 | 190 |
| 6:45 AM | 15 | 70 | 85 | 113 | 6 | 119 | 3 | 15 | 18 | 222 |
| Hourly Total | 33 | 224 | 257 | 324 | 10 | 334 | 3 | 62 | 65 | 656 |
| 7:00 AM | 9 | 58 | 67 | 152 | 0 | 152 | 1 | 20 | 21 | 240 |
| 7:15 AM | 7 | 74 | 81 | 234 | 1 | 235 | 10 | 19 | 29 | 345 |
| 7:30 AM | 9 | 83 | 92 | 263 | 4 | 267 | 8 | 16 | 24 | 383 |
| 7:45 AM | 12 | 120 | 132 | 232 | 1 | 233 | 6 | 19 | 25 | 390 |
| Hourly Total | 37 | 335 | 372 | 881 | 6 | 887 | 25 | 74 | 99 | 1358 |
| 8:00 AM | 10 | 69 | 79 | 140 | 4 | 144 | 2 | 12 | 14 | 237 |
| 8:15 AM | 7 | 83 | 90 | 108 | 2 | 110 | 5 | 22 | 27 | 227 |
| 8:30 AM | 6 | 58 | 64 | 113 | 2 | 115 | 2 | 16 | 18 | 197 |
| 8:45 AM | 12 | 74 | 86 | 119 | 1 | 120 | 2 | 17 | 19 | 225 |
| Hourly Total | 35 | 284 | 319 | 480 | 9 | 489 | 11 | 67 | 78 | 886 |
| 9:00 AM | 8 | 80 | 88 | 93 | 1 | 94 | 2 | 14 | 16 | 198 |
| 9:15 AM | 4 | 69 | 73 | 126 | 0 | 126 | 3 | 11 | 14 | 213 |
| 9:30 AM | 13 | 74 | 87 | 90 | 1 | 91 | 3 | 11 | 14 | 192 |
| 9:45 AM | 6 | 82 | 88 | 79 | 0 | 79 | 0 | 14 | 14 | 181 |
| Hourly Total | 31 | 305 | 336 | 388 | 2 | 390 | 8 | 50 | 58 | 784 |
| 10:00 AM | 6 | 72 | 78 | 98 | 2 | 100 | 2 | 12 | 14 | 192 |
| 10:15 AM | 6 | 76 | 82 | 92 | 3 | 95 | 2 | 6 | 8 | 185 |
| 10:30 AM | 11 | 54 | 65 | 114 | 0 | 114 | 0 | 17 | 17 | 196 |
| 10:45 AM | 8 | 84 | 92 | 85 | 1 | 86 | 1 | 12 | 13 | 191 |
| Hourly Total | 31 | 286 | 317 | 389 | 6 | 395 | 5 | 47 | 52 | 764 |
| 11:00 AM | 15 | 78 | 93 | 112 | 1 | 113 | 1 | 10 | 11 | 217 |
| 11:15 AM | 7 | 88 | 95 | 92 | 2 | 94 | 2 | 11 | 13 | 202 |
| 11:30 AM | 18 | 89 | 107 | 103 | 2 | 105 | 2 | 17 | 19 | 231 |
| 11:45 AM | 12 | 108 | 120 | 102 | 5 | 107 | 6 | 17 | 23 | 250 |
| Hourly Total | 52 | 363 | 415 | 409 | 10 | 419 | 11 | 55 | 66 | 900 |
| 12:00 PM | 23 | 112 | 135 | 106 | 2 | 108 | 4 | 12 | 16 | 259 |
| 12:15 PM | 10 | 125 | 135 | 94 | 2 | 96 | 2 | 13 | 15 | 246 |
| 12:30 PM | 17 | 91 | 108 | 95 | 3 | 98 | 2 | 17 | 19 | 225 |
| 12:45 PM | 17 | 99 | 116 | 140 | 3 | 143 | 6 | 22 | 28 | 287 |
| Hourly Total | 67 | 427 | 494 | 435 | 10 | 445 | 14 | 64 | 78 | 1017 |
| 1:00 PM | 12 | 121 | 133 | 98 | 1 | 99 | 2 | 12 | 14 | 246 |
| 1:15 PM | 12 | 96 | 108 | 116 | 0 | 116 | 2 | 24 | 26 | 250 |
| 1:30 PM | 14 | 119 | 133 | 112 | 3 | 115 | 0 | 19 | 19 | 267 |
| 1:45 PM | 10 | 114 | 124 | 118 | 2 | 120 | 0 | 18 | 18 | 262 |
| Hourly Total | 48 | 450 | 498 | 444 | 6 | 450 | 4 | 73 | 77 | 1025 |

| | | | | | | | | | | |
|--------------|-----|------|------|------|-----|------|-----|-----|------|-------|
| 2:00 PM | 15 | 142 | 157 | 115 | 4 | 119 | 5 | 24 | 29 | 305 |
| 2:15 PM | 13 | 127 | 140 | 137 | 4 | 141 | 7 | 22 | 29 | 310 |
| 2:30 PM | 20 | 131 | 151 | 148 | 4 | 152 | 5 | 21 | 26 | 329 |
| 2:45 PM | 20 | 119 | 139 | 117 | 5 | 122 | 4 | 21 | 25 | 286 |
| Hourly Total | 68 | 519 | 587 | 517 | 17 | 534 | 21 | 88 | 109 | 1230 |
| 3:00 PM | 16 | 132 | 148 | 128 | 7 | 135 | 4 | 15 | 19 | 302 |
| 3:15 PM | 22 | 134 | 156 | 134 | 7 | 141 | 1 | 20 | 21 | 318 |
| 3:30 PM | 20 | 167 | 187 | 136 | 2 | 138 | 3 | 19 | 22 | 347 |
| 3:45 PM | 30 | 169 | 199 | 146 | 2 | 148 | 2 | 10 | 12 | 359 |
| Hourly Total | 88 | 602 | 690 | 544 | 18 | 562 | 10 | 64 | 74 | 1326 |
| 4:00 PM | 28 | 161 | 189 | 140 | 1 | 141 | 5 | 19 | 24 | 354 |
| 4:15 PM | 25 | 159 | 184 | 116 | 4 | 120 | 5 | 23 | 28 | 332 |
| 4:30 PM | 23 | 176 | 199 | 146 | 4 | 150 | 8 | 13 | 21 | 370 |
| 4:45 PM | 27 | 188 | 215 | 139 | 5 | 144 | 6 | 19 | 25 | 384 |
| Hourly Total | 103 | 684 | 787 | 541 | 14 | 555 | 24 | 74 | 98 | 1440 |
| 5:00 PM | 22 | 205 | 227 | 130 | 1 | 131 | 4 | 17 | 21 | 379 |
| 5:15 PM | 27 | 236 | 263 | 146 | 3 | 149 | 1 | 7 | 8 | 420 |
| 5:30 PM | 28 | 205 | 233 | 142 | 5 | 147 | 6 | 18 | 24 | 404 |
| 5:45 PM | 15 | 151 | 166 | 133 | 5 | 138 | 2 | 10 | 12 | 316 |
| Hourly Total | 92 | 797 | 889 | 551 | 14 | 565 | 13 | 52 | 65 | 1519 |
| 6:00 PM | 23 | 154 | 177 | 123 | 3 | 126 | 3 | 15 | 18 | 321 |
| 6:15 PM | 20 | 153 | 173 | 128 | 4 | 132 | 4 | 12 | 16 | 321 |
| 6:30 PM | 14 | 123 | 137 | 132 | 5 | 137 | 8 | 12 | 20 | 294 |
| 6:45 PM | 20 | 108 | 128 | 95 | 6 | 101 | 5 | 20 | 25 | 254 |
| Hourly Total | 77 | 538 | 615 | 478 | 18 | 496 | 20 | 59 | 79 | 1190 |
| 7:00 PM | 20 | 137 | 157 | 85 | 5 | 90 | 1 | 20 | 21 | 268 |
| 7:15 PM | 19 | 107 | 126 | 72 | 6 | 78 | 6 | 14 | 20 | 224 |
| Grand Total | 804 | 6106 | 6910 | 6629 | 152 | 6781 | 176 | 884 | 1060 | 14751 |

Title 2020 Projected Traffic Volumes
Study Name Gladiolus Dr @ Harrisburg Rd TMC (Tues)
Start Date 04/1/2017
Start Time 5:30 AM

| | Harrisburg Rd Southbound | | | | Harrisburg Rd Northbound | | | | Gladiolus Dr Eastbound | | | | Int. Total |
|--------------|--------------------------|------|----------------|------------|--------------------------|----------------|------|------------|------------------------|------|------------|------|------------|
| | Right | Thru | Thru Adjusted¹ | App. Total | Thru | Thru Adjusted¹ | Left | App. Total | Right | Left | App. Total | | |
| | | | | | | | | | | | | | |
| Start Time | | | | | | | | | | | | | |
| 5:30 AM | 1 | 13 | 14 | 15 | 36 | 38 | 0 | 38 | 0 | 7 | 7 | 60 | |
| 5:45 AM | 2 | 35 | 37 | 39 | 55 | 58 | 1 | 59 | 0 | 14 | 14 | 112 | |
| Hourly Total | 3 | 48 | 51 | 54 | 91 | 96 | 1 | 97 | 0 | 21 | 21 | 172 | |
| 6:00 AM | 6 | 32 | 34 | 40 | 43 | 45 | 1 | 46 | 0 | 13 | 13 | 99 | |
| 6:15 AM | 5 | 71 | 75 | 80 | 63 | 66 | 0 | 66 | 0 | 10 | 10 | 156 | |
| 6:30 AM | 7 | 51 | 54 | 61 | 105 | 110 | 3 | 113 | 0 | 24 | 24 | 198 | |
| 6:45 AM | 15 | 70 | 74 | 89 | 113 | 119 | 6 | 125 | 3 | 15 | 18 | 232 | |
| Hourly Total | 33 | 224 | 237 | 270 | 324 | 340 | 10 | 350 | 3 | 62 | 65 | 685 | |
| 7:00 AM | 9 | 58 | 61 | 70 | 152 | 159 | 0 | 159 | 1 | 20 | 21 | 250 | |
| 7:15 AM | 7 | 74 | 78 | 85 | 234 | 245 | 1 | 246 | 10 | 19 | 29 | 360 | |
| 7:30 AM | 9 | 83 | 87 | 96 | 263 | 276 | 4 | 280 | 8 | 16 | 24 | 400 | |
| 7:45 AM | 12 | 120 | 126 | 138 | 232 | 243 | 1 | 244 | 6 | 19 | 25 | 407 | |
| Hourly Total | 37 | 335 | 352 | 389 | 881 | 923 | 6 | 929 | 25 | 74 | 99 | 1417 | |
| 8:00 AM | 10 | 69 | 73 | 83 | 140 | 147 | 4 | 151 | 2 | 12 | 14 | 248 | |
| 8:15 AM | 7 | 83 | 87 | 94 | 108 | 113 | 2 | 115 | 5 | 22 | 27 | 236 | |
| 8:30 AM | 6 | 58 | 61 | 67 | 113 | 119 | 2 | 121 | 2 | 16 | 18 | 206 | |
| 8:45 AM | 12 | 74 | 78 | 90 | 119 | 125 | 1 | 126 | 2 | 17 | 19 | 235 | |
| Hourly Total | 35 | 284 | 299 | 334 | 480 | 504 | 9 | 513 | 11 | 67 | 78 | 925 | |
| 9:00 AM | 8 | 80 | 84 | 92 | 93 | 98 | 1 | 99 | 2 | 14 | 16 | 207 | |
| 9:15 AM | 4 | 69 | 73 | 77 | 126 | 132 | 0 | 132 | 3 | 11 | 14 | 223 | |
| 9:30 AM | 13 | 74 | 78 | 91 | 90 | 95 | 1 | 96 | 3 | 11 | 14 | 201 | |
| 9:45 AM | 6 | 82 | 86 | 92 | 79 | 83 | 0 | 83 | 0 | 14 | 14 | 189 | |
| Hourly Total | 31 | 305 | 321 | 352 | 388 | 408 | 2 | 410 | 8 | 50 | 58 | 820 | |
| 10:00 AM | 6 | 72 | 76 | 82 | 98 | 103 | 2 | 105 | 2 | 12 | 14 | 201 | |
| 10:15 AM | 6 | 76 | 80 | 86 | 92 | 97 | 3 | 100 | 2 | 6 | 8 | 194 | |
| 10:30 AM | 11 | 54 | 57 | 68 | 114 | 120 | 0 | 120 | 0 | 17 | 17 | 205 | |
| 10:45 AM | 8 | 84 | 88 | 96 | 85 | 89 | 1 | 90 | 1 | 12 | 13 | 199 | |
| Hourly Total | 31 | 286 | 301 | 332 | 389 | 409 | 6 | 415 | 5 | 47 | 52 | 799 | |
| 11:00 AM | 15 | 78 | 82 | 97 | 112 | 118 | 1 | 119 | 1 | 10 | 11 | 227 | |
| 11:15 AM | 7 | 88 | 93 | 100 | 92 | 97 | 2 | 99 | 2 | 11 | 13 | 212 | |
| 11:30 AM | 18 | 89 | 94 | 112 | 103 | 108 | 2 | 110 | 2 | 17 | 19 | 241 | |
| 11:45 AM | 12 | 108 | 113 | 125 | 102 | 107 | 5 | 112 | 6 | 17 | 23 | 260 | |
| Hourly Total | 52 | 363 | 382 | 434 | 409 | 430 | 10 | 440 | 11 | 55 | 66 | 940 | |
| 12:00 PM | 23 | 112 | 118 | 141 | 106 | 111 | 2 | 113 | 4 | 12 | 16 | 270 | |
| 12:15 PM | 10 | 125 | 131 | 141 | 94 | 99 | 2 | 101 | 2 | 13 | 15 | 257 | |
| 12:30 PM | 17 | 91 | 96 | 113 | 95 | 100 | 3 | 103 | 2 | 17 | 19 | 235 | |
| 12:45 PM | 17 | 99 | 104 | 121 | 140 | 147 | 3 | 150 | 6 | 22 | 28 | 299 | |
| Hourly Total | 67 | 427 | 449 | 516 | 435 | 457 | 10 | 467 | 14 | 64 | 78 | 1061 | |
| 1:00 PM | 12 | 121 | 127 | 139 | 98 | 103 | 1 | 104 | 2 | 12 | 14 | 257 | |
| 1:15 PM | 12 | 96 | 101 | 113 | 116 | 122 | 0 | 122 | 2 | 24 | 26 | 261 | |
| 1:30 PM | 14 | 119 | 125 | 139 | 112 | 118 | 3 | 121 | 0 | 19 | 19 | 279 | |
| 1:45 PM | 10 | 114 | 120 | 130 | 118 | 124 | 2 | 126 | 0 | 18 | 18 | 274 | |
| Hourly Total | 48 | 450 | 473 | 521 | 444 | 467 | 6 | 473 | 4 | 73 | 77 | 1071 | |
| 2:00 PM | 15 | 142 | 149 | 164 | 115 | 121 | 4 | 125 | 5 | 24 | 29 | 318 | |
| 2:15 PM | 13 | 127 | 133 | 146 | 137 | 144 | 4 | 148 | 7 | 22 | 29 | 323 | |
| 2:30 PM | 20 | 131 | 137 | 157 | 148 | 155 | 4 | 159 | 5 | 21 | 26 | 342 | |
| 2:45 PM | 20 | 119 | 125 | 145 | 117 | 123 | 5 | 128 | 4 | 21 | 25 | 298 | |
| Hourly Total | 68 | 519 | 544 | 612 | 517 | 543 | 17 | 560 | 21 | 88 | 109 | 1281 | |
| 3:00 PM | 16 | 132 | 139 | 155 | 128 | 134 | 7 | 141 | 4 | 15 | 19 | 315 | |
| 3:15 PM | 22 | 134 | 141 | 163 | 134 | 141 | 7 | 148 | 1 | 20 | 21 | 332 | |
| 3:30 PM | 20 | 167 | 175 | 195 | 136 | 143 | 2 | 145 | 3 | 19 | 22 | 362 | |
| 3:45 PM | 30 | 169 | 177 | 207 | 146 | 153 | 2 | 155 | 2 | 10 | 12 | 374 | |
| Hourly Total | 88 | 602 | 632 | 720 | 544 | 571 | 18 | 589 | 10 | 64 | 74 | 1383 | |

1. Calculated by increasing the Thru column by a factor of 1.015^N (1.5% growth for a period of 3 years)

| | | | | | | | | | | | | |
|--------------|-----|------|------|------|------|------|-----|------|-----|-----|------|-------|
| 4:00 PM | 28 | 161 | 169 | 197 | 140 | 147 | 1 | 148 | 5 | 19 | 24 | 369 |
| 4:15 PM | 25 | 159 | 167 | 192 | 116 | 122 | 4 | 126 | 5 | 23 | 28 | 346 |
| 4:30 PM | 23 | 176 | 185 | 208 | 146 | 153 | 4 | 157 | 8 | 13 | 21 | 386 |
| 4:45 PM | 27 | 188 | 197 | 224 | 139 | 146 | 5 | 151 | 6 | 19 | 25 | 400 |
| Hourly Total | 103 | 684 | 718 | 821 | 541 | 568 | 14 | 582 | 24 | 74 | 98 | 1501 |
| 5:00 PM | 22 | 205 | 215 | 237 | 130 | 136 | 1 | 137 | 4 | 17 | 21 | 395 |
| 5:15 PM | 27 | 236 | 247 | 274 | 146 | 153 | 3 | 156 | 1 | 7 | 8 | 438 |
| 5:30 PM | 28 | 205 | 215 | 243 | 142 | 149 | 5 | 154 | 6 | 18 | 24 | 421 |
| 5:45 PM | 15 | 151 | 158 | 173 | 133 | 140 | 5 | 145 | 2 | 10 | 12 | 330 |
| Hourly Total | 92 | 797 | 373 | 927 | 551 | 578 | 14 | 592 | 13 | 52 | 65 | 1122 |
| 6:00 PM | 23 | 154 | 162 | 185 | 123 | 129 | 3 | 132 | 3 | 15 | 18 | 335 |
| 6:15 PM | 20 | 153 | 160 | 180 | 128 | 134 | 4 | 138 | 4 | 12 | 16 | 334 |
| 6:30 PM | 14 | 123 | 129 | 143 | 132 | 139 | 5 | 144 | 8 | 12 | 20 | 307 |
| 6:45 PM | 20 | 108 | 113 | 133 | 95 | 100 | 6 | 106 | 5 | 20 | 25 | 264 |
| Hourly Total | 77 | 538 | 564 | 641 | 478 | 502 | 18 | 520 | 20 | 59 | 79 | 1240 |
| 7:00 PM | 20 | 137 | 144 | 164 | 85 | 89 | 5 | 94 | 1 | 20 | 21 | 279 |
| 7:15 PM | 19 | 107 | 112 | 131 | 72 | 76 | 6 | 82 | 6 | 14 | 20 | 233 |
| Grand Total | 804 | 6106 | 6414 | 7218 | 6629 | 6961 | 152 | 7113 | 176 | 884 | 1060 | 21712 |

1. Calculated by increasing the Thru column by a factor of 1.015ⁿ3 (1.5% growth for a period of 3 years)

Calculations for Signal Warrants along Gladiolus and Harrisburg Rd 2020 Traffic Volumes

| Starting/Ending | Harrisburg Road (Major Street) 2020 Volumes | | | Gladiolus Drive (Minor Street) 2020 Volumes | | | |
|---------------------|---|-----------------|----------------|---|---------------|---------------------------|---------------------------|
| | SB ¹ | NB ¹ | Total Approach | EB Existing | EB Existing % | EB Apartment ² | Total Revised EB Approach |
| 6:00 AM - 7:00 AM | 270 | 350 | 620 | 65 | 6.51% | 51 | 116 |
| 7:00 AM - 8:00 AM | 389 | 929 | 1318 | 99 | 9.92% | 128 | 227 |
| 8:00 AM - 9:00 AM | 334 | 513 | 847 | 78 | 7.82% | 61 | 139 |
| 9:00 AM - 10:00 AM | 352 | 410 | 762 | 58 | 5.81% | 45 | 103 |
| 10:00 AM - 11:00 AM | 332 | 415 | 747 | 52 | 5.21% | 41 | 93 |
| 11:00 AM - 12:00 PM | 434 | 440 | 874 | 66 | 6.61% | 52 | 118 |
| 12:00 PM - 1:00 PM | 516 | 467 | 983 | 78 | 7.82% | 61 | 139 |
| 1:00 PM - 2:00 PM | 521 | 473 | 994 | 77 | 7.72% | 60 | 137 |
| 2:00 PM - 3:00 PM | 612 | 560 | 1172 | 109 | 10.92% | 85 | 194 |
| 3:00 PM - 4:00 PM | 720 | 589 | 1309 | 74 | 7.41% | 58 | 132 |
| 4:00 PM - 5:00 PM | 821 | 582 | 1403 | 98 | 9.82% | 68 | 166 |
| 5:00 PM - 6:00 PM | 927 | 592 | 1519 | 65 | 6.51% | 51 | 116 |
| 6:00 PM - 7:00 PM | 641 | 520 | 1161 | 79 | 7.92% | 62 | 141 |
| TOTAL | | | 998 | 100.00% | 823 | | |

Trip Generation Calculations

$$T_{24 \text{ Hour}} = 6.06 * (X) + 123.56$$

$$T_{24 \text{ Hour}} = 6.06 * (320) + 123.56$$

$$T_{24 \text{ Hour}} = 2062 \quad \text{Entering \& Exiting Site}$$

Distribution

$$\text{Entering} = 50\%$$

$$\text{Exiting} = 50\%$$

Time of Day Distribution

$$6\text{AM to }7\text{PM} = 75\%$$

$$7\text{PM to }6\text{AM} = 25\%$$

$$T_{\text{Exiting}} = 0.5 * T_{24\text{Hour}} \quad T_{6\text{AM}-7\text{PM}} = 0.75 * T_{\text{Exiting}}$$





$$T_{\text{Exiting}} = 0.5 * 2062 \quad T_{6\text{AM}-7\text{PM}} = 0.75 * 1031$$

$$T_{\text{Exiting}} = 1031 \quad T_{6\text{AM}-7\text{PM}} = 774$$







1. The existing through movement volumes are increased by a factor of 1.046 to achieve 2020 volumes.
2. EB Apartment Volumes = 774 vehicles * EB Existing %, Except for AM/PM Peak hours taken from Trip Gen.

Harrisburg Rd @ Gladiolus Dr AM Peak

HCM 6th TWSC
Existing Conditions & Control

| Intersection | | | | | | | | | |
|--------------------------|---|---|-------|---|---|------|--|--|--|
| Int Delay, s/Veh | 3.5 | | | | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR | | | |
| Lane Configurations |  |  | |  |  | | | | |
| Traffic Vol, veh/h | 74 | 25 | 6 | 881 | 335 | 37 | | | |
| Future Vol, veh/h | 74 | 25 | 6 | 881 | 335 | 37 | | | |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Sign Control | Stop | Stop | Free | Free | Free | Free | | | |
| RT Channelized | - | None | - | None | - | None | | | |
| Storage Length | 0 | 0 | - | - | - | - | | | |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - | | | |
| Grade, % | 0 | - | - | 0 | 0 | - | | | |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 | | | |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | | | |
| Mvmt Flow | 85 | 29 | 7 | 1013 | 385 | 43 | | | |
| Major/Minor | Minor2 | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 1434 | 407 | 428 | 0 | - | 0 | | | |
| Stage 1 | 407 | - | - | - | - | - | | | |
| Stage 2 | 1027 | - | - | - | - | - | | | |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - | | | |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - | | | |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - | | | |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - | | | |
| Pot Cap-1 Maneuver | 147 | 644 | 1131 | - | - | - | | | |
| Stage 1 | 672 | - | - | - | - | - | | | |
| Stage 2 | 345 | - | - | - | - | - | | | |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 145 | 644 | 1131 | - | - | - | | | |
| Mov Cap-2 Maneuver | 145 | - | - | - | - | - | | | |
| Stage 1 | 663 | - | - | - | - | - | | | |
| Stage 2 | 345 | - | - | - | - | - | | | |
| | | | | | | | | | |
| Approach | EB | | NB | | SB | | | | |
| HCM Control Delay, s | 47.7 | | 0.1 | | 0 | | | | |
| HCM LOS | E | | | | | | | | |
| | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR | | | |
| Capacity (veh/h) | 1131 | - | 145 | 644 | - | - | | | |
| HCM Lane V/C Ratio | 0.006 | - | 0.587 | 0.045 | - | - | | | |
| HCM Control Delay (s) | 8.2 | 0 | 60.1 | 10.9 | - | - | | | |
| HCM Lane LOS | A | A | F | B | - | - | | | |
| HCM 95th %tile Q(veh) | 0 | - | 3 | 0.1 | - | - | | | |

| Intersection | | | | | | | | | |
|------------------|---|--|--|--|--|--|--|--|--|
| Int Delay, s/veh | 3 | | | | | | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|---|
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 112 | 34 | 45 | 582 | 872 | 199 |
| Future Vol, veh/h | 112 | 34 | 45 | 582 | 872 | 199 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 119 | 36 | 48 | 619 | 928 | 212 |

| Major/Minor | Minor2 | Major1 | | Major2 | |
|----------------------|--------|--------|------|--------|---|
| Conflicting Flow All | 1440 | 570 | 1140 | 0 | 0 |
| Stage 1 | 1034 | - | - | - | - |
| Stage 2 | 406 | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 | - | - |
| Pot Cap-1 Maneuver | 124 | 465 | 609 | - | - |
| Stage 1 | 304 | - | - | - | - |
| Stage 2 | 641 | - | - | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | ~ 114 | 465 | 609 | - | - |
| Mov Cap-2 Maneuver | 217 | - | - | - | - |
| Stage 1 | 280 | - | - | - | - |
| Stage 2 | 641 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 33.9 | 0.8 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 609 | - | 217 | 465 | - | - |
| HCM Lane V/C Ratio | 0.079 | - | 0.549 | 0.078 | - | - |
| HCM Control Delay (s) | 11.4 | - | 40.1 | 13.4 | - | - |
| HCM Lane LOS | B | - | E | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 2.9 | 0.3 | - | - |





| Notes | | | | | | |
|--|--|--|--|--|--|--|
| ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon | | | | | | |

Harrisburg Rd @ Gladiolus Dr PM Peak

HCM 6th TWSC
Existing Conditions & Control

Intersection

Int Delay, s/veh 2.9

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|------|---|---|------|
| Lane Configurations |  |  | |  |  | |
| Traffic Vol, veh/h | 61 | 17 | 14 | 557 | 834 | 104 |
| Future Vol, veh/h | 61 | 17 | 14 | 557 | 834 | 104 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 65 | 18 | 15 | 593 | 887 | 111 |

| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1566 | 943 | 998 |
| Stage 1 | 943 | - | - |
| Stage 2 | 623 | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 |
| Critical Hdwy Stg 1 | 5.42 | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 |
| Pot Cap-1 Maneuver | 122 | 318 | 693 |
| Stage 1 | 379 | - | - |
| Stage 2 | 535 | - | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 118 | 318 | 693 |
| Mov Cap-2 Maneuver | 118 | - | - |
| Stage 1 | 367 | - | - |
| Stage 2 | 535 | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 56.7 | 0.3 | 0 |
| HCM LOS | F | | |







| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 693 | - | 118 | 318 | - | - |
| HCM Lane V/C Ratio | 0.021 | - | 0.55 | 0.057 | - | - |
| HCM Control Delay (s) | 10.3 | 0 | 67.7 | 17 | - | - |
| HCM Lane LOS | B | A | F | C | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 2.6 | 0.2 | - | - |

Harrisburg Rd @ Gladiolus Dr AM Peak

HCM 6th TWSC
2020 Horizon Year with Harrisburg Rd Improvements (No Build)

Intersection

Int Delay, s/veh 1.1

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|---|
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 74 | 25 | 6 | 921 | 350 | 37 |
| Future Vol, veh/h | 74 | 25 | 6 | 921 | 350 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 85 | 29 | 7 | 1059 | 402 | 43 |

| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 968 | 223 | 445 |
| Stage 1 | 424 | - | - |
| Stage 2 | 544 | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 |
| Pot Cap-1 Maneuver | 251 | 780 | 1112 |
| Stage 1 | 628 | - | - |
| Stage 2 | 546 | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 249 | 780 | 1112 |
| Mov Cap-2 Maneuver | 377 | - | - |
| Stage 1 | 624 | - | - |
| Stage 2 | 546 | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 15.4 | 0.1 | 0 |
| HCM LOS | C | - | - |







| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 1112 | - | 377 | 780 | - | - |
| HCM Lane V/C Ratio | 0.006 | - | 0.226 | 0.037 | - | - |
| HCM Control Delay (s) | 8.3 | - | 17.3 | 9.8 | - | - |
| HCM Lane LOS | A | - | C | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.9 | 0.1 | - | - |

Harrisburg Rd @ Gladiolus Dr PM Peak

HCM 6th TWSC
2020 Horizon Year with Harrisburg Rd Improvements (No Build)

Intersection

Int Delay, s/veh 1.1

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|---|
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 61 | 17 | 14 | 582 | 872 | 104 |
| Future Vol, veh/h | 61 | 17 | 14 | 582 | 872 | 104 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 65 | 18 | 15 | 619 | 928 | 111 |

| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1324 | 520 | 1039 |
| Stage 1 | 984 | - | - |
| Stage 2 | 340 | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 |
| Pot Cap-1 Maneuver | 147 | 501 | 665 |
| Stage 1 | 323 | - | - |
| Stage 2 | 692 | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 144 | 501 | 665 |
| Mov Cap-2 Maneuver | 250 | - | - |
| Stage 1 | 316 | - | - |
| Stage 2 | 692 | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 21.8 | 0.2 | 0 |
| HCM LOS | C | - | - |





| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 665 | - | 250 | 501 | - | - |
| HCM Lane V/C Ratio | 0.022 | - | 0.26 | 0.036 | - | - |
| HCM Control Delay (s) | 10.5 | - | 24.4 | 12.5 | - | - |
| HCM Lane LOS | B | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 1 | 0.1 | - | - |

Harrisburg Rd @ Gladiolus Dr PM Peak

HCM 6th TWSC
Existing Conditions & Control

Intersection

Int Delay, s/veh 2.9

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|------|---|---|------|
| Lane Configurations |  |  | |  |  | |
| Traffic Vol, veh/h | 61 | 17 | 14 | 557 | 834 | 104 |
| Future Vol, veh/h | 61 | 17 | 14 | 557 | 834 | 104 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 65 | 18 | 15 | 593 | 887 | 111 |

| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1566 | 943 | 998 |
| Stage 1 | 943 | - | - |
| Stage 2 | 623 | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 |
| Critical Hdwy Stg 1 | 5.42 | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 |
| Pot Cap-1 Maneuver | 122 | 318 | 693 |
| Stage 1 | 379 | - | - |
| Stage 2 | 535 | - | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 118 | 318 | 693 |
| Mov Cap-2 Maneuver | 118 | - | - |
| Stage 1 | 367 | - | - |
| Stage 2 | 535 | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 56.7 | 0.3 | 0 |
| HCM LOS | F | | |







| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 693 | - | 118 | 318 | - | - |
| HCM Lane V/C Ratio | 0.021 | - | 0.55 | 0.057 | - | - |
| HCM Control Delay (s) | 10.3 | 0 | 67.7 | 17 | - | - |
| HCM Lane LOS | B | A | F | C | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 2.6 | 0.2 | - | - |

Harrisburg Rd @ Gladiolus Dr AM Peak

HCM 6th TWSC
2020 Horizon Year with Harrisburg Rd Improvements (No Build)

Intersection

Int Delay, s/veh 1.1

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|---|
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 74 | 25 | 6 | 921 | 350 | 37 |
| Future Vol, veh/h | 74 | 25 | 6 | 921 | 350 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 85 | 29 | 7 | 1059 | 402 | 43 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|----------------------|--------|------|--------|---|--------|---|
| Conflicting Flow All | 968 | 223 | 445 | 0 | - | 0 |
| Stage 1 | 424 | - | - | - | - | - |
| Stage 2 | 544 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 | - | - | - |
| Pot Cap-1 Maneuver | 251 | 780 | 1112 | - | - | - |
| Stage 1 | 628 | - | - | - | - | - |
| Stage 2 | 546 | - | - | - | - | - |
| Platoon blocked, % | | | | | | |
| Mov Cap-1 Maneuver | 249 | 780 | 1112 | - | - | - |
| Mov Cap-2 Maneuver | 377 | - | - | - | - | - |
| Stage 1 | 624 | - | - | - | - | - |
| Stage 2 | 546 | - | - | - | - | - |

| Approach | EB | | NB | | SB |
|----------------------|------|--|-----|--|----|
| HCM Control Delay, s | 15.4 | | 0.1 | | 0 |
| HCM LOS | C | | | | |







| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 1112 | - | 377 | 780 | - | - |
| HCM Lane V/C Ratio | 0.006 | - | 0.226 | 0.037 | - | - |
| HCM Control Delay (s) | 8.3 | - | 17.3 | 9.8 | - | - |
| HCM Lane LOS | A | - | C | A | - | - |
| HCM 95th %ile Q(veh) | 0 | - | 0.9 | 0.1 | - | - |

Harrisburg Rd @ Gladiolus Dr PM Peak

HCM 6th TWSC
2020 Horizon Year with Harrisburg Rd Improvements (No Build)

Intersection

Int Delay, s/veh 1.1

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|---|
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 61 | 17 | 14 | 582 | 872 | 104 |
| Future Vol, veh/h | 61 | 17 | 14 | 582 | 872 | 104 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 65 | 18 | 15 | 619 | 928 | 111 |

| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1324 | 520 | 1039 |
| Stage 1 | 984 | - | - |
| Stage 2 | 340 | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 |
| Pot Cap-1 Maneuver | 147 | 501 | 665 |
| Stage 1 | 323 | - | - |
| Stage 2 | 692 | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 144 | 501 | 665 |
| Mov Cap-2 Maneuver | 250 | - | - |
| Stage 1 | 316 | - | - |
| Stage 2 | 692 | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 21.8 | 0.2 | 0 |
| HCM LOS | C | | |






| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 665 | - | 250 | 501 | - | - |
| HCM Lane V/C Ratio | 0.022 | - | 0.26 | 0.036 | - | - |
| HCM Control Delay (s) | 10.5 | - | 24.4 | 12.5 | - | - |
| HCM Lane LOS | B | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 1 | 0.1 | - | - |

Harrisburg Rd @ Gladiolus Dr AM Peak

HCM 6th TWSC
2020 Horizon Year (No Future Access Drive) with Harrisburg Rd Improvements (Build)

Intersection

Int Delay, s/veh 3.2

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|------|
| Lane Configurations |  |  |  |  |  | |
| Traffic Vol, veh/h | 170 | 57 | 14 | 921 | 350 | 61 |
| Future Vol, veh/h | 170 | 57 | 14 | 921 | 350 | 61 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 195 | 66 | 16 | 1059 | 402 | 70 |

| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 999 | 236 | 472 |
| Stage 1 | 437 | - | - |
| Stage 2 | 562 | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 |
| Pot Cap-1 Maneuver | 240 | 766 | 1086 |
| Stage 1 | 619 | - | - |
| Stage 2 | 534 | - | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 236 | 766 | 1086 |
| Mov Cap-2 Maneuver | 362 | - | - |
| Stage 1 | 610 | - | - |
| Stage 2 | 534 | - | - |

| Approach | EB | NB | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 22 | 0.1 | 0 |
| HCM LOS | C | | |







| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 1086 | - | 362 | 766 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | 0.54 | 0.086 | - | - |
| HCM Control Delay (s) | 8.4 | - | 26 | 10.1 | - | - |
| HCM Lane LOS | A | - | D | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 3.1 | 0.3 | - | - |

Harrisburg Rd @ Gladiolus Dr AM Peak

HCM 6th TWSC
2020 Horizon Year (No Future Access Drive) with Harrisburg Rd Improvements (Build)

Intersection

Int Delay, s/veh 3.2

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|---|
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 170 | 57 | 14 | 921 | 350 | 61 |
| Future Vol, veh/h | 170 | 57 | 14 | 921 | 350 | 61 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 195 | 66 | 16 | 1059 | 402 | 70 |







| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 999 | 236 | 472 |
| Stage 1 | 437 | - | - |
| Stage 2 | 562 | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 |
| Pot Cap-1 Maneuver | 240 | 766 | 1086 |
| Stage 1 | 619 | - | - |
| Stage 2 | 534 | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 236 | 766 | 1086 |
| Mov Cap-2 Maneuver | 362 | - | - |
| Stage 1 | 610 | - | - |
| Stage 2 | 534 | - | - |

| Approach | EB | NB | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 22 | 0.1 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 1086 | - | 362 | 766 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | 0.54 | 0.086 | - | - |
| HCM Control Delay (s) | 8.4 | - | 26 | 10.1 | - | - |
| HCM Lane LOS | A | - | D | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 3.1 | 0.3 | - | - |

Intersection

Int Delay, s/veh 1.1

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|---|
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 56 | 57 | 14 | 921 | 350 | 24 |
| Future Vol, veh/h | 56 | 57 | 14 | 921 | 350 | 24 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 64 | 66 | 16 | 1059 | 402 | 28 |







| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 978 | 215 | 430 |
| Stage 1 | 416 | - | - |
| Stage 2 | 562 | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 |
| Pot Cap-1 Maneuver | 248 | 790 | 1126 |
| Stage 1 | 634 | - | - |
| Stage 2 | 534 | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 245 | 790 | 1126 |
| Mov Cap-2 Maneuver | 369 | - | - |
| Stage 1 | 625 | - | - |
| Stage 2 | 534 | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 13.4 | 0.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 1126 | - | 369 | 790 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | 0.174 | 0.083 | - | - |
| HCM Control Delay (s) | 8.2 | - | 16.8 | 10 | - | - |
| HCM Lane LOS | A | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.6 | 0.3 | - | - |

Intersection

Int Delay, s/veh 1.2

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|---|---|---|---|---|---|
| Lane Configurations |  |  |  |  |  |  |
| Traffic Vol, veh/h | 41 | 34 | 45 | 582 | 872 | 71 |
| Future Vol, veh/h | 41 | 34 | 45 | 582 | 872 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 44 | 36 | 48 | 619 | 928 | 76 |

| Major/Minor | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1372 | 502 | 1004 |
| Stage 1 | 966 | - | - |
| Stage 2 | 406 | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 |
| Pot Cap-1 Maneuver | 137 | 515 | 686 |
| Stage 1 | 330 | - | - |
| Stage 2 | 641 | - | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 127 | 515 | 686 |
| Mov Cap-2 Maneuver | 234 | - | - |
| Stage 1 | 307 | - | - |
| Stage 2 | 641 | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 18.7 | 0.8 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|------|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 686 | - | 234 | 515 | - | - |
| HCM Lane V/C Ratio | 0.07 | - | 0.186 | 0.07 | - | - |
| HCM Control Delay (s) | 10.6 | - | 23.9 | 12.5 | - | - |
| HCM Lane LOS | B | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.7 | 0.2 | - | - |

Site Access Drive @ Gladiolus Dr
AM Peak

HCM 6th TWSC
2020 Horizon Year Site Entrance





| Intersection | | | | | | | | | |
|--------------------------|--------|------|--------|------|--------|-------|--|--|--|
| Int Delay, s/veh | 4.5 | | | | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR | | | |
| Lane Configurations | | ← | ← | | ↑ | ↑ | | | |
| Traffic Vol, veh/h | 0 | 99 | 43 | 32 | 128 | 0 | | | |
| Future Vol, veh/h | 0 | 99 | 43 | 32 | 128 | 0 | | | |
| 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 | 0 | | | |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - | | | |
| Grade, % | - | 0 | 0 | - | 0 | - | | | |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 | | | |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | | | |
| Mvmt Flow | 0 | 114 | 49 | 37 | 147 | 0 | | | |
| Major/Minor | Major1 | | Major2 | | Minor2 | | | | |
| Conflicting Flow All | 86 | 0 | - | 0 | 182 | 68 | | | |
| Stage 1 | - | - | - | - | 68 | - | | | |
| Stage 2 | - | - | - | - | 114 | - | | | |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 | | | |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - | | | |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - | | | |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 | | | |
| Pot Cap-1 Maneuver | 1510 | - | - | - | 807 | 995 | | | |
| Stage 1 | - | - | - | - | 955 | - | | | |
| Stage 2 | - | - | - | - | 911 | - | | | |
| Platoon blocked, % | - | - | - | - | - | - | | | |
| Mov Cap-1 Maneuver | 1510 | - | - | - | 807 | 995 | | | |
| Mov Cap-2 Maneuver | - | - | - | - | 807 | - | | | |
| Stage 1 | - | - | - | - | 955 | - | | | |
| Stage 2 | - | - | - | - | 911 | - | | | |
| Approach | EB | | WB | | SB | | | | |
| HCM Control Delay, s | 0 | | 0 | | 10.5 | | | | |
| HCM LOS | | | | | B | | | | |
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 | | | |
| Capacity (veh/h) | 1510 | - | - | - | 807 | - | | | |
| HCM Lane V/C Ratio | - | - | - | - | 0.182 | - | | | |
| HCM Control Delay (s) | 0 | - | - | - | 10.5 | 0 | | | |
| HCM Lane LOS | A | - | - | - | B | A | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.7 | - | | | |

Site Access Drive @ Gladiolus Dr PM Peak

HCM 6th TWSC
2020 Horizon Year Site Access

Intersection

Int Delay, s/veh 1.8

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|---|---|------|---|---|
| Lane Configurations | |  |  | |  |  |
| Traffic Vol, veh/h | 0 | 78 | 118 | 126 | 68 | 0 |
| Future Vol, veh/h | 0 | 78 | 118 | 126 | 68 | 0 |
| 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 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 83 | 126 | 134 | 72 | 0 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 260 | 0 | 276 |
| Stage 1 | - | - | 193 |
| Stage 2 | - | - | 83 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1304 | - | 714 |
| Stage 1 | - | - | 840 |
| Stage 2 | - | - | 940 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1304 | - | 714 |
| Mov Cap-2 Maneuver | - | - | 714 |
| Stage 1 | - | - | 840 |
| Stage 2 | - | - | 940 |

| Approach | EB | WB | SB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 10.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1304 | - | - | - | 714 | - |
| HCM Lane V/C Ratio | - | - | - | - | 0.101 | - |
| HCM Control Delay (s) | 0 | - | - | - | 10.6 | 0 |
| HCM Lane LOS | A | - | - | - | B | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.3 | - |

EXISTING CONDITIONS

Gladiolus Drive is a two-lane collector roadway that serves mainly residential development including both single-family and multi-family. This road begins to the east of at the intersection with Harrisburg Road and extends back to the west where it terminates at this subject property.

Harrisburg Road is a north – south highway (Highway 1B) that begins well south of the City Limits of Jonesboro and terminates to the north at Highway 18, or Highland Drive just prior to downtown Jonesboro. Harrisburg Road is currently a two-lane roadway south of East Parker Road in the study area.

- **Existing Traffic Counts**

Existing traffic counts were taken at the intersection of Gladiolus Drive and Harrisburg Road from a previous Traffic Study performed for the City of Jonesboro in June of 2017. These counts from that study were taken during the school year on a weekday. This 14-hour count reflects a period when traffic volumes are expected to be at their peak.

The results of this 14-hour count are shown in the appendix. The AM and PM Peak Hour volumes are shown in Figure 2. Figure 3 shows the existing lane configuration at the Gladiolus Drive and Harrisburg Road Intersection.

- Accidents

Accident reports were provided by the City of Jonesboro at this existing intersection of Harrisburg Road and Gladiolus Drive. There reports indicated that a total of 34 accidents have occurred at or near this intersection since January of 2015. This is an average of a little more than 1 per month. Most of these accidents were “rear-end” collisions from vehicles following too close to the vehicle in front. Most of the remaining crashes were “side-impact” crashes from a vehicle either turning out from Gladiolus Drive onto Harrisburg Road or turning onto Gladiolus Drive from Harrisburg Road.

Only three of the 34 accidents involved any injury. Of these three one included a pedestrian that resulted in a fatality.