# SOUTHWOOD PHASE 2

## Chapter 527 Traffic Impact Analysis

## ALBEMARLE COUNTY, VIRGINIA

October 2021
*Revised February 2022*




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

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# 1 EXECUTIVE SUMMARY

This report presents the revised findings of the traffic impact analysis prepared for the proposed Southwood Phase 2 development in Albemarle County, Virginia.

The original TIA was submitted in October 2021 and the Virginia Department of Transportation (VDOT) and the Albemarle County Community Development Department, Transportation Planning (CDD) issued comments in December 2021.

A copy of the response to those comments is included in Appendix A. The analysis/TIA was revised per the VDOT/CDOT comments.

Project Overview

The proposed development is located south of I-64, southeast of Old Lynchburg Road (Route 631) and along Hickory Street as shown on Figure 1-1 (all figures are located at the end of their respective chapter).

The site is currently zoned R-2 (two-family residential) and is occupied by an income restricted mobile home park with 341 mobile home units.

The Applicant is proposing to develop the site in two Phases to include the following:

- 1,336 Residential Dwelling Units
  - 442 Affordable Housing Units
  - 894 Market Rate Units
- 60,000 S.F. of Commercial Space
  - 30,000 S.F. Office Space
  - 30,000 S.F. Retail Space

The site was the subject of a 2019 rezoning and traffic impact analysis which assumed two Phases of development with slightly different density. At that time, the traffic study assumed the following:

- Under Phase 1, the existing 341 mobile home units remained, and 300 dwelling units (270 apartments/townhomes and 30 single family units) and 50,000 S.F. of commercial space (25,000 S.F. Office Space and 25,000 S.F. Retail Space) added to the development.
- Phase 2 was assumed to consist of replacing the 341 mobile home units with 500 new dwelling units (for a net increase of 159 dwelling units).

In order to update the traffic study with the proposed changes, all density changes were assumed to occur with the Phase 2 development. This allows the previous traffic study to stand on its own and not require updates.

Therefore, for the purposes of this traffic study, it was assumed that Phase 1 will remain the same and Phase 2 will consist of the following:

- Replace the existing 341 mobile home units with 1,036 new dwelling units
  - 60 Single Family Dwelling Units
  - 419 Apartment Dwelling Units
  - 115 Townhome Dwelling Units
  - 442 Affordable Housing Units

- Add 10,000 S.F. of Commercial Space
  - 5,000 S.F. Office Space
  - 5,000 S.F. Retail Space

The buildout of the development is likely to occur sometime between 2030 and 2040. For purposes of this analysis, the development was assumed to be complete by 2030 to determine the impact of the development on the existing roadway network with only funded improvements.

A site concept plan is shown on Figure 1-2.

Primary access to the site will be provided via existing Hickory Street which to the full access connection to Old Lynchburg Road. Secondary access will be provided via Hickory Street to Stagecoach Road to Old Lynchburg Road/5th Street Extended. No new connections to Old Lynchburg Road (Route 631) are proposed with the development.

When complete, Phase 2 of the proposed development will generate 291 net trips (112 in and 179 out) during the AM peak hour, 407 net trips (225 in and 182 out) during the PM peak hour, and 4,433 net average weekday trips.

The purpose of this analysis is to determine the impact of the proposed development on the surrounding roadway network. The scope of this study was developed in conjunction with the Virginia Department of Transportation (VDOT) staff, and Albemarle County staff at a scoping meeting held virtually on July 12, 2021. A copy of the scoping agreement and subsequent correspondence is included in Appendix A.

As agreed upon in the scoping agreement, the study limits include the following existing intersections (see Figure 1-1):

1. Old Lynchburg Road and Hickory Street (unsignalized);
2. Old Lynchburg Road and Sunset Avenue Extended (unsignalized);
3. Old Lynchburg Road and 5th Street Extended/County Complex (unsignalized);
4. 5th Street Extended and Stagecoach Road/Afton Pond Court (unsignalized);
5. 5th Street Extended and I-64 EB on-off ramp; and
6. 5th Street Extended and I-64 WB on-off ramp.

In accordance with the scoping agreement, analyses were completed for the weekday AM and PM peak hours for the following scenarios:

1. 2021 Existing Traffic Conditions
2. 2030 Background Traffic Conditions (without the development of the site)
3. 2030 Future Traffic Conditions (with development of Phase 2 of the site)
4. 2036 Background Traffic Conditions (without the development of the site)
5. 2036 Future Traffic Conditions (with development of Phase 2 of the site)

The following steps were taken to determine the potential traffic impacts associated with this project:

1. Data Collection – Traffic counts were conducted at the study intersections on September 2, 2021 when public school was in session and were compared with past traffic counts to determine any changes in traffic due to the ongoing COVID-19 pandemic.

2. Traffic Growth – In order to be conservative and to account for development outside the study area, a 1% annual growth rate was applied to the through movements on the mainline and I-64 ramps only. The growth rate was compounded annually for each future scenario.

3. Other Development Trip Generation – The traffic impacts of four (4) other developments in the area were included in the analysis.

4. Trip Generation – Traffic generated by the proposed development was estimated using the 10th Edition of the Institute of Transportation Engineers' *Trip Generation Manual.*

5. Traffic Distributions – The distribution of trips generated by the proposed development was based on the existing traffic volumes, the nature of use, and the surrounding roadway network.

6. Traffic Projections – Future traffic volumes were determined using the existing traffic counts, the 1% growth rate discussed above, the trips from the other developments, and the trips generated by the site.

7. Traffic Capacity Analysis – Level of service calculations for existing, background, and future conditions were performed using SYNCHRO Version 10 for signalized and unsignalized intersections and SIDRA Version 10 for the proposed roundabout.

8. Queuing Analysis – The simulated maximum and SIDRA/HCS 95th percentile queue lengths were reviewed at the study intersections to determine turn lane storage needs.

This traffic impact analysis (TIA) has been prepared in accordance with (1) the procedures outlined in the Virginia Department of Transportation's (VDOT) Traffic Impact Analysis Regulations (henceforth referred to as Chapter 527), (2) the VDOT Traffic Operations and Safety Analysis Manual (TOSAM), and (3) the Scope of Study agreed upon between Albemarle County, VDOT, and Timmons Group (See Appendix A for the scoping agreement).

Based on the analysis the following conclusions are offered:

As shown in 2030 and 2036 background conditions, many of the study intersections along the Old Lynchburg Road/5th Street Corridor experience capacity and queueing constraints. The additional traffic generated by the Southwood Phase 2 development will add to the delay but will not cause any new intersections to fail.

Albemarle County staff indicated that the intersection of Old Lynchburg Road and 5th Street Ext./County Complex would be reconstructed as a roundabout by the year 2030. The results of the analysis show that the roundabout improves congestion and delay at this intersection during future conditions.

The VDOT STARS study recommended the following additional improvements:

- 5th Street Extended & Stagecoach Road/Afton Pond Court: converted to a Restricted Crossing U-Turn (RCUT) intersection
- Old Lynchburg Road & 5th Street Extended: converted to a roundabout

Further, the STARS study recommended further study of the 5th Street / I-64 interchange to determine the best solution to mitigate traffic congestion.

Specifically,

- Under 2021 existing conditions:
    - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, all turning movements operate at a LOS A during both AM and PM peak hours. Adequate turn bay storage exists to handle all 95th percentile and maximum queue lengths.
    - At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Ext./Private Entrance, the eastbound approach operates at a LOS B/C during the AM/PM peaks, respectively. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to handle all 95$^{th}$ percentile and maximum queue lengths.
    - At the unsignalized intersection of Old Lynchburg Road/5$^{th}$ Street/County Complex, the eastbound approach and left movement operate at a LOS D/E during the AM/PM peaks, respectively. The westbound left operates at a LOS C during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to handle all 95$^{th}$ percentile and maximum queue lengths.
    - At the unsignalized intersection of 5$^{th}$ Street Ext. and Stagecoach Road/Afton Pond Court:
        - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB left maximum queue backs up past the storage for the EB right, effectively blocking both lanes.
        - The westbound left movement is over capacity during both peak hours (LOS F) and during the AM peak, the WB left maximum queue backs up past the storage for the WB right, effectively blocking both lanes.
        - The north- and southbound through and turning movements operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to handle 95$^{th}$ percentile and maximum queue lengths.
    - At the signalized intersection of 5$^{th}$ Street Ext. and I-64 EB on-off ramp:
        - The intersection currently operates at an overall LOS D/C during the AM/PM peaks, respectively. The eastbound approach is over capacity during the AM peak (LOS F) and PM peak (LOS E).
        - The northbound approach operates at a LOS E/D during the AM/PM peaks, respectively. Adequate turn bay storage exists to handle all 95$^{th}$ percentile and maximum queue lengths.
    - At the signalized intersection of 5$^{th}$ Street Ext. and I-64 WB on-off ramp:
        - The intersection currently operates at an overall LOS C/D during the AM/PM peaks, respectively. The westbound right operates at a LOS F/E during the AM/PM peaks, respectively.
        - The northbound left movement operates at a LOS B/C during the AM/PM peaks, respectively. The NB left 95$^{th}$ percentile queue exceeds the available storage, spilling back into through lanes.
        - The southbound approach operates at a LOS D/F during the AM/PM peaks, respectively. All other turning bays have adequate storage to handle 95$^{th}$ percentile and maximum queue lengths.

- Under 2030 background conditions with the 1% growth rate and traffic from four (4) background developments:

    - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

    - At the unsignalized intersection of Old Lynchburg Road and Sunset Ave. Ext./Private Entrance, the eastbound approach will operate at a LOS C/D during the AM/PM peaks, respectively. All other movements and approaches operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

    - At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection operates at a LOS A/B during the AM/PM peaks, respectively. During the PM peak, the eastbound approach operates at a LOS C. All other movements operate at a LOS B or better during both peak hours. Adequate storage exists to accommodate 95th percentile queue lengths.

    - At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
        - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB through-left maximum queue backs up past the storage for the EB right, effectively blocking both lanes.
        - The westbound left is over capacity during both peak hours (LOS F). The WB right will operate at a LOS E/B during the AM/PM peaks, respectively. During both peak hours, the WB left maximum queue backs up past the storage for the WB right lane effectively blocking both lanes.
        - All other turning movements and approaches will operate at a LOS C or better during both peak hours. All other turning movements have adequate storage to accommodate 95th percentile and maximum queue lengths.

    - At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
        - The overall intersection is over capacity during both AM (LOS F) and PM (LOS E) peaks.
        - The eastbound approach is over capacity during both AM (LOS F) and PM (LOS E) peaks. During the AM peak, the EB approach maximum queue will back up onto mainline I-64 eastbound.
        - The northbound approach is over capacity during both peak hours (LOS F). The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

    - At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
        - The overall intersection will operate at a LOS D/F during the AM/PM peaks, respectively.
        - The westbound approach is over capacity during both AM (LOS F) and PM (LOS E) peaks. The northbound left and through movement will operate at a LOS C or better during both peak hours.
        - The southbound approach is over capacity during both the AM and PM peaks (LOS F). During the PM peak, the SB thru maximum queue backs up through the

nearby intersection at the Holiday Inn. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- Under 2030 total future conditions with the development of Phase 2 of the site the intersections will operate at comparable capacity and queuing levels as under background conditions. Specifically:

    - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, all turning movements and approaches will continue to operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

    - At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Extended, the eastbound approach will operate at a LOS E/F during the AM/PM peaks, respectively. All other turning movements and approaches will operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

    - At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. All movements will operate at a LOS B or better during both peak hours except the eastbound approach will operate at a LOS C during the PM peak. Adequate storage exists to accommodate 95th percentile and maximum queue lengths.

    - At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
        - The eastbound approach is over capacity during both peak hours (LOS F). The EB left maximum queue backs up past the storage for the eastbound right effectively blocking both lanes.
        - The westbound left is over capacity during both peak hours (LOS F). The westbound right will operate at a LOS F/C during the AM/PM peaks, respectively. During both peak hours, the WB left maximum queue backs up past the storage for the westbound right effectively blocking both lanes.
        - The north- and southbound turning movements and approaches will operate at a LOS C or better during both peak hours. During the AM peak, the SB left maximum queue exceeds the available storage, spilling back into through lanes. All other turning movements have adequate turn bay storage to accommodate 95th percentile and maximum queues.

    - At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
        - The overall intersection is over capacity during both peaks (LOS F).
        - The eastbound approach is over capacity during both peak hours (LOS F). During both peak hours, the EB maximum queue will back up onto mainline I-64 eastbound.
        - The northbound approach is over capacity during both AM and PM (LOS F) peaks.
        - The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection will operate at a LOS D/F during the AM/PM peaks, respectively.
  - The westbound approach is over capacity during both peaks (LOS F). The northbound left and through movement will operate at a LOS C or better during both peak hours. During both peak hours, the NB left maximum queue exceeds the available storage.
  - The southbound approach is over capacity during both the AM and PM peaks (LOS F). During both peak hours, the SB thru maximum queue backs up through the adjacent intersection at the Holiday Inn.
  - All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.
  -

- Under 2036 background conditions with the 1% growth rate and traffic from four (4) background developments:

  - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the unsignalized intersection of Old Lynchburg Road and Sunset Ave. Ext./Private Entrance, the eastbound approach will operate at a C/E during the AM/PM peaks, respectively. All other movements and approaches operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. The eastbound approach will operate at a LOS D during the PM peak. All other turning movements will operate at a LOS B or better during both AM/PM peaks. All turning movements have adequate storage to accommodate 95th percentile queue lengths.

  - At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
    - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB left maximum queue backs up past the storage for the EB right effectively blocking both lanes.
    - The westbound approach is over capacity during both peak hours (LOS F). The WB right will operate at a LOS E during the AM peak and LOS B during the PM peak. During both peak hours, the WB left maximum queue backs up past the storage for the WB right and backs up through the intersection with Oak Hill Drive.
    - During the AM peak, the southbound left maximum queue exceeds the available storage spilling back into the through lanes. All other turning movements and approaches will operate at a LOS C or better during both peak hours. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The overall intersection is over capacity during both AM and PM (LOS F) peaks.
  - The eastbound approach is over capacity during both peak hours (LOS F). During both peak hours, the maximum queue is expected to back up onto mainline I-64 eastbound. During both peak hours, the eastbound left maximum queue backs up past the available storage for the eastbound right.
  - The northbound approach is over capacity during both AM and PM (LOS F) peaks. During the PM peak, the northbound approach maximum queue backs up reaching the adjacent intersection of Stagecoach Road/Afton Pond Court.
  - The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection will operate at a LOS E/F during the AM/PM peaks, respectively.
  - The westbound approach is over capacity during both peak hours (LOS F). The northbound left and through movement will operate at a LOS C or better during both peak hours.
  - The southbound approach is over capacity during both the peak hours (LOS F). During the PM peak, the southbound thru maximum queue backs up through the adjacent intersection at the Holiday Inn.
  - All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- Under 2036 total future conditions with development of phase 2 of the site the intersections will operate at comparable capacity and queuing levels as under background conditions. Specifically:

  - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. The southbound left will operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Extended, the eastbound approach will operate at a LOS E/F during the AM/PM peaks, respectively. All other turning movements and approaches will operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. All movements will operate at a LOS B or better during both peak hours except the eastbound approach will operate at a LOS C during the PM peak. Adequate storage exists to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
  - The eastbound approach is over capacity during both peak hours (LOS F). The EB left maximum queue backs up past the storage for the EB right effectively blocking the lane.
  - The westbound left is over capacity during both peak hours (LOS F). The WB right will operate at a LOS F during the AM peak and LOS C during the PM peak. During both peak hours, the WB left maximum queue backs up past the storage for the WB right and backs up through the intersection with Oak Hill Drive.
  - The north- and southbound turning movements and approaches will operate at a LOS C or better during both peak hours. During the AM peak, the SB left maximum queue exceeds the available storage. All other turning movements have adequate turn bay storage to accommodate 95th percentile and maximum queues.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The overall intersection is over capacity during both peak hours (LOS F).
  - The eastbound approach is over capacity during both peaks (LOS F). During both Peak hours, the EB approach maximum queue will back up onto mainline I-64 eastbound.
  - The northbound approach is over capacity during both peak hours (LOS F). The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection is over capacity during both AM (LOS E) and PM (LOS F) peaks.
  - The westbound approach is over capacity during both peak hours (LOS F). The northbound left will operate at a LOS C during both peak hours. During both peak hours, the NB left maximum queue exceeds the available storage, spilling back into through lanes.
  - The southbound approach is over capacity during both peak hours (LOS F) and the maximum queue backs up through the adjacent intersection at the Holiday Inn. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

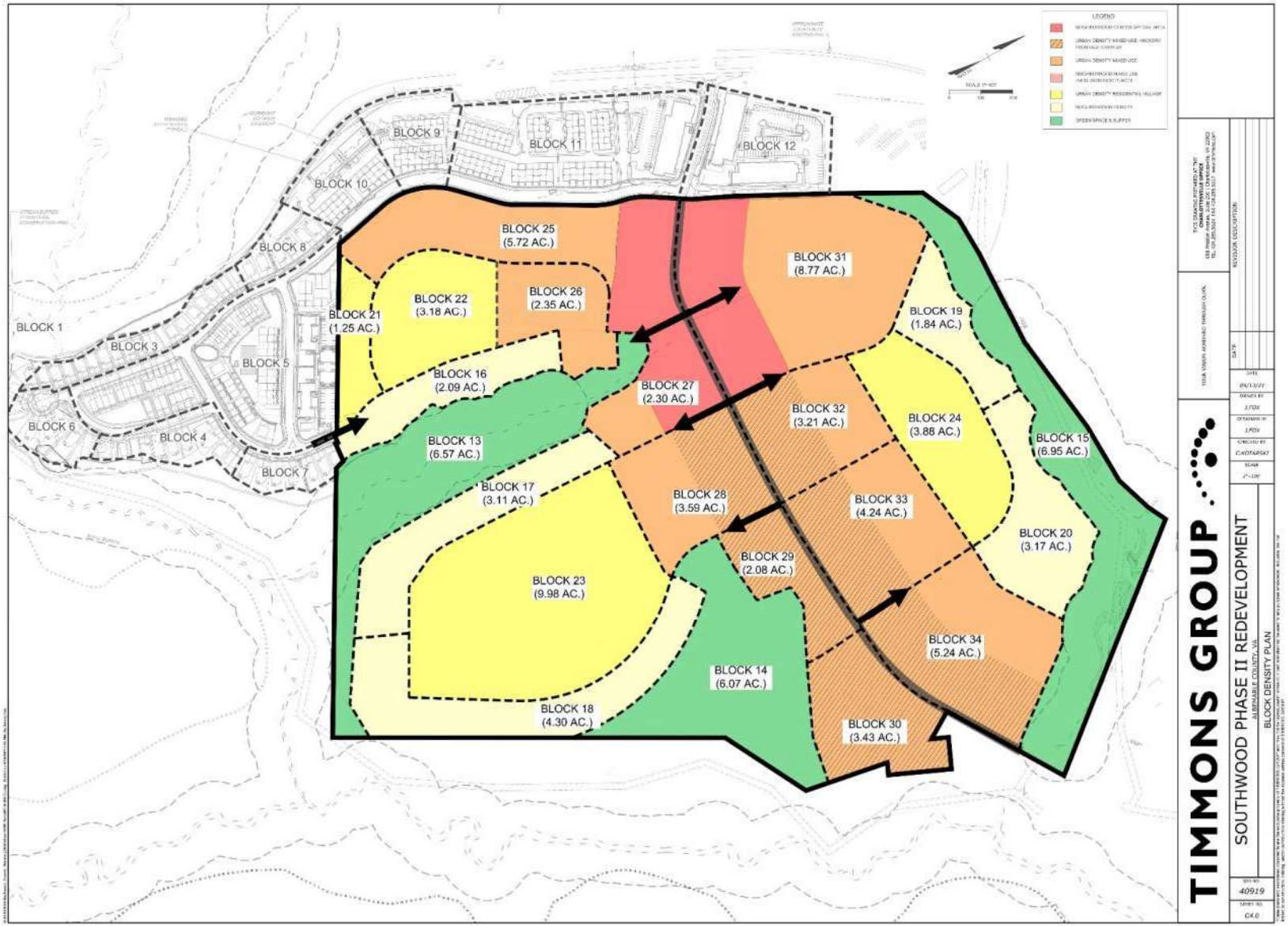



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# Southwood Phase 2 TIA
# Surrounding Roadway Network and Site Location
# Albemarle County, Virginia

Figure
1-1




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Southwood Phase 2 TIA
Site Concept Plan
Albemarle County, Virginia

Figure
1-2

# 2 BACKGROUND INFORMATION

## 2.1 DESCRIPTION OF ON-SITE DEVELOPMENT

The site is currently zoned R-2 (two-family residential) and is occupied by an income restricted mobile home park with 341 mobile home units.

The Applicant is proposing to develop the site in two Phases to include the following:

- 1,336 Residential Dwelling Units
  - 442 Affordable Housing Units
  - 894 Market Rate Units
- 60,000 S.F. of Commercial Space
  - 30,000 S.F. Office Space
  - 30,000 S.F. Retail Space

The site was the subject of a 2019 rezoning and traffic impact analysis which assumed two Phases of development with slightly different density. At that time, the traffic study assumed the following:

- Under Phase 1, the existing 341 mobile home units remained, and 300 dwelling units (270 apartments/townhomes and 30 single family units) and 50,000 S.F. of commercial space (25,000 S.F. Office Space and 25,000 S.F. Retail Space) added to the development.
- Phase 2 was assumed to consist of replacing the 341 mobile home units with 500 new dwelling units (for a net increase of 159 dwelling units).

In order to update the traffic study with the proposed changes, all density changes were assumed to occur with the Phase 2 development. This allows the previous traffic study to stand on its own and not require updates.

Therefore, for the purposes of this traffic study, it was assumed that Phase 1 will remain the same and Phase 2 will consist of the following:

- Replace the existing 341 mobile home units with 1,036 new dwelling units
  - 60 Single Family Dwelling Units
  - 419 Apartment Dwelling Units
  - 115 Townhome Dwelling Units
  - 442 Affordable Housing Units
- Add 10,000 S.F. of Commercial Space
  - 5,000 S.F. Office Space
  - 5,000 S.F. Retail Space

The buildout of the development is likely to occur sometime between 2030 and 2040. For purposes of this analysis, the development was assumed to be complete by 2030 to determine the impact of the development on the existing roadway network with only funded improvements.

Primary access to the site will be provided via existing Hickory Street which to the full access connection to Old Lynchburg Road. Secondary access will be provided via Hickory Street to Stagecoach Road to Old Lynchburg Road/5th Street Extended. No new connections to Old Lynchburg Road (Route 631) are proposed with the development.

For the purposes of this analysis, the proposed development is expected to be open and occupied by the year 2030.

## 2.2 STUDY LIMITS

As agreed upon in the scoping agreement, the study limits include the following existing intersections:

1. Old Lynchburg Road and Hickory Street (unsignalized);
2. Old Lynchburg Road and Sunset Avenue Extended (unsignalized);
3. Old Lynchburg Road and 5th Street Extended/County Complex (unsignalized);
4. 5th Street Extended and Stagecoach Road/Afton Pond Court (unsignalized);
5. 5th Street Extended and I-64 EB on-off ramp; and
6. 5th Street Extended and I-64 WB on-off ramp.

## 2.3 EXISTING ROADWAYS NETWORK

Route 631 carries two separate names through the study area. The roadway is called 5th Street Extended from the Charlottesville City limits to the intersection with the County Complex where it becomes Old Lynchburg Road.

For purposes of this analysis, it was assumed that Route 631 (5th Street Extended and Old Lynchburg Road) runs north-south through the study area.

All roadway descriptions reference 2019 VDOT counts as those are the most recently available daily counts that reflect typical traffic conditions (i.e., not influenced by the COVID19 pandemic).

5th Street Extended (Route 631) is a four-lane divided roadway with auxiliary turning lanes. It is listed as a Minor Arterial south of the I-64 interchange and Principal Arterial north of the I-64 interchange. The posted speed limit is 45 mph north of Stagecoach Road and 35 mph between Stagecoach Road and Old Lynchburg Road.

According to the 2019 VDOT Traffic Counts, 5th Street Extended carries 19,000 vehicles per day (vpd) between Stagecoach Road and I-64, and 29,000 vpd from I-64 to Charlottesville City Limits. The roadway has a shared use path along the west side between Stagecoach Road and Old Lynchburg Road.

Old Lynchburg Road (Route 631) is a four-lane divided Minor Arterial with auxiliary turning lanes north of Hickory Street, and a two-lane undivided Major Collector south of Hickory Street. The posted speed limit is 40 mph between 5th Street and Hickory Street and 45 mph south of Hickory Street.

According to the 2019 VDOT Traffic Counts, Old Lynchburg Road carries 9,700 vpd. The roadway has a shared use path along the west side of the road north of Ambrose Commons Drive.

Old Lynchburg Road (Route 780) is a two-lane undivided Major Collector with a posted speed limit of 35 mph. According to the 2019 VDOT Traffic Counts, Old Lynchburg Road carries 3,800 vpd. The roadway has a shared use path along the west side.

Sunset Avenue Extended (Route 781) is a two-lane undivided Major Collector with a posted speed limit of 30 mph. According to the 2019 VDOT Traffic Counts, Sunset Avenue carries 3,000 vpd. The roadway has no sidewalks.

Stagecoach Road (Route 877) is a two-lane undivided local road with a posted speed limit of 25 mph. According to the 2019 VDOT Traffic Counts, Stagecoach Road carries 2,700 vpd. The roadway has no sidewalks.

Afton Pond Court is a two-lane undivided local road with a speed limit of 25 mph. The roadway has a sidewalk along the west side.

Hickory Street is a two-lane undivided local road with a speed limit of 25 mph. The roadway has sidewalks along both sides.

The 2021 existing lane use and traffic control at the study intersections is shown on Figure 2-1.

## 2.4 FUTURE IMPROVEMENTS

A STARS study was completed in January 2021 by Kittelson & Associates for the Route 631 corridor (5th Street Extended and Old Lynchburg Road) from Harris Road in the north to Ambrose Commons Drive to the south. The study recommends the following improvements to study intersections mentioned above:

- 5th Street Extended & Stagecoach Road/Afton Pond Court: converted to a Restricted Crossing U-Turn (RCUT) intersection
- Old Lynchburg Road & 5th Street Extended: converted to a roundabout

The STARS study also found that a project development and environmental study should be completed for the 5th Street / I-64 interchange. A preliminary VJUST analysis of alternatives showed that a diverging diamond interchange could best mitigate traffic congestion. A timeline for further study and/or modification of the interchange has not been identified.

For the purposes of this analysis, it was assumed that the roundabout improvements at Old Lynchburg Road & 5th Street Extended would be operational by the year 2030. The proposed geometry of the roundabout was extracted from the Route 631 STARS study mentioned above and will be used in future (2030 and 2036) analysis.

At this time funding or project schedule for the intersection improvements at 5th Street Extended & Stagecoach Road/Afton Pond Court has not been identified and therefore the improvement was not assumed in this analysis.

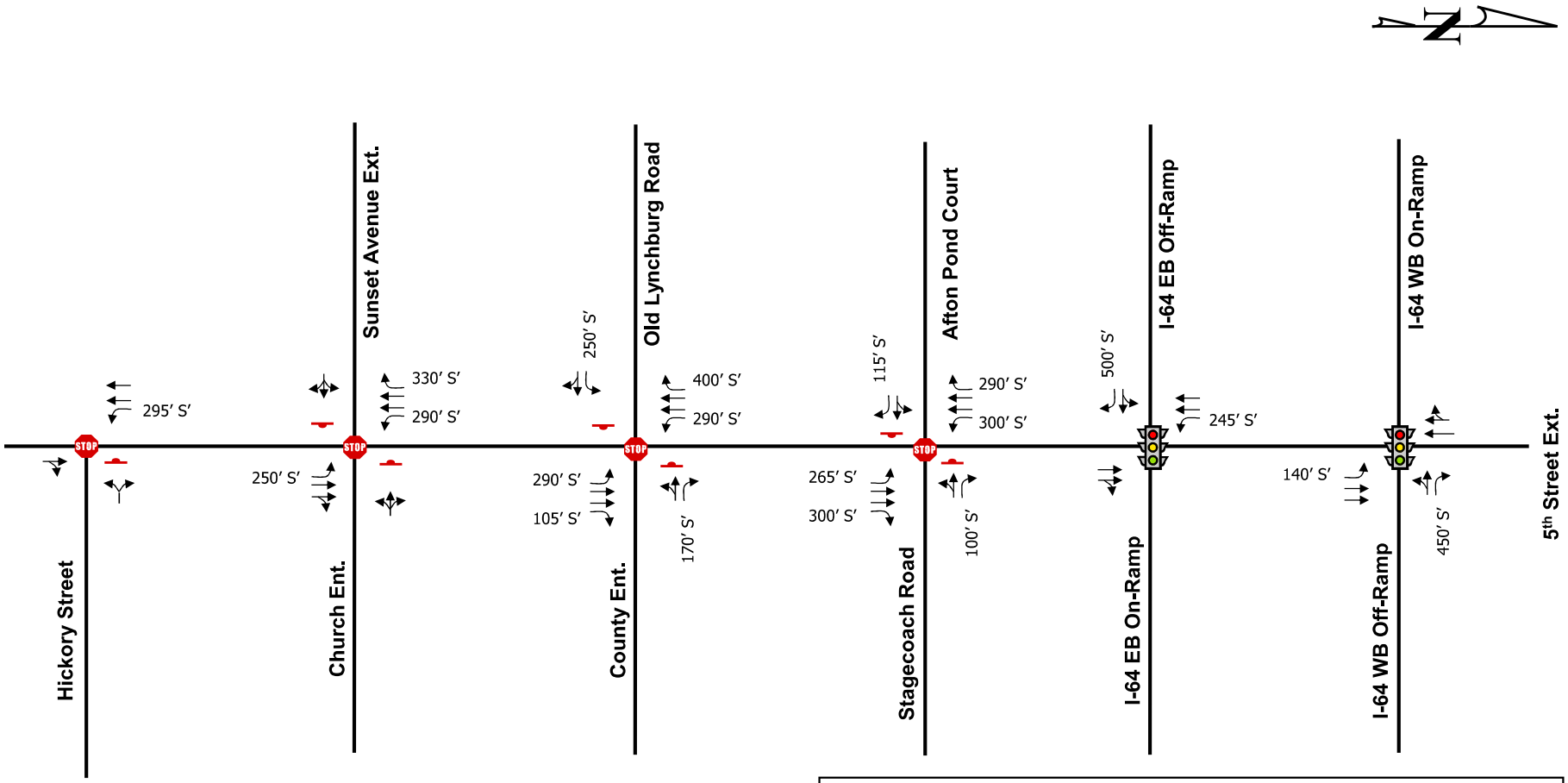
The future lane use and traffic control at the study intersections is shown on Figure 2-2.

## 2.5 OTHER MODES OF TRANSPORTATION

Currently, there are sidewalks/shared use paths on limited segments of the study area road network as outlined in Section 2.3. The sidewalks/paths do not connect to points north of I-64, and there are also no on-street bike lanes within the study area.

The Charlottesville Area Transit (CAT) Route 3 runs along 5th Street and Old Lynchburg Road from Downtown Charlottesville and terminates in the existing Southwood development with bus stops on Hickory Street.

While it is expected that some site trips will be made via transit, in order to present a conservative analysis, no reduction was not taken for trips completed via transit, walking, and biking.

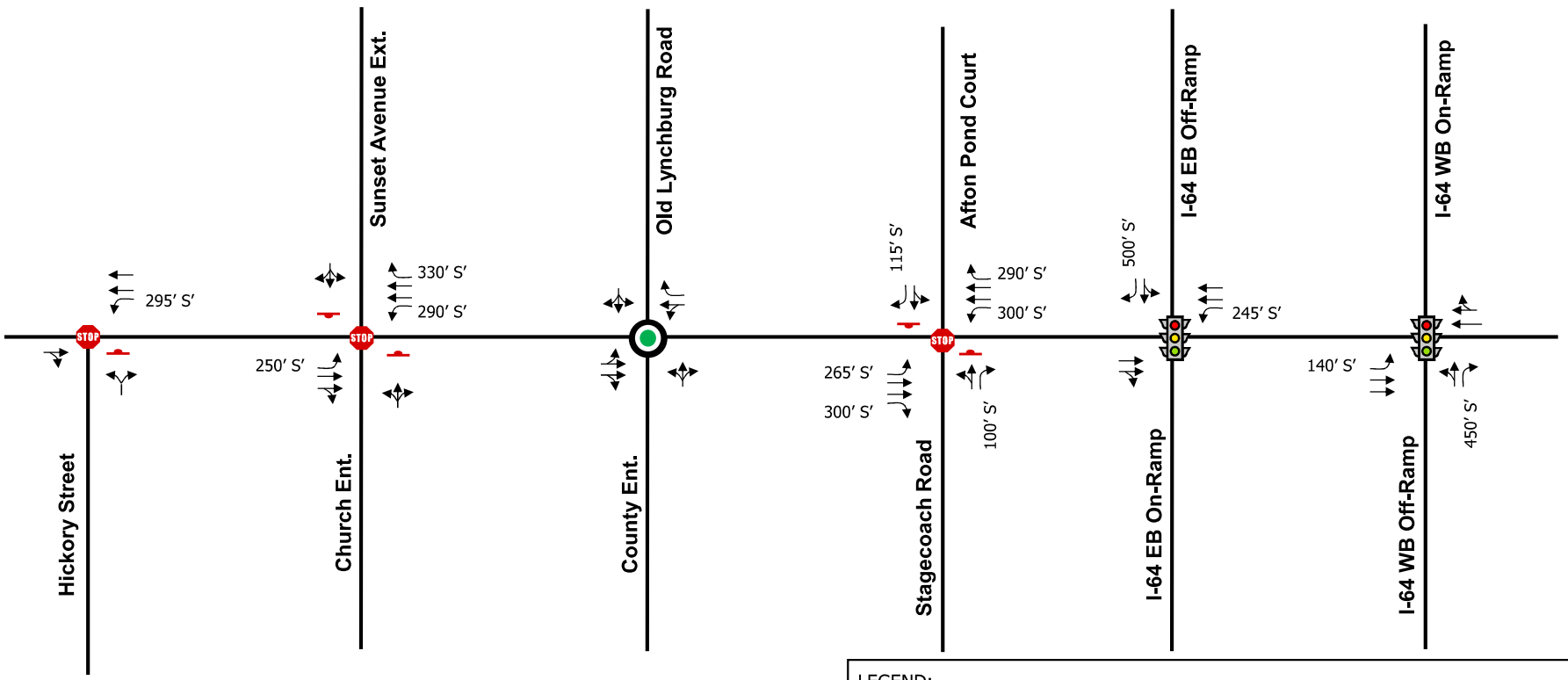



NOT TO SCALE

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# Southwood Phase 2 TIA
# Existing Lane Use Geometry
# Albemarle County, Virginia

Figure
2-1




**SITE**

NOT TO SCALE

LEGEND:

- Existing Road
- S' Effective Storage Length (feet)*
- * Per TOSAM guidelines, effective storage length is the full width storage length plus ½ the taper length.
- Stop Controlled Intersection
- Signalized Intersection
- Roundabout
- Stop Sign Location
- Lane Configuration

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# Southwood Phase 2 TIA
# Future Lane Use Geometry
# Albemarle County, Virginia

Figure
2-2

# 3 2021 EXISTING CONDITIONS

## 3.1 EXISTING TRAFFIC VOLUMES

Existing peak hour turning movement counts were conducted at each of the study intersections during the AM (7:00-9:00) and PM (4:00-6:00) peak hour timeframes. The counts were conducted on September 2, 2021 on a typical weekday when public schools were in session. The counts included heavy vehicles by movement, pedestrians, and bikes.

The raw traffic counts are included in Appendix B and the existing peak hour counts shown on Figure 3-1. The common peak hours for all study intersections were found to be 7:45–8:45 AM and 4:45–5:45 PM.

It is noted that at the time of the counts, Hickory Street was closed at the intersection with Old Lynchburg Road. The turning movement counts at that intersection were obtained from the Southwood Phase 1 TIA and the through traffic was balanced to the adjacent intersection.

Existing signal timings for all intersections were provided by VDOT and are included in Appendix C.

## 3.2 CAPACITY ANALYSES

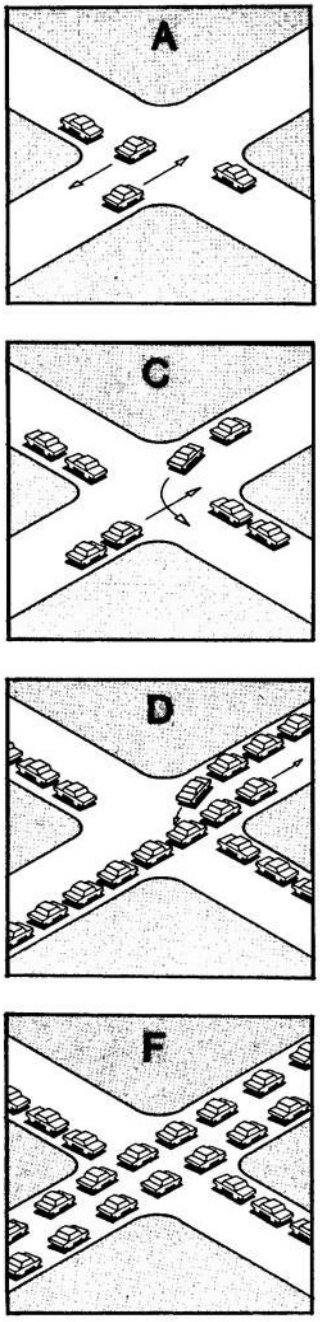
Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Highway Capacity Manual methodologies govern how the capacity analyses are conducted and how the results are interpreted. Levels of service (LOS) are determined for each part of the roadway network, with LOS A through D representing acceptable results and LOS E and F representing unacceptable results. Table 3-1 shows in detail how each of these levels of service are interpreted.

**Table 3-1: Level of Service Definitions**

## LEVEL OF SERVICE DEFINITIONS

| L.O.S. | ROADWAY SEGMENTS OR CONTROLLED ACCESS HIGHWAYS | INTERSECTIONS |
|---|---|---|
| A | Free flow, low traffic density. | No vehicle waits longer than one signal indication. |
| B | Delay is not unreasonable, stable traffic flow. | On a rare occasion motorists wait through more than one signal indication. |
| C | Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists. | Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable. |
| D | Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups. | Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive back-ups. |
| E | Actual capacity of the roadway involves delay to all motorists due to congestion. | Very long queues may create lengthy delays, especially for left turning vehicles. |
| F | Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases. | Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour. |

SOURCE: A Policy on Design of Design of Urban Highways and Arterial Streets - AASHTO, 1973 based upon material published in Highway Capacity Manual, National Academy of Sciences, 1965.




For both unsignalized and signalized intersections, level of service is defined in terms of delay, a measure of driver discomfort, frustration, fuel consumption and lost travel time. Table 3-2 summarizes the delay associated with each LOS category:

**Table 3-2: Unsignalized and Signalized Intersection Level of Service Criteria**

| Signalized Intersections | | Unsignalized Intersections | |
|---|---|---|---|
| Level of Service | Control Delay per Vehicle (sec/veh) | Level of Service | Average Control Delay (sec/veh) |
| A | ≤ 10 | A | 0 to 10 |
| B | > 10 to ≤ 20 | B | > 10 to ≤ 15 |
| C | > 20 to ≤ 35 | C | > 15 to ≤ 25 |
| D | > 35 to ≤ 55 | D | > 25 to ≤ 35 |
| E | > 55 to ≤ 80 | E | > 35 to ≤ 50 |
| F | > 80 | F | > 50 |

*Source: Exhibit 16-2 and Exhibit 17-2 from TRB's "Highway Capacity Manual 2000"*

Capacity analyses were performed to assess existing (2021), background (2030), and future (2036) operational conditions. The signalized and unsignalized intersections were analyzed using SYNCHRO Version 10 and the roundabout was analyzed using SIDRA Version 9 based on HCM 2000 methodologies with the following assumptions:

- Level terrain;
- 12-foot lane widths;
- No parking activity or bus stops;
- Existing peak hour factor as determined by the traffic counts (by intersection) for existing scenario;
- The higher of the existing peak hour factor as determined by traffic counts (by intersection) or a peak hour factor of 0.92.
- Heavy vehicle percentage as determined by the traffic counts (by movement); and
- Traffic signals timing data provided by VDOT.

It is noted the roundabout is included in the SYNCHRO model for graphical purposes only. No analysis (LOS or queuing) results for the roundabout were obtained from the SYNCHRO model.

## 3.3 EXISTING CONDITIONS CAPACITY ANALYSES

Table 3-3 summarizes the 2021 existing intersection LOS, delay, 95th percentile queue lengths (Synchro/SIDRA), and maximum queue lengths (SimTraffic) based on the 2021 existing intersection geometry and peak hour traffic volumes shown on Figure 2-1 and Figure 3-1, respectively. The corresponding SYNCHRO and SimTraffic reports are included in Appendix D.

As noted above, Route 631 (5th Street Extension and Old Lynchburg Road) is assumed to run north-south through the study area.

As shown in Table 3-3, under existing conditions:

- At the unsignalized intersection of Old Lynchburg Road and Hickory Street, all turning movements operate at a LOS A during both AM and PM peak hours. Adequate turn bay storage exists to handle all 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Ext./Private Entrance, the eastbound approach operates at a LOS B/C during the AM/PM peaks, respectively. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to handle all 95$^{th}$ percentile and maximum queue lengths.

- At the unsignalized intersection of Old Lynchburg Road/5$^{th}$ Street/County Complex, the eastbound approach and left movement operate at a LOS D/E during the AM/PM peaks, respectively. The westbound left operates at a LOS C during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to handle all 95$^{th}$ percentile and maximum queue lengths.

- At the unsignalized intersection of 5$^{th}$ Street Ext. and Stagecoach Road/Afton Pond Court:
  - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB left maximum queue backs up past the storage for the EB right, effectively blocking both lanes.
  - The westbound left movement is over capacity during both peak hours (LOS F) and during the AM peak, the WB left maximum queue backs up past the storage for the WB right, effectively blocking both lanes.
  - The north- and southbound through and turning movements operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to handle 95$^{th}$ percentile and maximum queue lengths.

- At the signalized intersection of 5$^{th}$ Street Ext. and I-64 EB on-off ramp:
  - The intersection currently operates at an overall LOS D/C during the AM/PM peaks, respectively. The eastbound approach is over capacity during the AM peak (LOS F) and PM peak (LOS E).
  - The northbound approach operates at a LOS E/D during the AM/PM peaks, respectively. Adequate turn bay storage exists to handle all 95$^{th}$ percentile and maximum queue lengths.

- At the signalized intersection of 5$^{th}$ Street Ext. and I-64 WB on-off ramp:
  - The intersection currently operates at an overall LOS C/D during the AM/PM peaks, respectively. The westbound right operates at a LOS F/E during the AM/PM peaks, respectively.
  - The northbound left movement operates at a LOS B/C during the AM/PM peaks, respectively. The NB left 95$^{th}$ percentile queue exceeds the available storage, spilling back into through lanes.
  - The southbound approach operates at a LOS D/F during the AM/PM peaks, respectively. All other turning bays have adequate storage to handle 95$^{th}$ percentile and maximum queue lengths.

## Table 3-3: Intersection Level of Service and Delay Summary
## 2021 Existing Traffic

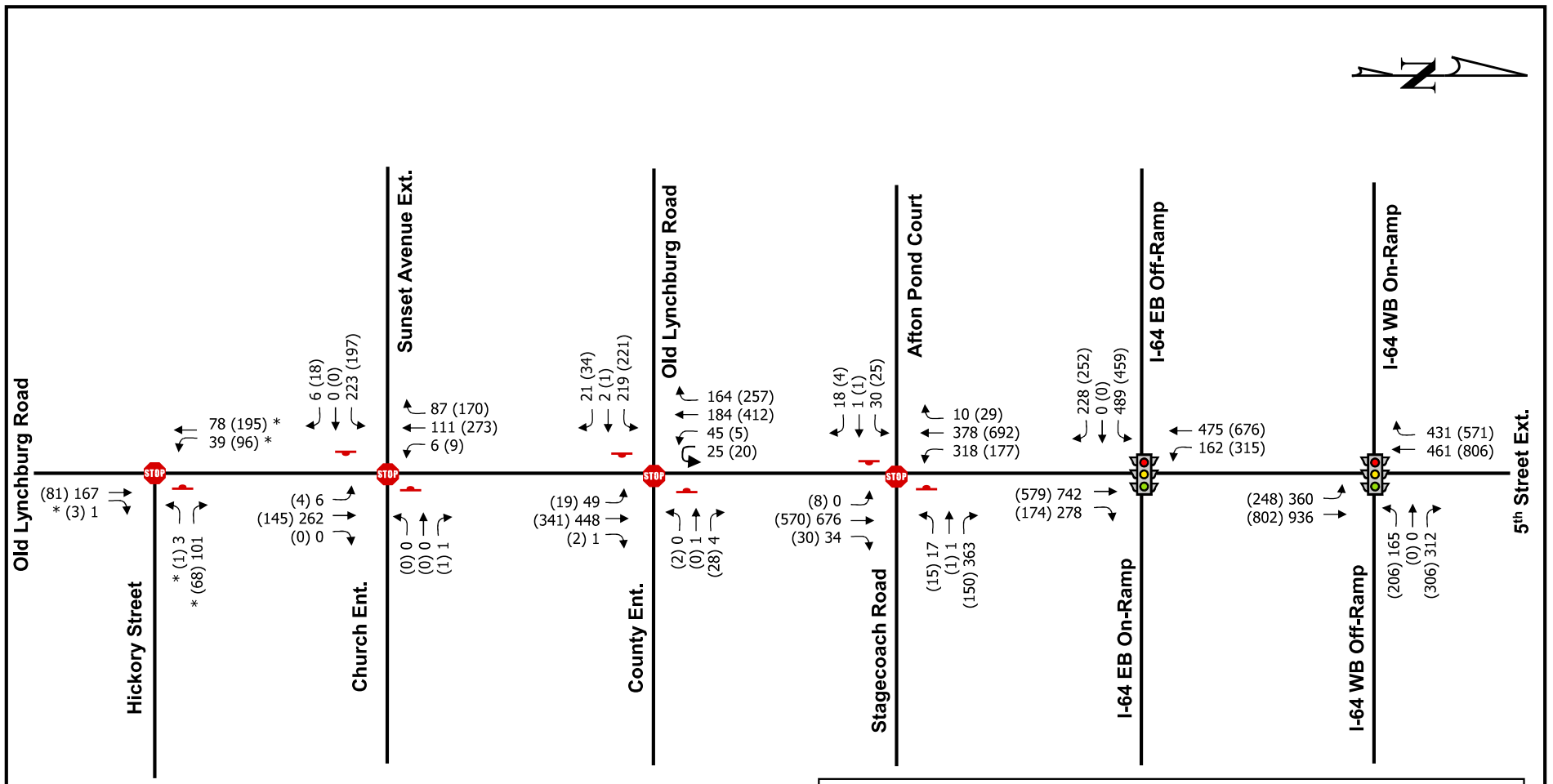
| Intersection and Type of Control | Movement and Approach | Effective Turn Lane Storage (ft) | AM PEAK HOUR | | | | PM PEAK HOUR | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Delay [1] (sec/veh) | LOS [1] | Synchro 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) | Delay [1] (sec/veh) | LOS [1] | Synchro 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) |
| 1. Old Lynchburg Road (N-S) and | *WB Approach* | | 10.0 | A | 10 | 70 | *9.2* | A | 6 | 55 |
| Hickory Street (W) | NB Thru - Right | | † | † | -- | -- | † | † | -- | -- |
| Unsignalized | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 295 | 7.8 | A | 2 | 48 | 7.6 | A | 4 | 42 |
| | SB Thru | | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | *2.6* | *A* | -- | -- | *2.5* | *A* | -- | -- |
| 2. Old Lynchburg Road (N-S) and | *EB Approach* | | *14.0* | *B* | 35 | 127 | *15.6* | *C* | 37 | 130 |
| Church Entrance (W) / | *WB Approach* | | *9.1* | *A* | 0 | 16 | *8.7* | *A* | 0 | 6 |
| Sunset Avenue Ext. (E) | NB Left | 250 | 7.6 | A | 0 | 4 | 8.3 | A | 0 | 13 |
| Unsignalized | NB Thru-Right | | † | † | -- | 4 | † | † | -- | 1 |
| | *NB Approach* | | *0.2* | *A* | -- | -- | *0.2* | *A* | -- | -- |
| | SB Left | 290 | 7.8 | A | 0 | 21 | 7.5 | A | 0 | 4 |
| | SB Thru | | † | † | -- | -- | † | † | -- | 2 |
| | SB Right | 330 | † | † | -- | 2 | † | † | -- | -- |
| | *SB Approach* | | 0.2 | A | -- | -- | 0.1 | *A* | -- | -- |
| 3. Old Lynchburg Road (N) / | EB Left | 250 | 27.5 | D | 70 | 172 | 46.0 | E | 113 | 191 |
| 5th Street Extended (S) and | EB Thru - Right | | 9.8 | A | 2 | 48 | 10.0 | A | 4 | 89 |
| County Complex (W) / | *EB Approach* | | *25.8* | *D* | -- | -- | *41.1* | *E* | -- | -- |
| Old Lynchburg Road (E) | WB Left - Thru | | 20.3 | C | 0 | 17 | 16.3 | C | 0 | 15 |
| Unsignalized | WB Right | 170 | 9.6 | A | 0 | 20 | 9.4 | A | 2 | 29 |
| | *WB Approach* | | *11.7* | *B* | -- | -- | *9.9* | *A* | -- | -- |
| | NB Left | 290 | 8.1 | A | 0 | 28 | 9.0 | A | 2 | 36 |
| | NB Thru | | † | † | -- | 7 | † | † | -- | 2 |
| | NB Right | 105 | † | † | -- | -- | † | † | -- | -- |
| | *NB Approach* | | *0.2* | *A* | -- | -- | *0.5* | *A* | -- | -- |
| | SB Left | 290 | 9.1 | A | 4 | 58 | 9.3 | A | 2 | 38 |
| | SB Thru | | † | † | -- | -- | † | † | -- | -- |
| | SB Right | 400 | † | † | -- | 6 | † | † | -- | 18 |
| | *SB Approach* | | *1.5* | *A* | -- | -- | *0.3* | *A* | -- | -- |
| 4. 5th Street Extended (N-S) and | EB Left - Thru | | 754.8 | F | 90 | 162 | 94.9 | F | 31 | 72 |
| Stagecoach Road (W) / | EB Right | 115 | 9.8 | A | 2 | 87 | 10.6 | B | 0 | 28 |
| Afton Pond Court (E) | *EB Approach* | | *481.1* | *F* | -- | -- | *83.7* | *F* | -- | -- |
| Unsignalized | WB Left - Thru | | 177.0 | F | 35 | 585 | 50.7 | F | 6 | 67 |
| | WB Right | 100 | 21.0 | C | 94 | 100 | 11.6 | B | 16 | 87 |
| | *WB Approach* | | *28.4* | *D* | -- | -- | *15.4* | *C* | -- | -- |
| | NB Left | 265 | 0.0 | A | 0 | -- | 9.2 | A | 0 | -- |
| | NB Thru | | † | † | -- | 33 | † | † | -- | 4 |
| | NB Right | 300 | † | † | -- | 31 | † | † | -- | 25 |
| | *NB Approach* | | *0.0* | *A* | -- | -- | *0.1* | *A* | -- | -- |
| | SB Left | 300 | 12.6 | B | 43 | 262 | 9.6 | A | 14 | 125 |
| | SB Thru | | † | † | -- | 79 | † | † | -- | -- |
| | SB Right | 290 | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | *5.7* | *A* | -- | -- | *1.9* | *A* | -- | -- |
| 5. 5th Street Extended (N-S) and | EB Left - Thru | | 104.9 | F | #546 | 672.0 | 68.5 | E | #470 | 504 |
| I-64 EB Off-Ramp (E) | EB Right | 500 | 30.8 | C | 56 | 357 | 31.3 | C | 66 | 315 |
| Signalized | *EB Approach* | | *81.3* | *F* | -- | -- | *55.3* | *E* | -- | -- |
| | NB Thru - Right | | 66.6 | E | #453 | 355 | 47.1 | D | #286 | 257 |
| | *NB Approach* | | *66.0* | *E* | -- | -- | *46.8* | *D* | -- | -- |
| | SB Left | 245 | 20.9 | C | 104.0 | 164 | 15.5 | B | 176 | 228 |
| | SB Thru | | 0.2 | A | 72 | 62 | 0.1 | A | 64 | 120 |
| | *SB Approach* | | *5.5* | *A* | -- | -- | *5.0* | *A* | -- | -- |
| | **Overall** | | **54.4** | **D** | -- | -- | **32.4** | **C** | -- | -- |
| 6. 5th Street Extended (N-S) at | WB Left - Thru | | 31.8 | C | 149 | 180 | 33.5 | C | 181 | 194 |
| I-64 WB Off-Ramp (W) | WB Right | 450 | 83.8 | F | #210 | 247.0 | 67.3 | E | 139 | 203 |
| Signalized | *WB Approach* | | *65.8* | *E* | -- | -- | *53.7* | *D* | -- | -- |
| | NB Left | 140 | 16.1 | B | 167 | 140 | 21.9 | C | 132 | 139 |
| | NB Thru | | 0.1 | A | 128 | 311 | 0.2 | A | 45 | 260 |
| | *NB Approach* | | *4.5* | *A* | -- | -- | *5.3* | *A* | -- | -- |
| | SB Thru - Right | | 49.9 | D | 251 | 291 | 99.8 | F | #539 | 639 |
| | *NB Approach* | | *46.6* | *D* | -- | -- | *93.2* | *F* | -- | -- |
| | **Overall** | | **29.6** | **C** | -- | -- | **54.9** | **D** | -- | -- |

[1] *Overall intersection LOS and delay cannot be reported for unsignalized intersections.*

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

SimTraffic queues are average maximum queues after 10 runs of 60 minutes each.




**SITE**

Peak Hours:
7:45-8:45 AM
4:45-5:45 PM

* Turning movements at Old Lynchburg Rd & Hickory St are 2018 counts taken from Southwood Phase 1 TIA. Through volumes balanced to Sunset Ave. counts.

LEGEND:

- Existing Road
- X — AM Peak Hour Volume
- (X) — PM Peak Hour Volume
- Stop Controlled Intersection
- Signalized Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

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# Southwood Phase 2 TIA
# 2021 Existing Peak Hour Volumes
# Albemarle County, Virginia

Figure
3-1

# 4 2030 TOTAL BACKGROUND CONDITIONS

The background 2030 volumes were analyzed assuming future intersection geometry in conjunction with projected background traffic volumes. As previously mentioned, the intersection of 5th Street Ext./Old Lynchburg Road/County Complex is expected to be rebuilt as a roundabout by the year 2030. Accordingly, this intersection was analyzed using SIDRA 9.

The background traffic volumes were developed based on a 1% annual growth rate and the completion of four (4) other developments in the study area.

## 4.1 2030 BACKGROUND TRAFFIC GROWTH

The 1% annual growth rate discussed above was compounded annually for the 9-year period from 2021 to 2030 and applied to mainline through volumes and the I-64 ramps only. The resulting 2030 Existing + Growth Volumes are shown on Figure 4-1.

## 4.2 APPROVED BACKGROUND 2030 DEVELOPMENTS

Background developments in the study area were based on the Albemarle County Development Dashboard information, published in February 2020. The most recent aerial imagery (updated June 2021) was used to identify which developments had already been built. The background developments that are currently under construction and expected to open by the year 2030 are as follows:

1. Whittington Phase B3 – 24 remaining single-family homes
2. Albemarle Business Park (Formerly Royal Fern) – 102,000 S.F of office space, 5,000 S.F. of restaurant space, 5,000 S.F. retail store, 4,000 S.F. variety store, 125 room business hotel, 100,000 S.F. self-storage, and 150 units of multifamily housing (mid-rise).
    a. The Traffic Impact Analysis for this development was completed under the name Royal Fern. The name of the development has been changed to Albemarle Business Park.
3. 5th Street Landing – 9,500 S.F. of retail space and an 8,500 S.F. day care center.
4. Southwood Phase 1 – 25,000 S.F. of retail space, 25,000 S.F. of office space, 270 units of apartments/townhomes, and 30 single family homes.

The location of the background developments is shown on Figure 4-2.

The trips that would be generated by developments 1 and 3 were obtained via the ITE *Trip Generation Manual, 10th Edition*. The trips that would be generated by developments 2 and 4 were obtained from their respective traffic studies (see Appendix E). The total background development trip generation is shown in Table 4-1.

.

## Table 4-1: Approved Background Development Trip Generation

| | Size | Units | Land Use Code | Weekday[1] AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total | Average Daily Trips |
|---|---|---|---|---|---|---|---|---|---|---|
| **1. Whittington[2]** | | | | | | | | | | |
| Single Family Residential - 24 Units Remaining | | | | | | | | | | |
| Built by 2030 | 24 | D.U. | 210 | 6 | 16 | 22 | 16 | 10 | 26 | 280 |
| **Total Whittington Trips** | **24** | **D.U.** | | **6** | **16** | **22** | **16** | **10** | **26** | **280** |
| **2. Albemarle Business Park [2,3]** | | | | | | | | | | |
| Multifamily Housing - 150 Units Remaining | | | | | | | | | | |
| Built by 2030 | 150 | D.U. | 221 | 14 | 40 | 54 | 40 | 26 | 66 | 816 |
| Office | | | | | | | | | | |
| Built by 2030 | 102,000 | S.F | 710 | 105 | 17 | 122 | 19 | 97 | 116 | 1,082 |
| Business Hotel | | | | | | | | | | |
| Built by 2030 | 125 | Room | 312 | 20 | 29 | 49 | 22 | 18 | 40 | 514 |
| Retail (Built by 2030) | | | | | | | | | | |
| Restaurant | 5,000 | S.F. | 932 | 27 | 23 | 50 | 30 | 19 | 49 | 561 |
| Store | 5,000 | S.F. | 876 | 4 | 1 | 5 | 11 | 10 | 21 | 332 |
| Variety Store | 4,000 | S.F. | 814 | 7 | 6 | 13 | 14 | 13 | 27 | 254 |
| Mini Warehouse | 100,000 | S.F. | 151 | 6 | 4 | 10 | 8 | 9 | 17 | 151 |
| *Total Albemarle Business Park Retail & Office Trips* | | | | 169 | 80 | 249 | 104 | 166 | 270 | 2,894 |
| **Total Albemarle Business Park Trips Trips** | | | | **183** | **120** | **303** | **144** | **192** | **336** | **3,710** |
| **3. 5th Street Landing [2]** | | | | | | | | | | |
| Day Care | | | | | | | | | | |
| Built by 2030 | 8,500 | S.F | 565 | 50 | 44 | 94 | 44 | 51 | 95 | 405 |
| Retail | | | | | | | | | | |
| Built by 2030 | 9,500 | S.F. | 820 | 6 | 3 | 9 | 17 | 19 | 36 | 359 |
| **Total 5th Street Development Trips** | | | | **56** | **47** | **103** | **61** | **70** | **131** | **764** |
| **4. Southwood Phase I [4]** | | | | | | | | | | |
| Residential (built by 2030) | | | | | | | | | | |
| Apartments/Townhomes | 270 | D.U. | 220 | 28 | 95 | 123 | 90 | 53 | 143 | 1,976 |
| Single Family | 30 | D.U. | 210 | 7 | 19 | 26 | 20 | 12 | 32 | 343 |
| *Residential Subtotal* | | | | 35 | 114 | 149 | 110 | 65 | 175 | 2,319 |
| Commercial (built by 2030) | | | | | | | | | | |
| Retail | 25,000 | S.F. | 820 | 15 | 9 | 24 | 46 | 49 | 95 | 944 |
| Office | 25,000 | S.F | 710 | 43 | 7 | 50 | 5 | 26 | 31 | 277 |
| *Commercial Subtotal* | | | | 58 | 16 | 74 | 51 | 75 | 126 | 1,221 |
| **Total Southwood Phase 1 Development Trips** | | | | **93** | **130** | **223** | **161** | **140** | **301** | **3,540** |
| **Total Background Trips** | | | | **338** | **313** | **651** | **382** | **412** | **794** | **8,294** |

Notes: (1) Based on the Institute of Transportation Engineers Trip Generation, 10th Edition. Assumes General Urban/Suburban land use category.
(2) 2030 Development programs obtained from the Albemarle County Development Dashboard (last updated 2/2020).
(3) Albemarle Business Park trips obtained from the Royal Fern Development TIA Supplement dated April 9, 2020 and prepared by EPR, PC.
(4) Southwood Phase 1 trips obtained from the Southwood Phase 1 TIA dated January 7, 2019 and prepared by Timmons Group.

## 4.3 Approved Background 2030 Development Trip Distribution and Assignment

Trip distributions were developed for each of the background developments. These distributions followed the same methodology for the overall percentage of traffic entering the study area road network as the proposed development. The distributions for each approved background development are included in Appendix E.

The trip generation for each approved background development was then assigned to the study area road network according to each trip distribution to create the individual approved background site trips. The trips from the individual developments are shown in Appendix E and summed to develop the total trips generated by the background developments shown on Figure 4-3.

## 4.4 Total Background 2030 Traffic Forecasts

The total background development trips shown on Figure 4-3 were then added to the 2030 Existing + Growth Volumes shown on Figure 4-1 to yield the Total 2030 Background Traffic Volumes, shown on Figure 4-4.

## 4.5 2030 Background Capacity Analysis Results

Table 4-2 summarizes the 2030 background intersection LOS, delay, 95$^{th}$ percentile (Synchro and Sidra), and maximum (SimTraffic) queue lengths based on the 2030 background peak hour traffic volumes shown on Figure 4-4, the future lane geometry (Figure 2-2), and the existing timings at the traffic signals. The corresponding SYNCHRO and SIDRA worksheets are included in Appendix F.

Note that Route 631 (5$^{th}$ Street Extension and Old Lynchburg Road) is assumed to run north-south through the study area.

As shown in Table 4-2, under 2030 background conditions:

- At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95$^{th}$ percentile and maximum queue lengths.

- At the unsignalized intersection of Old Lynchburg Road and Sunset Ave. Ext./Private Entrance, the eastbound approach will operate at a LOS C/D during the AM/PM peaks, respectively. All other movements and approaches operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95$^{th}$ percentile and maximum queue lengths.

- At the roundabout intersection of Old Lynchburg Road/5$^{th}$ Street Ext./County Complex, the overall intersection operates at a LOS A/B during the AM/PM peaks, respectively. During the PM peak, the eastbound approach operates at a LOS C. All other movements operate at a LOS B or better during both peak hours. Adequate storage exists to accommodate 95$^{th}$ percentile queue lengths.

- At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
  - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB through-left maximum queue backs up past the storage for the EB right, effectively blocking both lanes.
  - The westbound left is over capacity during both peak hours (LOS F). The WB right will operate at a LOS E/B during the AM/PM peaks, respectively. During both peak hours, the WB left maximum queue backs up past the storage for the WB right lane effectively blocking both lanes.
  - All other turning movements and approaches will operate at a LOS C or better during both peak hours. All other turning movements have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The overall intersection is over capacity during both AM (LOS F) and PM (LOS E) peaks.
  - The eastbound approach is over capacity during both AM (LOS F) and PM (LOS E) peaks. During the AM peak, the EB approach maximum queue will back up onto mainline I-64 eastbound.
  - The northbound approach is over capacity during both peak hours (LOS F). The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection will operate at a LOS D/F during the AM/PM peaks, respectively.
  - The westbound approach is over capacity during both AM (LOS F) and PM (LOS E) peaks. The northbound left and through movement will operate at a LOS C or better during both peak hours.
  - The southbound approach is over capacity during both the AM and PM peaks (LOS F). During the PM peak, the SB thru maximum queue backs up through the nearby intersection at the Holiday Inn. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

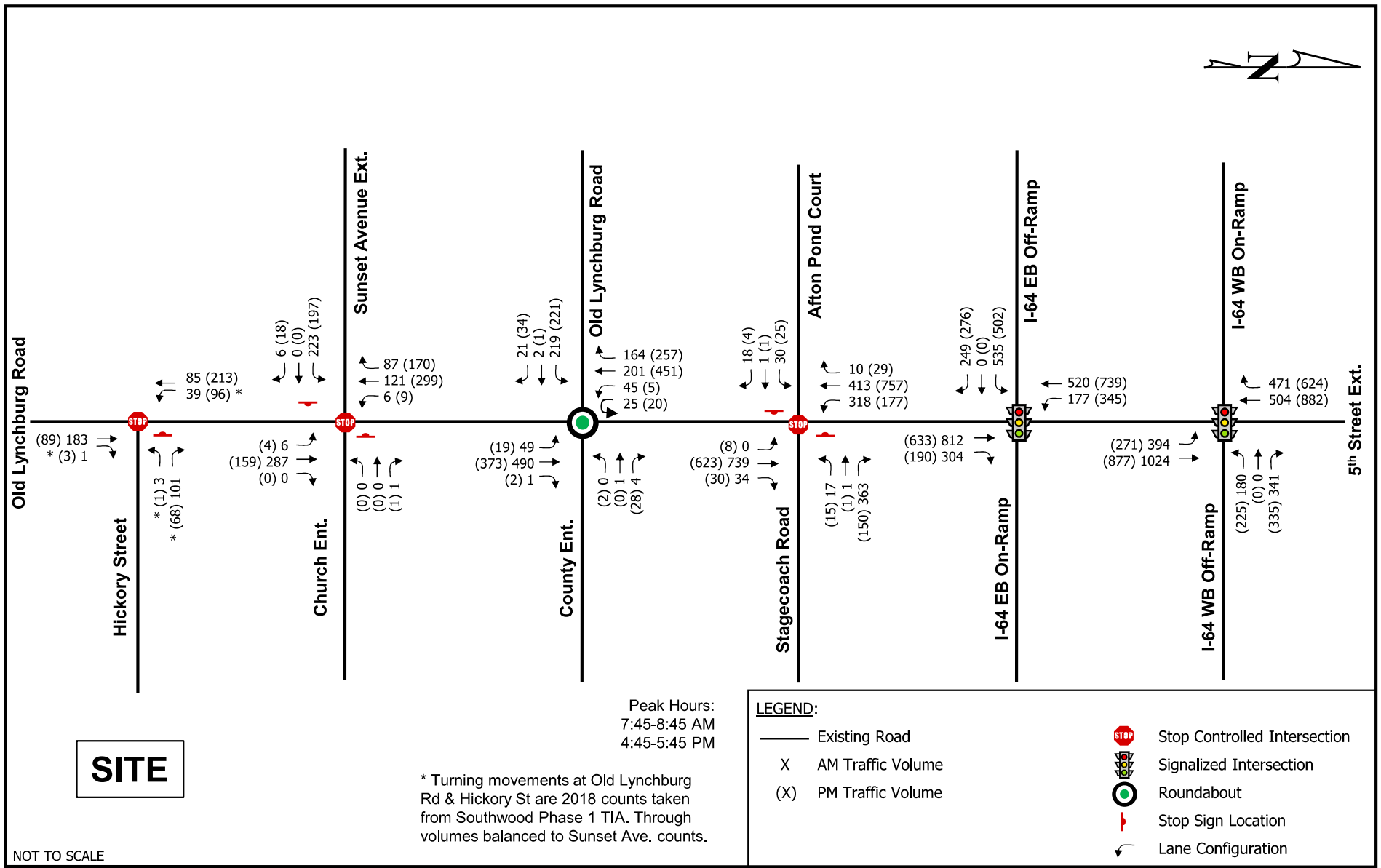
## Table 4-2: Intersection Level of Service and Delay Summary
## 2030 Total Background Peak Hour Traffic

| Intersection and Type of Control | Movement and Approach | Effective Turn Lane Storage (ft) | AM PEAK HOUR | | | | PM PEAK HOUR | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Delay [1] (sec/veh) | LOS [1] | Synchro/Sidra 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) | Delay [1] (sec/veh) | LOS [1] | Synchro/Sidra 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) |
| 1. Old Lynchburg Road (N-S) and | *WB Approach* | | 11.4 | B | 23 | 104 | *10.3* | B | 18 | 76 |
| Hickory Street (W) | NB Thru - Right | | † | † | -- | 2 | † | † | -- | |
| Unsignalized | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 295 | 8.1 | A | 6 | 80 | 7.9 | A | 12 | 63 |
| | SB Thru | | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 2. Old Lynchburg Road (N-S) and | *EB Approach* | | *21.0* | *C* | 60 | 155 | *32.2* | *D* | 90 | 162 |
| Church Entrance (W) / | *WB Approach* | | *9.5* | *A* | 0 | 18 | *9.1* | *A* | 0 | 6 |
| Sunset Avenue Ext. (E) | NB Left | 250 | 7.9 | A | 0 | 17 | 8.9 | A | 0 | 19 |
| Unsignalized | NB Thru-Right | | † | † | -- | -- | † | † | -- | 2 |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 290 | 8.2 | A | 0 | 18 | 7.8 | A | 0 | 20 |
| | SB Thru | | † | † | -- | -- | † | † | -- | 1 |
| | SB Right | 330 | † | † | -- | 2 | † | † | -- | 4 |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 3. Old Lynchburg Road (NB) / | *EB Approach* | | *11.8* | *B* | 83 | -- | *24.6* | *C* | 205 | -- |
| 5th Street Extended (SB) and | *WB Approach* | | *9.0* | *A* | 1 | -- | *9.3* | *A* | 7 | -- |
| County Complex (WB) / | NB Left - Thru | | 10.4 | B | 72 | -- | 9.2 | A | 56 | -- |
| Old Lynchburg Road (EB) | NB Thru - Right | | 10.1 | B | 75 | -- | 8.7 | A | 58 | -- |
| Roundabout | *NB Approach* | | *10.2* | *B* | -- | -- | *8.7* | *A* | -- | -- |
| | SB Left - Thru | | 8.0 | A | 65 | -- | 12.9 | B | 175 | -- |
| | SB Right | | 7.0 | A | 40 | -- | 8.4 | A | 61 | -- |
| | *SB Approach* | | *7.6* | *A* | -- | -- | *11.4* | *B* | -- | -- |
| | **Overall** | | **9.5** | **A** | -- | -- | **13.1** | **B** | **--** | **--** |
| 4. 5th Street Extended (N-S) and | EB Left - Thru | | 5065.7 | F | 115 | 290 | 521.3 | F | 68 | 127 |
| Stagecoach Road (W) / | EB Right | 115 | 10.9 | B | 2 | 115 | 12.5 | B | 0 | 37 |
| Afton Pond Court (E) | *EB Approach* | | *3208.8* | *F* | -- | -- | *453.5* | *F* | -- | -- |
| Unsignalized | WB Left - Thru | | 635.6 | F | 57 | 797 | 203.4 | F | 33 | 301 |
| | WB Right | 100 | 37.0 | E | 158 | 100 | 14.4 | B | 25 | 99 |
| | *WB Approach* | | *63.7* | *F* | -- | -- | *31.3* | *D* | -- | -- |
| | NB Left | 265 | 0.0 | A | 0 | -- | 10.5 | B | 0 | 32 |
| | NB Thru | | † | † | -- | 32 | † | † | -- | 47 |
| | NB Right | 300 | † | † | -- | 29 | † | † | -- | 18 |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 300 | 16.6 | C | 62 | 290 | 12.0 | B | 23 | 172 |
| | SB Thru | | † | † | -- | 417 | † | † | -- | 2 |
| | SB Right | 290 | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 5. 5th Street Extended (N-S) and | EB Left - Thru | | 153.2 | F | #625 | 1101 | 103.4 | F | #546 | 847 |
| I-64 EB Off-Ramp (E) | EB Right | 500 | 40.0 | D | 140 | 500 | 42.7 | D | 208 | 498 |
| Signalized | *EB Approach* | | *112.6* | *F* | -- | -- | *79.2* | *E* | -- | -- |
| | NB Thru - Right | | 179.4 | F | #677 | 757 | 148.9 | F | #540 | 1295 |
| | *NB Approach* | | *173.4* | *F* | -- | -- | *148.1* | *F* | -- | -- |
| | SB Left | 245 | 20.9 | C | 83 | 186 | 16.7 | B | 158 | 241 |
| | SB Thru | | 0.1 | A | 77 | 63 | 0.1 | A | 74 | 207 |
| | *SB Approach* | | *4.5* | *A* | -- | -- | *4.7* | *A* | -- | -- |
| | **Overall** | | **108.0** | **F** | -- | -- | **72.9** | **E** | **--** | **--** |
| 6. 5th Street Extended (N-S) at | WB Left - Thru | | 36.2 | D | #227 | 244 | 43.5 | D | #289 | 246 |
| I-64 WB Off-Ramp (W) | WB Right | 450 | 122.9 | F | #312 | 349 | 101.7 | F | #273 | 254 |
| Signalized | *WB Approach* | | *88.0* | *F* | -- | -- | *75.2* | *E* | -- | -- |
| | NB Left | 140 | 18.7 | B | 180 | 139 | 23.0 | C | 136 | 139 |
| | NB Thru | | 0.1 | A | 108 | 411 | 0.1 | A | 34 | 176 |
| | *NB Approach* | | *5.3* | *A* | -- | -- | *5.7* | *A* | -- | -- |
| | SB Thru - Right | | 93.3 | F | #427 | 580 | 204.1 | F | #754 | 1394 |
| | *SB Approach* | | *91.5* | *F* | -- | -- | *182.9* | *F* | -- | -- |
| | **Overall** | | **49.2** | **D** | -- | -- | **98.2** | **F** | **--** | **--** |

[1] *Overall intersection LOS and delay cannot be reported for unsignalized intersections.*

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

# - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
SimTraffic queues are average maximum queues after 10 runs of 60 minutes each.




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# Southwood Phase 2 TIA
## 2030 Existing + Growth Peak Hour Volumes
## Albemarle County, Virginia

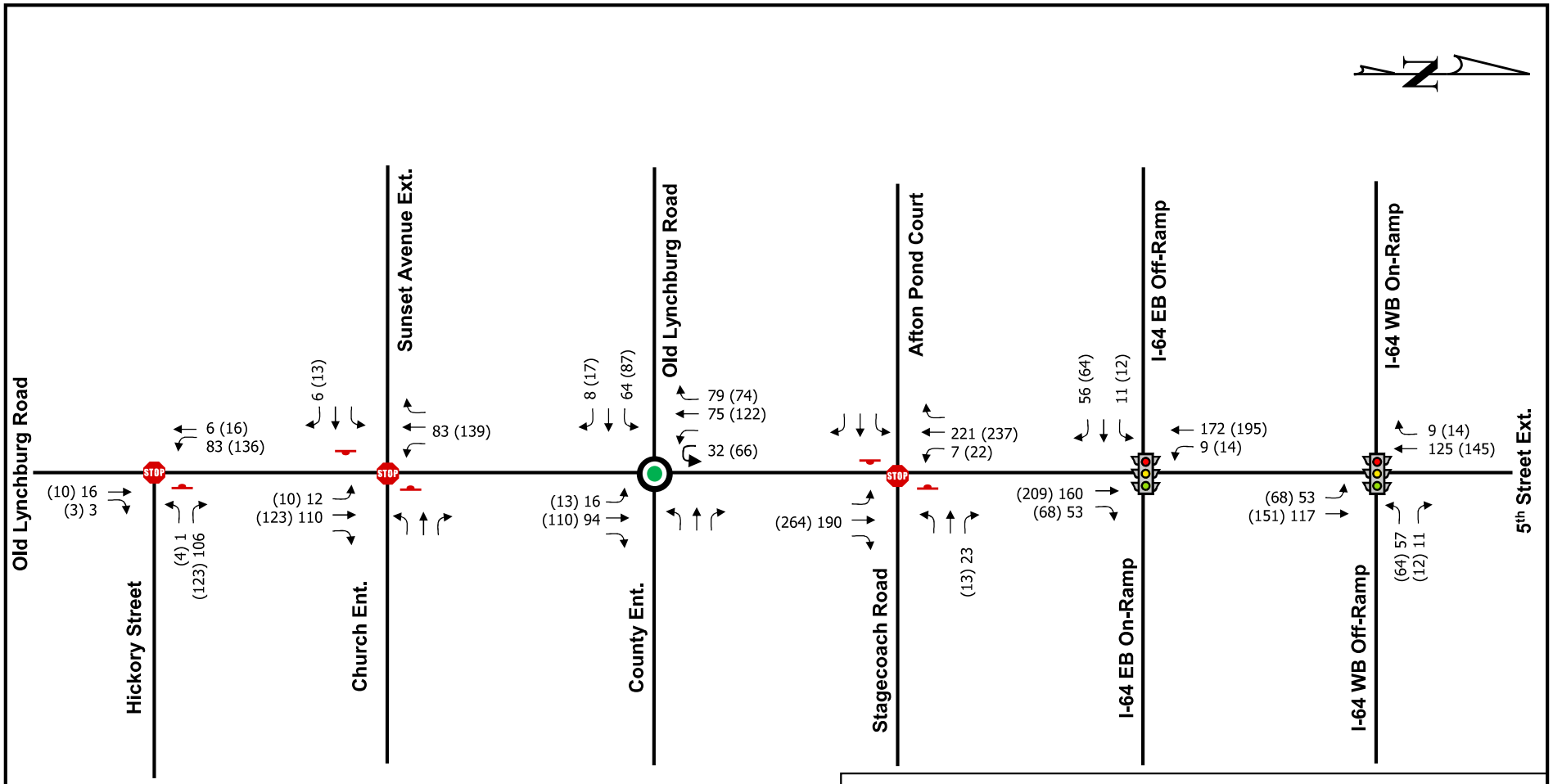
Figure
4-1




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# Southwood Phase 2 TIA
# Approved Background Development Locations
# Albemarle County, Virginia

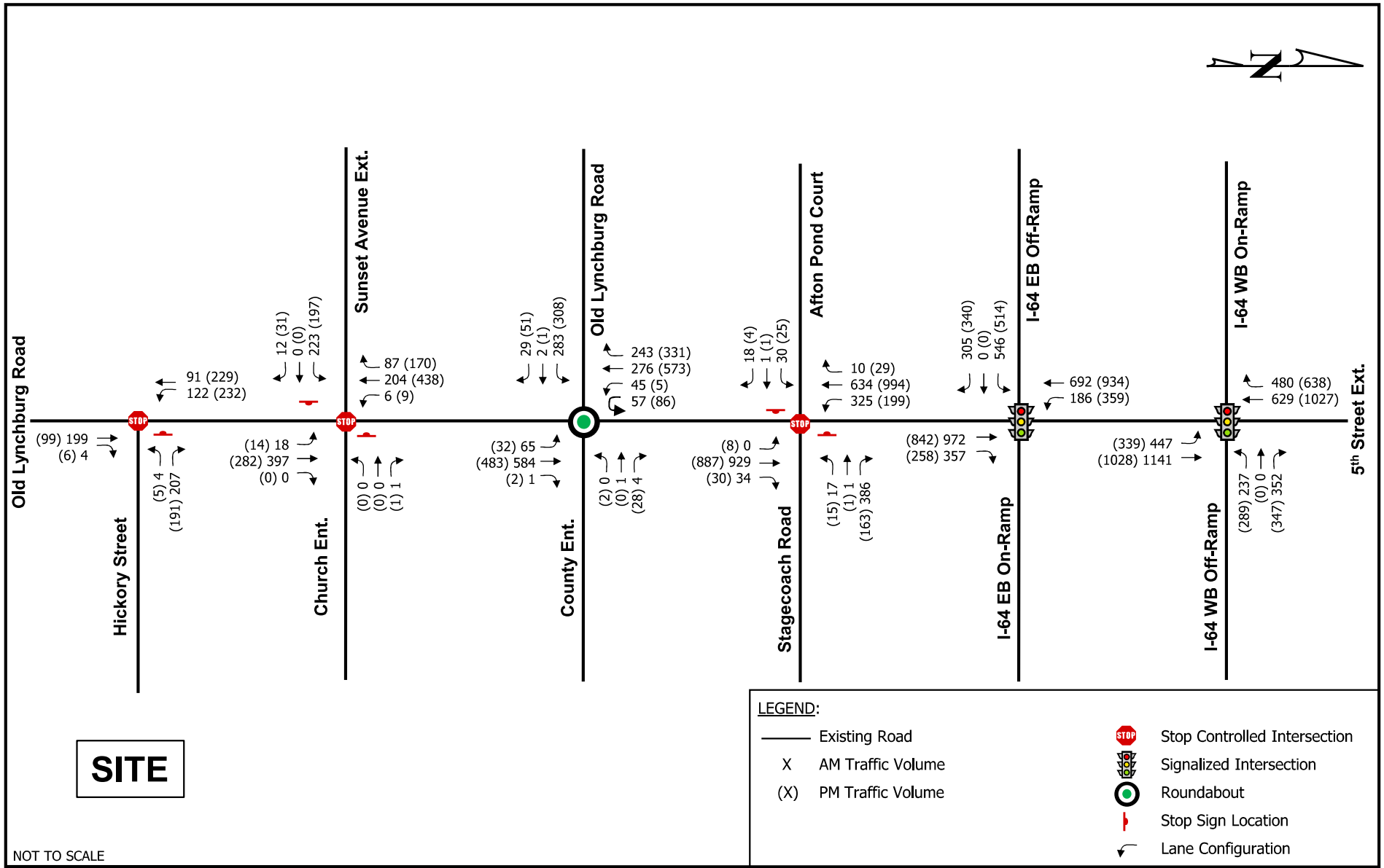
Figure
4-2




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# Southwood Phase 2 TIA
# 2030 Approved Background Development Trips
# Albemarle County, Virginia

Figure
4-3




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# Southwood Phase 2 TIA
# 2030 Total Background Peak Hour Volumes
# Albemarle County, Virginia

Figure
4-4

# 5 SITE TRIP GENERATION AND DISTRIBUTION

Site traffic for the proposed development was estimated based on the site characteristics and subsequently distributed to the surrounding roadway network.

The site is currently zoned R-2 (two-family residential) and is occupied by an income restricted mobile home park with 341 mobile home units.

The Applicant is proposing to develop the site in two Phases to include the following:

- 1,336 Residential Dwelling Units
  - 442 Affordable Housing Units
  - 894 Market Rate Units
- 60,000 S.F. of Commercial Space
  - 30,000 S.F. Office Space
  - 30,000 S.F. Retail Space

The site was the subject of a 2019 rezoning and traffic impact analysis which assumed two Phases of development with slightly different density. At that time, the traffic study assumed the following:

- Under Phase 1, the existing 341 mobile home units remained, and 300 dwelling units (270 apartments/townhomes and 30 single family units) and 50,000 S.F. of commercial space (25,000 S.F. Office Space and 25,000 S.F. Retail Space) added to the development.
- Phase 2 was assumed to consist of replacing the 341 mobile home units with 500 new dwelling units (for a net increase of 159 dwelling units).

In order to update the traffic study with the proposed changes, all density changes were assumed to occur with the Phase 2 development. This allows the previous traffic study to stand on its own and not require updates.

Therefore, for the purposes of this traffic study, it was assumed that Phase 1 will remain the same and Phase 2 will consist of the following:

- Replace the existing 341 mobile home units with 1,036 new dwelling units
  - 60 Single Family Dwelling Units
  - 419 Apartment Dwelling Units
  - 115 Townhome Dwelling Units
  - 442 Affordable Housing Units
- Add 10,000 S.F. of Commercial Space
  - 5,000 S.F. Office Space
  - 5,000 S.F. Retail Space

The buildout of the development is likely to occur sometime between 2030 and 2040. For purposes of this analysis, the development was assumed to be complete by 2030 to Primary access to the site will be provided via existing Hickory Street which to the full access connection to Old Lynchburg Road. Secondary access will be provided via Hickory Street to Stagecoach Road to Old Lynchburg Road/5th Street Extended. No new connections to Old Lynchburg Road (Route 631) are proposed with the development.

For purposes of this analysis, the development was assumed to be complete and occupied by 2030.

## 5.1 SITE TRIP GENERATION

The site-generated traffic volumes shown in Table 5-1 for the total Southwood Development were estimated using the 11th Edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* and was calculated using the number of dwelling units or the size of the building (S.F.) as the independent variable.

To determine the number of trips generated by Phase 2 of the proposed development, the trips for the total Southwood Development (Phases 1 and 2) were recalculated with an updated development program including affordable housing units. Then, the total trips approved in the Southwood Phase 1 TIA were subtracted to yield the net increase in trips for Southwood Phase 2.

As noted above, the proposed development will replace the existing mobile home park and therefore those trips were subtracted from the total development trip generation to calculate the net new residential trips associated with Phase 2.

As shown in Table 5-1, when complete, Phase 2 of the proposed development will generate 291 net trips (112 in and 179 out) during the AM peak hour, 407 net trips (225 in and 182 out) during the PM peak hour, and 4,433 net average weekday trips.

## 5.2 PASS-BY TRIP REDUCTIONS

Reductions were not taken for pass-by trips due to the site location and the low traffic volumes along Old Lynchburg Road in the vicinity of the site.

## Table 5-1: 2030 Trip Generation Summary

| | Size | Units | Land Use Code | Weekday AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total | Average Daily Trips |
|---|---|---|---|---|---|---|---|---|---|---|
| **1. Total Southwood Development** [1] | | | | | | | | | | |
| Proposed Residential | | | | | | | | | | |
| Multifamily Housing (Low-Rise) | 689 | D.U. | 220 | 57 | 179 | 236 | 200 | 117 | 317 | 4,492 |
| Townhomes | 115 | D.U. | 215 | 17 | 37 | 54 | 37 | 28 | 65 | 826 |
| Single Family | 90 | D.U. | 210 | 18 | 50 | 68 | 57 | 33 | 90 | 916 |
| Affordable Housing | 442 | D.U. | 223 | 46 | 113 | 159 | 120 | 83 | 203 | 2,126 |
| *Proposed Residential Subtotal* | *1,336* | *D.U.* | | *138* | *379* | *517* | *414* | *261* | *675* | *8,360* |
| Existing Residential Development (To be Removed) | | | | | | | | | | |
| Mobile Home Park | 341 | D.U. | 240 | 28 | 105 | 133 | 123 | 75 | 198 | 2,428 |
| *Existing Residential Subtotal* | | | | *28* | *105* | *133* | *123* | *75* | *198* | *2,428* |
| Net New Residential (Proposed - Existing) | | | | *110* | *274* | *384* | *291* | *186* | *477* | *5,932* |
| Commercial | | | | | | | | | | |
| Retail | 30,000 | S.F. | 822 | 43 | 28 | 71 | 85 | 85 | 170 | 1,634 |
| Office | 30,000 | S.F | 710 | 52 | 7 | 59 | 10 | 51 | 61 | 407 |
| *Commercial Subtotal* | 60,000 | S.F | | *95* | *35* | *130* | *95* | *136* | *231* | *2,041* |
| **Total Southwood Development Trips (Phase 1 and Phase 2)** | | | | **205** | **309** | **514** | **386** | **322** | **708** | **7,973** |
| **2. Approved Southwood Phase 1 (Background Development)** [2] | | | | | | | | | | |
| Residential | | | | | | | | | | |
| Apartments/Townhomes | 270 | D.U. | 220 | 28 | 95 | 123 | 90 | 53 | 143 | 1,976 |
| Single Family | 30 | D.U. | 210 | 7 | 19 | 26 | 20 | 12 | 32 | 343 |
| *Residential Subtotal* | 300 | D.U. | | *35* | *114* | *149* | *110* | *65* | *175* | *2,319* |
| Commercial | | | | | | | | | | |
| Retail | 25,000 | S.F. | 820 | 15 | 9 | 24 | 46 | 49 | 95 | 944 |
| Office | 25,000 | S.F | 710 | 43 | 7 | 50 | 5 | 26 | 31 | 277 |
| *Commercial Subtotal* | 50,000 | S.F | | *58* | *16* | *74* | *51* | *75* | *126* | *1,221* |
| **Total Approved Southwood Phase 1 Development Trips** | | | | **93** | **130** | **223** | **161** | **140** | **301** | **3,540** |
| **3. Net Increase in Trips, Southwood Phase 2 Total Development - Approved Phase 1** | | | | | | | | | | |
| Net Residential Trips | | | | 75 | 160 | 235 | 181 | 121 | 302 | 3,613 |
| Net Commerical Trips | | | | 37 | 19 | 56 | 44 | 61 | 105 | 820 |
| **Total Net Increse in Trips, Southwood Phase 2** | | | | **112** | **179** | **291** | **225** | **182** | **407** | **4,433** |

Notes: (1) Based on the Institute of Transportation Engineers Trip Generation, 11th Edition. Assumes General Urban/Suburban land use category.
(2) Southwood Phase 1 trips obtained from the Southwood Phase 1 TIA dated January 7, 2019 and prepared by Timmons Group.

## 5.3 TRIP DISTRIBUTION METHODOLOGY

The distribution of external trips generated by the proposed development was based on the existing travel patterns, the nature of the use, and local knowledge. The distributions also align with those used in the approved Southwood Phase 1 TIA.

The following directional distributions were assumed for residential units:

- To/from the west on Sunset Avenue Ext. – 10%
- To/from the west on Old Lynchburg Road – 10%
- To/from the west on I-64 – 20%
- To/from the east on I-64 – 20%
- To/from the north on Stagecoach Road – 20%
- To/from the north on 5th Street Ext. – 40%

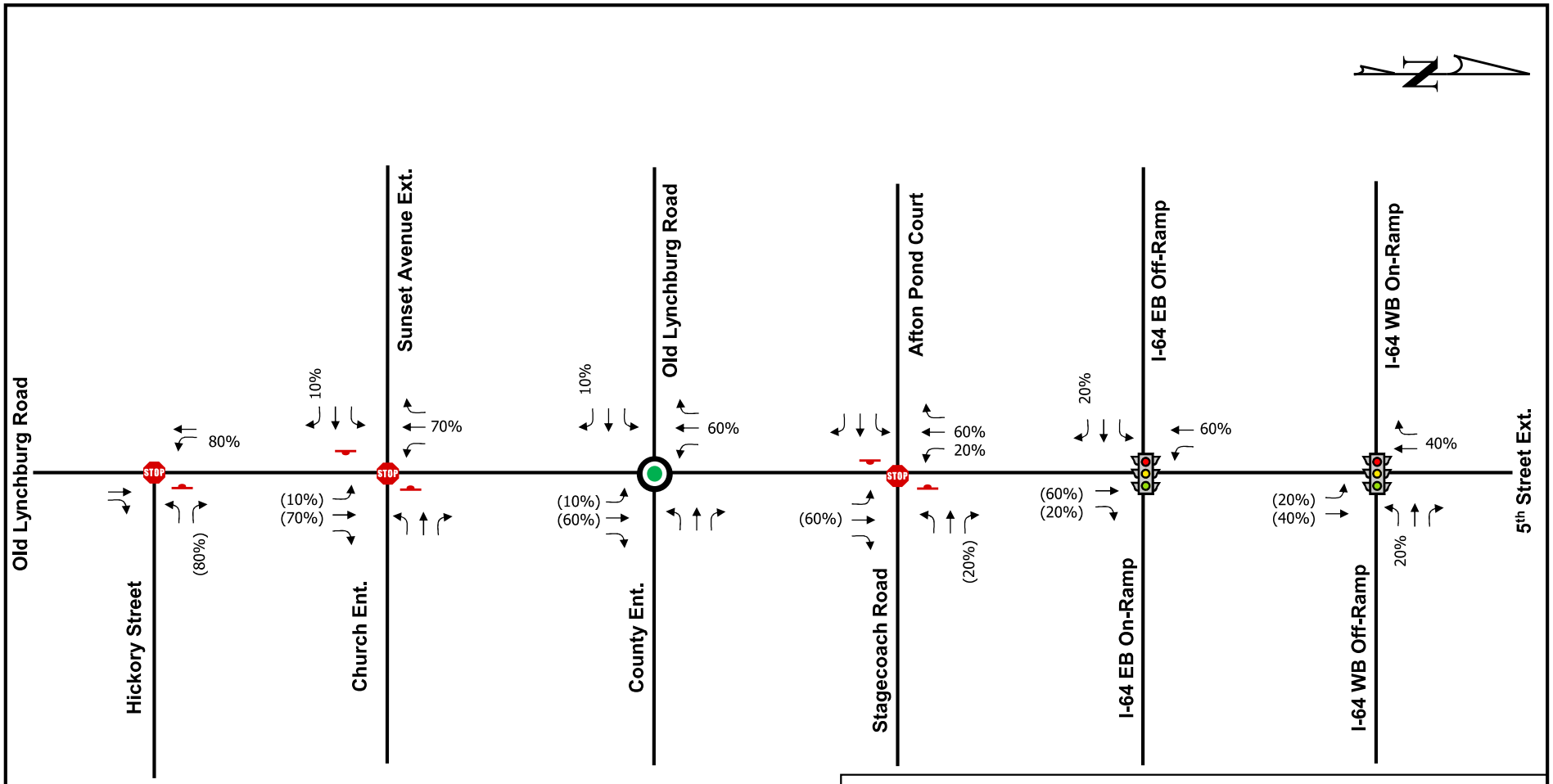
The following directional distributions were assumed for commercial development:

- To/from the south on Old Lynchburg Road – 5%
- To/from the west on Sunset Avenue Ext. – 5%
- To/from the west on Old Lynchburg Road – 5%
- To/from the west on I-64 – 20%
- To/from the east on I-64 – 20%
- To/from the north on 5th Street Ext. – 45%

Directional distributions were then applied to the study intersections as shown on Figures 5-1 (residential) and 5-2 (commercial).

## 5.4 TRAFFIC ASSIGNMENT

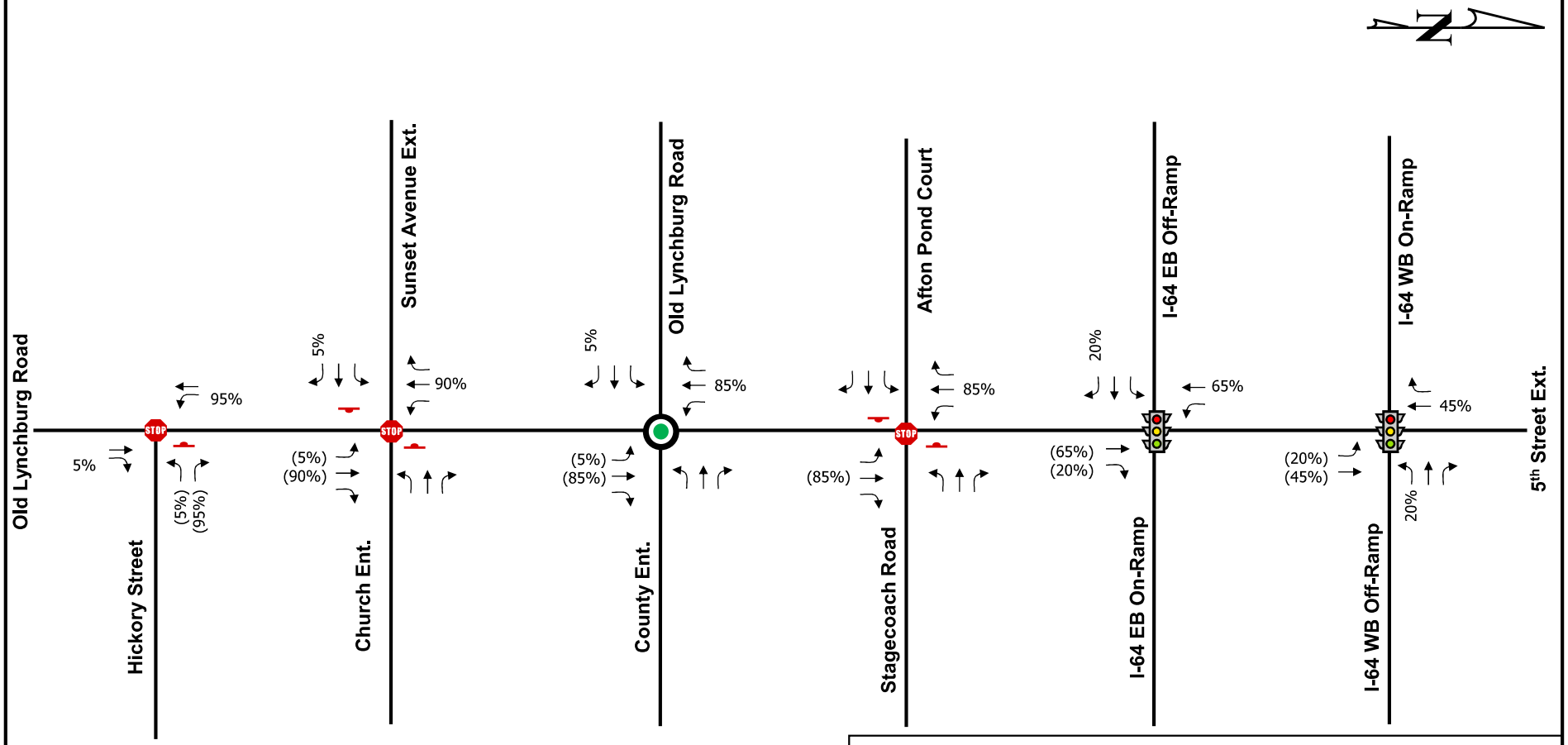
The trip distribution percentages for the external site trips were applied to the trip generation shown in Table 5-1 to distribute the external site trips to the surrounding roadway network. The resulting Phase 2 site generated external trips are shown on Figure 5-3.




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# Southwood Phase 2 TIA
# Site Trip Distributions - Residential
# Albemarle County, Virginia

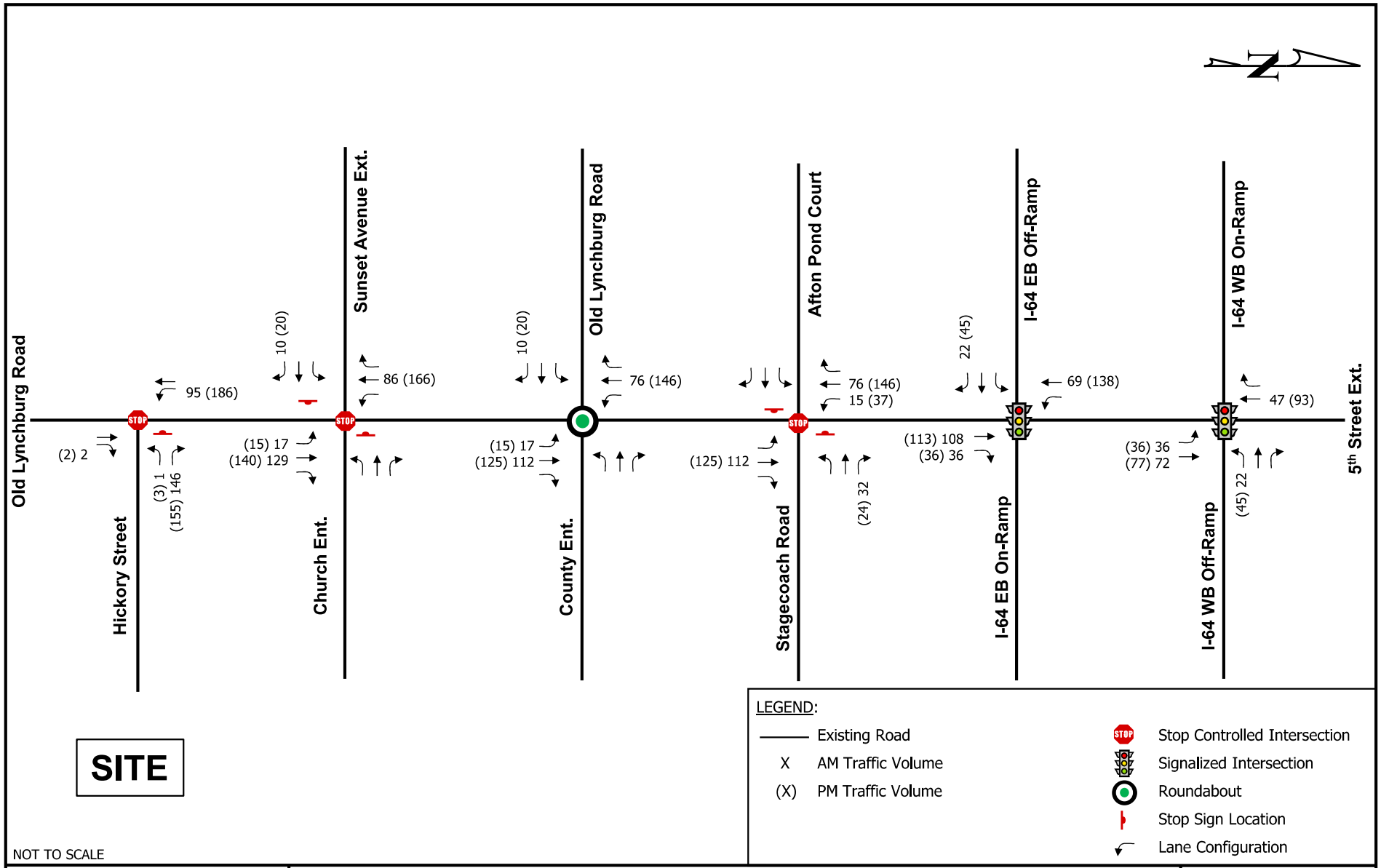
Figure
5-1




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# Southwood Phase 2 TIA
# Site Trip Distributions - Commercial
# Albemarle County, Virginia

Figure
5-2




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# Southwood Phase 2 TIA
# 2030 Phase 2 Site Trips
# Albemarle County, Virginia

Figure
5-3

# 6 2030 TOTAL FUTURE CONDITIONS

To complete the analysis of the 2030 total conditions (with Phase 2 of the proposed development), the estimated site trips were added to the background 2030 volumes. The projected volumes were then used to complete the capacity analysis.

As previously mentioned, the intersection of 5th Street Ext./Old Lynchburg Road/County Complex is expected to be rebuilt as a roundabout by the year 2030. Accordingly, this intersection was analyzed using SIDRA 9.

## 6.1 TOTAL FUTURE TRAFFIC VOLUMES

To generate the 2030 total future traffic volumes, the Phase 2 external site trips shown on Figure 5-3 was added to the background 2030 traffic volumes shown on Figure 4-4. The resulting 2030 total future traffic volumes are shown on Figure 6-1.

## 6.2 2030 TOTAL CAPACITY ANALYSES

Table 6-1 summarizes the 2030 total future intersection LOS, delay, 95th percentile (Synchro) queue lengths, and the maximum (SimTraffic) queue lengths based on the 2030 total future traffic volumes shown on Figure 6-1, the future lane geometry (Figure 2-2), and the existing traffic signal timings. The corresponding SYNCHRO and SIDRA worksheets are included in Appendix G.

Note that Route 631 (5th Street Extension and Old Lynchburg Road) is assumed to run north-south through the study area. Also note that the overall intersection LOS and delay cannot be reported for unsignalized intersections.

As shown in table 7-1, under 2030 total future conditions the intersections will operate at comparable capacity and queuing levels as under background conditions. Specifically:

- At the unsignalized intersection of Old Lynchburg Road and Hickory Street, all turning movements and approaches will continue to operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Extended, the eastbound approach will operate at a LOS E/F during the AM/PM peaks, respectively. All other turning movements and approaches will operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

- At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. All movements will operate at a LOS B or better during both peak hours except the eastbound approach will operate at a LOS C during the PM peak. Adequate storage exists to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
    - The eastbound approach is over capacity during both peak hours (LOS F). The EB left maximum queue backs up past the storage for the eastbound right effectively blocking both lanes.
    - The westbound left is over capacity during both peak hours (LOS F). The westbound right will operate at a LOS F/C during the AM/PM peaks, respectively. During both peak

hours, the WB left maximum queue backs up past the storage for the westbound right effectively blocking both lanes.
    - The north- and southbound turning movements and approaches will operate at a LOS C or better during both peak hours. During the AM peak, the SB left maximum queue exceeds the available storage, spilling back into through lanes. All other turning movements have adequate turn bay storage to accommodate 95th percentile and maximum queues.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
    - The overall intersection is over capacity during both peaks (LOS F).
    - The eastbound approach is over capacity during both peak hours (LOS F). During both peak hours, the EB maximum queue will back up onto mainline I-64 eastbound.
    - The northbound approach is over capacity during both AM and PM (LOS F) peaks.
    - The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
    - The overall intersection will operate at a LOS D/F during the AM/PM peaks, respectively.
    - The westbound approach is over capacity during both peaks (LOS F). The northbound left and through movement will operate at a LOS C or better during both peak hours. During both peak hours, the NB left maximum queue exceeds the available storage.
    - The southbound approach is over capacity during both the AM and PM peaks (LOS F). During both peak hours, the SB thru maximum queue backs up through the adjacent intersection at the Holiday Inn.
    - All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

# Table 6-1: Intersection Level of Service and Delay Summary
# 2030 Total Future Traffic

| Intersection and Type of Control | Movement and Approach | Effective Turn Lane Storage (ft) | AM PEAK HOUR | | | | PM PEAK HOUR | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Delay [1] (sec/veh) | LOS [1] | Synchro/Sidra 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) | Delay [1] (sec/veh) | LOS [1] | Synchro/Sidra 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) |
| 1. Old Lynchburg Road (N-S) and | *WB Approach* | | *14.0* | *B* | 55 | 132 | *13.0* | *B* | 49 | 176 |
| Hickory Street (W) | NB Thru - Right | | † | † | -- | 2 | † | † | -- | 4 |
| Unsignalized | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 295 | 8.5 | A | 14 | 93 | 8.5 | A | 25 | 86 |
| | SB Thru | | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 2. Old Lynchburg Road (N-S) and | *EB Approach* | | *41.2* | *E* | 115 | 182 | *129.6* | *F* | 224 | 230 |
| Church Entrance (W) / | *WB Approach* | | *10.0* | *A* | 0 | 16 | *9.6* | *A* | 0 | 14 |
| Sunset Avenue Ext. (E) | NB Left | 250 | 8.2 | A | 2 | 24 | 9.6 | A | 2 | 26 |
| Unsignalized | NB Thru-Right | | † | † | -- | 5 | † | † | -- | 4 |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 290 | 8.5 | A | 0 | 20 | 8.2 | A | 0 | 23 |
| | SB Thru | | † | † | -- | 2 | † | † | -- | -- |
| | SB Right | 330 | † | † | -- | 4 | † | † | -- | 4 |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 3. Old Lynchburg Road (NB) / | *EB Approach* | | *9.2* | *A* | 66 | -- | *21.0* | *C* | 195 | -- |
| 5th Street Extended (SB) and | *WB Approach* | | *7.2* | *A* | 1 | -- | *7.5* | *A* | 6 | -- |
| County Complex (WB) / | NB Left - Thru | | 8.2 | A | 71 | -- | 7.7 | A | 60 | -- |
| Old Lynchburg Road (EB) | NB Thru - Right | | 7.6 | A | 74 | -- | 6.9 | A | 63 | -- |
| Roundabout | *NB Approach* | | *8.0* | *A* | -- | -- | *7.3* | *A* | -- | -- |
| | SB Left - Thru | | 7.0 | A | 67 | -- | 11.9 | B | 184 | -- |
| | SB Right | | 6.0 | A | 34 | -- | 7.3 | A | 53 | -- |
| | *SB Approach* | | *6.6* | *A* | -- | -- | *10.5* | *B* | -- | -- |
| | **Overall** | | **7.7** | **A** | -- | -- | **11.3** | **B** | **--** | **--** |
| 4. 5th Street Extended (N-S) and | EB Left - Thru | | 2350.4 | F | 107 | 280 | 1502.8 | F | 86 | 243 |
| Stagecoach Road (W) / | EB Right | 115 | 11.1 | B | 2 | 103 | 13.5 | B | 0 | 68 |
| Afton Pond Court (E) | *EB Approach* | | 1491.1 | F | -- | -- | *1304.2* | *F* | -- | -- |
| Unsignalized | WB Left - Thru | | 1348.2 | F | 66 | 787 | 514.2 | F | 49 | 682 |
| | WB Right | 100 | 66.2 | F | 242 | 100 | 16.8 | C | 35 | 100 |
| | *WB Approach* | | *119.1* | *F* | -- | -- | *56.0* | *F* | -- | -- |
| | NB Left | 265 | 0.0 | A | 0 | 0 | 11.2 | B | 0 | 36 |
| | NB Thru | | † | † | -- | 20 | † | † | -- | 172 |
| | NB Right | 300 | † | † | -- | 31 | † | † | -- | 28 |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 300 | 20.6 | C | 84 | 300 | 13.9 | B | 35 | 205 |
| | SB Thru | | † | † | -- | 709 | † | † | -- | 24 |
| | SB Right | 290 | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 5. 5th Street Extended (N-S) and | EB Left - Thru | | 153.2 | F | #625 | 1088 | 103.4 | F | #546 | 898 |
| I-64 EB Off-Ramp (E) | EB Right | 500 | 45.2 | D | 182 | 500 | 57.9 | E | #296 | 500 |
| Signalized | *EB Approach* | | *112.7* | *F* | -- | -- | *83.9* | *F* | | -- |
| | NB Thru - Right | | 244.6 | F | #779 | 985 | 219.8 | F | #642 | 1455 |
| | *NB Approach* | | *232.8* | *F* | -- | -- | *217.1* | *F* | -- | -- |
| | SB Left | 245 | 20.8 | C | m75 | 172 | 16.7 | B | m139 | 240 |
| | SB Thru | | 0.1 | A | m85 | 116 | 0.1 | A | m81 | 228 |
| | *SB Approach* | | *4.1* | *A* | -- | -- | *4.2* | *A* | -- | -- |
| | **Overall** | | **135.2** | **F** | -- | -- | **98.6** | **F** | **--** | **--** |
| 6. 5th Street Extended (N-S) at | WB Left - Thru | | 38.8 | D | #260 | 299 | 58.2 | E | #352 | 320 |
| I-64 WB Off-Ramp (W) | WB Right | 450 | 122.9 | F | #312 | 303 | 101.7 | F | #293 | 238 |
| Signalized | *WB Approach* | | *87.3* | *F* | -- | -- | *80.3* | *F* | -- | -- |
| | NB Left | 140 | 20.4 | C | m182 | 139 | 24.4 | C | m139 | 139 |
| | NB Thru | | 0.1 | A | m96 | 390 | 0.1 | A | m31 | 279 |
| | *NB Approach* | | *5.9* | *A* | -- | -- | *6.2* | *A* | -- | -- |
| | SB Thru - Right | | 108.6 | F | #466 | 716 | 239.8 | F | #827 | 1391 |
| | *NB Approach* | | *106.1* | *F* | -- | -- | *212.8* | *F* | -- | -- |
| | **Overall** | | **53.7** | **D** | -- | -- | **111.8** | **F** | **--** | **--** |

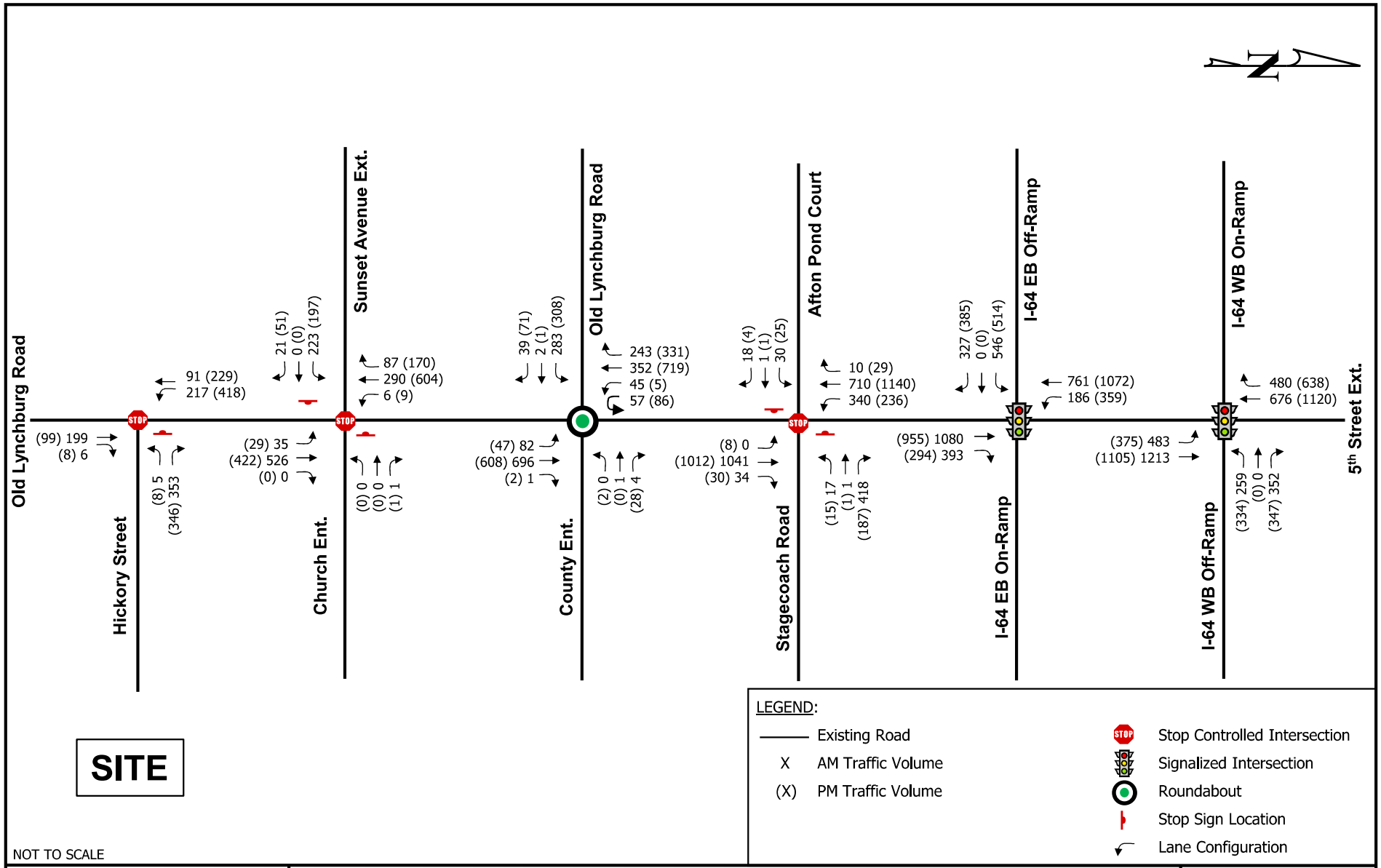
[1] *Overall intersection LOS and delay cannot be reported for unsignalized intersections.*

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

m Volume for 95th percentile queue is metered by upstream signal.

# - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
SimTraffic queues are average maximum queues after 10 runs of 60 minutes each.

** Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO.




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# Southwood Phase 2 TIA
# 2030 Total Future Peak Hour Volumes
# Albemarle County, Virginia

Figure
6-1

# 7 2036 TOTAL BACKGROUND CONDITIONS

In accordance with Chapter 527 Guidelines, this analysis examines a buildout plus six-year scenario (2038).

The background 2036 volumes were analyzed assuming future intersection geometry in conjunction with projected background traffic volumes.

The background traffic volumes were developed based on a 1% annual growth rate and the completion of four (4) other developments in the study area.

## 7.1 2036 Background Traffic Growth

The 1% annual growth rate discussed above was compounded annually for the 15-year period from 2021 to 2036 and applied to mainline through volumes and the I-64 ramps only. The resulting 2036 Existing + Growth Volumes are shown on Figure 7-1.

## 7.2 Approved Background 2036 Developments

Background developments in the study area were based on the Albemarle County Development Dashboard information, published in February 2020. The most recent aerial imagery (updated June 2021) was used to identify which developments had already been built. There are no background developments expected to open after the year 2030.

## 7.3 Total Background 2036 Traffic Forecasts

Since there are no background developments expected to open after 2030, the total 2030 background development trips shown on Figure 4-3 were then added to the 2036 Existing + Growth Volumes shown on Figure 7-1 to yield the Total 2036 Background Traffic Volumes, shown on Figure 7-2.

## 7.4 2036 Background Capacity Analysis Results

Table 7-1 summarizes the 2036 background intersection LOS, delay, 95$^{th}$ percentile (Synchro and Sidra), and maximum (SimTraffic) queue lengths based on the 2036 background peak hour traffic volumes shown on Figure 7-2, the future lane geometry (Figure 2-2), and the existing timings at the traffic signals. The corresponding SYNCHRO and SIDRA worksheets are included in Appendix H.

As shown in Table 7-1, under 2036 background conditions:

- At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95$^{th}$ percentile and maximum queue lengths.

- At the unsignalized intersection of Old Lynchburg Road and Sunset Ave. Ext./Private Entrance, the eastbound approach will operate at a C/E during the AM/PM peaks, respectively. All other movements and approaches operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95$^{th}$ percentile and maximum queue lengths.

- At the roundabout intersection of Old Lynchburg Road/5$^{th}$ Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. The eastbound approach will operate at a LOS D during the PM peak. All other turning movements

will operate at a LOS B or better during both AM/PM peaks. All turning movements have adequate storage to accommodate 95th percentile queue lengths.

- At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
  - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB left maximum queue backs up past the storage for the EB right effectively blocking both lanes.
  - The westbound approach is over capacity during both peak hours (LOS F). The WB right will operate at a LOS E during the AM peak and LOS B during the PM peak. During both peak hours, the WB left maximum queue backs up past the storage for the WB right and backs up through the intersection with Oak Hill Drive.
  - During the AM peak, the southbound left maximum queue exceeds the available storage spilling back into the through lanes. All other turning movements and approaches will operate at a LOS C or better during both peak hours. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The overall intersection is over capacity during both AM and PM (LOS F) peaks.
  - The eastbound approach is over capacity during both peak hours (LOS F). During both peak hours, the maximum queue is expected to back up onto mainline I-64 eastbound. During both peak hours, the eastbound left maximum queue backs up past the available storage for the eastbound right.
  - The northbound approach is over capacity during both AM and PM (LOS F) peaks. During the PM peak, the northbound approach maximum queue backs up reaching the adjacent intersection of Stagecoach Road/Afton Pond Court.
  - The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection will operate at a LOS E/F during the AM/PM peaks, respectively.
  - The westbound approach is over capacity during both peak hours (LOS F). The northbound left and through movement will operate at a LOS C or better during both peak hours.
  - The southbound approach is over capacity during both the peak hours (LOS F). During the PM peak, the southbound thru maximum queue backs up through the adjacent intersection at the Holiday Inn.
  - All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

# Table 7-1: Intersection Level of Service and Delay Summary

## 2036 Total Background Peak Hour Traffic

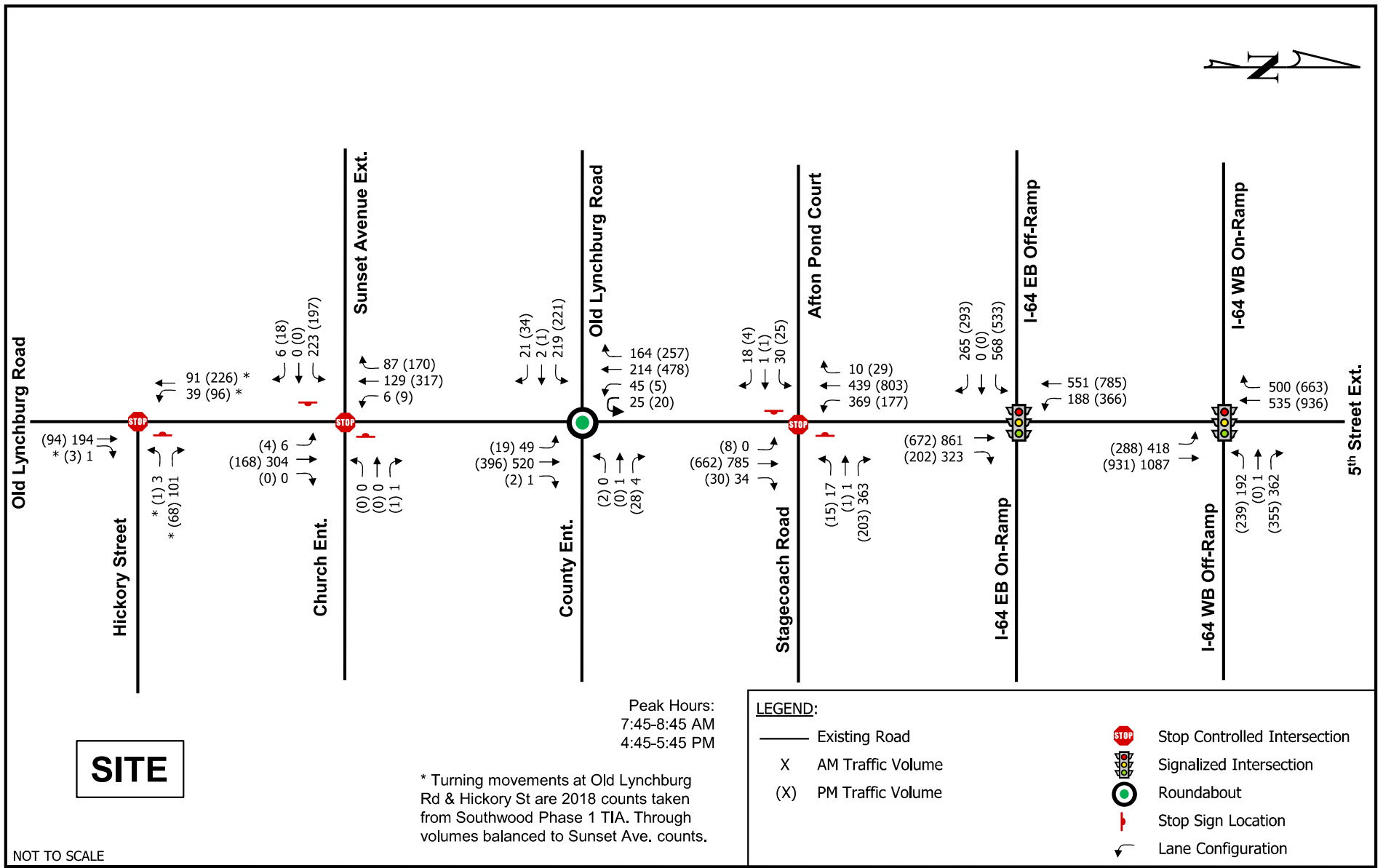
| Intersection and Type of Control | Movement and Approach | Effective Turn Lane Storage (ft) | AM PEAK HOUR | | | | PM PEAK HOUR | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Delay [1] (sec/veh) | LOS [1] | Synchro/Sidra 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) | Delay [1] (sec/veh) | LOS [1] | Synchro/Sidra 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) |
| 1. Old Lynchburg Road (N-S) and Hickory Street (W) Unsignalized | *WB Approach* | | *11.5* | *B* | 23 | 88 | *10.4* | *B* | 18 | 84 |
| | NB Thru - Right | | † | † | -- | -- | † | † | -- | |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 295 | 8.2 | A | 6 | 73 | 7.9 | A | 12 | 61 |
| | SB Thru | | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 2. Old Lynchburg Road (N-S) and Church Entrance (W) / Sunset Avenue Ext. (E) Unsignalized | *EB Approach* | | *22.1* | *C* | 62 | 179 | *35.1* | *E* | 96 | 147 |
| | *WB Approach* | | *9.6* | *A* | 0 | 14 | *9.1* | *A* | 0 | 8 |
| | NB Left | 250 | 7.9 | A | 0 | 20 | 8.9 | A | 0 | 26 |
| | NB Thru-Right | | † | † | -- | -- | † | † | -- | 5 |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 290 | 8.2 | A | 0 | 20 | 7.9 | A | 0 | 15 |
| | SB Thru | | † | † | -- | -- | † | † | -- | 2 |
| | SB Right | 330 | † | † | -- | 2 | † | † | -- | 8 |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 3. Old Lynchburg Road (NB) / 5th Street Extended (SB) and County Complex (WB) / Old Lynchburg Road (EB) Roundabout | *EB Approach* | | *12.1* | *B* | 86 | -- | *27.0* | *D* | 221 | -- |
| | *WB Approach* | | *9.3* | *A* | 0 | -- | *9.5* | *A* | 7 | -- |
| | NB Left - Thru | | 10.8 | B | 79 | -- | 9.5 | A | 59 | -- |
| | NB Thru - Right | | 10.5 | B | 80 | -- | 9.0 | A | 62 | -- |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left - Thru | | 8.2 | A | 69 | -- | 13.7 | B | 194 | -- |
| | SB Right | | 7.1 | A | 40 | -- | 8.6 | A | 63 | -- |
| | *SB Approach* | | *7.7* | *A* | -- | -- | *12.1* | *B* | -- | -- |
| | **Overall** | | **9.8** | **A** | -- | -- | **13.9** | **B** | **--** | **--** |
| 4. 5th Street Extended (N-S) and Stagecoach Road (W) / Afton Pond Court (E) Unsignalized | EB Left - Thru | | 6878.4 | F | 117 | 289 | 645.8 | F | 72 | 180 |
| | EB Right | 115 | 11.1 | B | 2 | 115 | 12.8 | B | 0 | 51 |
| | *EB Approach* | | *4355.7* | *F* | -- | -- | *561.4* | *F* | -- | -- |
| | WB Left - Thru | | 763.5 | F | 66 | 792 | 247.6 | F | 37 | 560 |
| | WB Right | 100 | 42.0 | E | 172 | 100 | 14.9 | B | 25 | 100 |
| | *WB Approach* | | *74.1* | *F* | -- | -- | *35.7* | *E* | -- | -- |
| | NB Left | 265 | 0.0 | A | 0 | -- | 10.7 | B | 0 | 31 |
| | NB Thru | | † | † | -- | 36 | † | † | -- | 88 |
| | NB Right | 300 | † | † | -- | 23 | † | † | -- | 25 |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 300 | 17.7 | C | 92 | 300 | 12.3 | B | 23 | 172 |
| | SB Thru | | † | † | -- | 486 | † | † | -- | 23 |
| | SB Right | 290 | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 5. 5th Street Extended (N-S) and I-64 EB Off-Ramp (E) Signalized | EB Left - Thru | | 184.1 | F | #673 | 1127 | 127.7 | F | #588 | 1160 |
| | EB Right | 500 | 43.7 | D | 165 | 500 | 47.0 | D | 22 | 500 |
| | *EB Approach* | | *134.0* | *F* | -- | -- | *95.8* | *F* | | -- |
| | NB Thru - Right | | 210.1 | F | #725 | 1027 | 172.1 | F | #574 | 1414 |
| | *NB Approach* | | *201.5* | *F* | -- | -- | *170.9* | *F* | -- | -- |
| | SB Left | 245 | 20.9 | C | 83 | 192 | 17.0 | B | 159 | 240 |
| | SB Thru | | 0.0 | A | 77 | 96 | 0.1 | A | 74 | 224 |
| | *SB Approach* | | *4.5* | *A* | -- | -- | *4.8* | *A* | -- | -- |
| | **Overall** | | **126.3** | **F** | -- | -- | **84.8** | **F** | **--** | **--** |
| 6. 5th Street Extended (N-S) at I-64 WB Off-Ramp (W) Signalized | WB Left - Thru | | 37.4 | D | #243 | 286 | 46.8 | D | #308 | 324 |
| | WB Right | 450 | 147.7 | F | #344 | 339 | 121.2 | F | #314 | 299 |
| | *WB Approach* | | *103.6* | *F* | -- | -- | *87.6* | *F* | -- | -- |
| | NB Left | 140 | 19.7 | B | 179 | 140 | 23.6 | C | 136 | 139 |
| | NB Thru | | 0.1 | A | 109 | 398 | 0.1 | A | 35 | 281 |
| | *NB Approach* | | *5.6* | *A* | -- | -- | *5.9* | *A* | -- | -- |
| | SB Thru - Right | | 115.2 | F | #468 | 670 | 243.4 | F | #816 | 1390 |
| | *NB Approach* | | *112.3* | *F* | -- | -- | *214.8* | *F* | -- | -- |
| | **Overall** | | **59.2** | **E** | -- | -- | **115.0** | **F** | **--** | **--** |

[1] *Overall intersection LOS and delay cannot be reported for unsignalized intersections.*

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

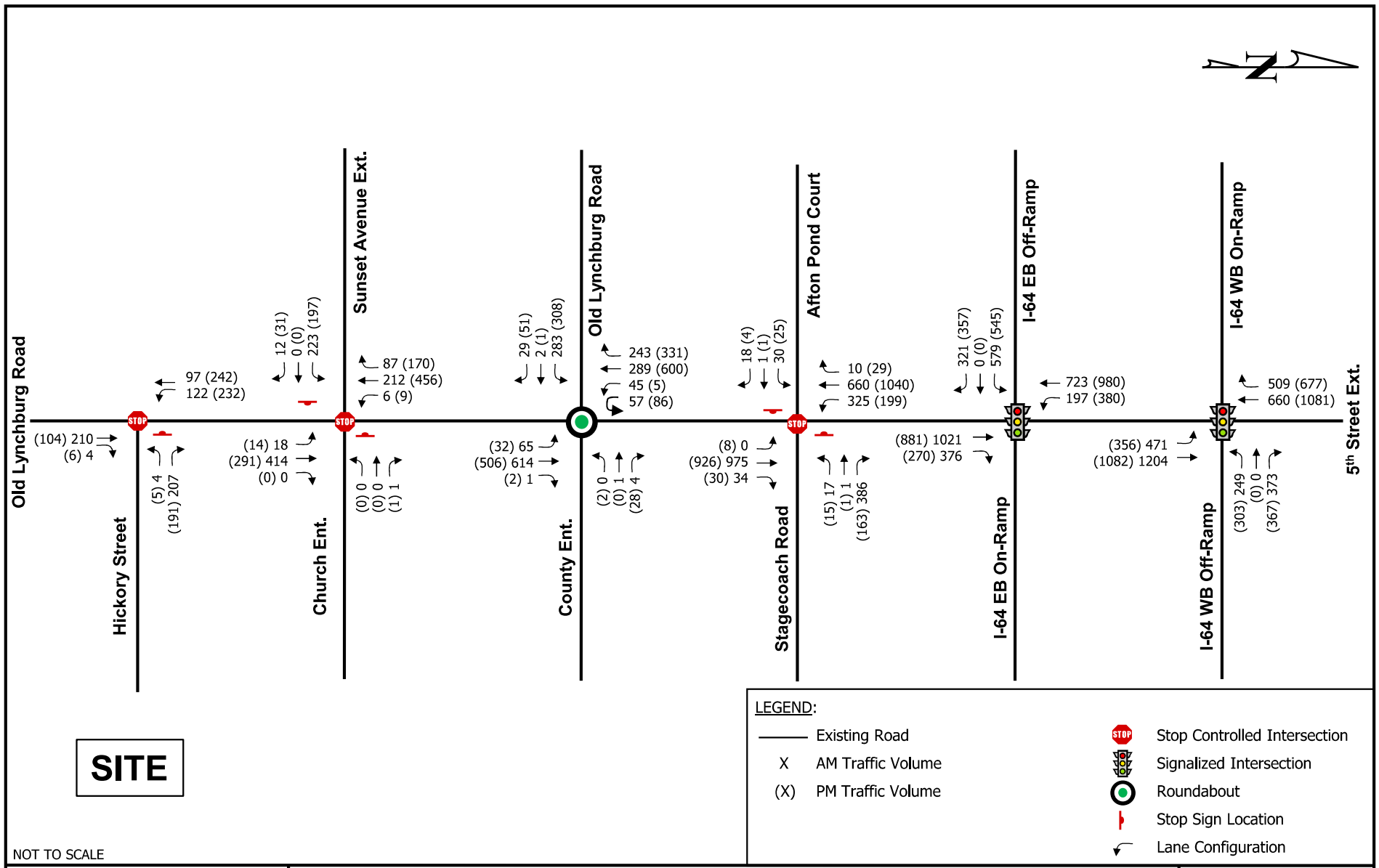
SimTraffic queues are average maximum queues after 10 runs of 60 minutes each.




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# Southwood Phase 2 TIA
# 2036 Existing + Growth Peak Hour Volumes
# Albemarle County, Virginia

Figure
7-1




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# Southwood Phase 2 TIA
# 2036 Total Background Peak Hour Volumes
# Albemarle County, Virginia

Figure
7-2

# 8 2036 TOTAL FUTURE CONDITIONS

To complete the analysis of the 2036 total conditions (with Phase 2 of the proposed development), the estimated site trips were added to the background 2036 volumes. The projected volumes were then used to complete the capacity analysis.

## 8.1 TOTAL FUTURE TRAFFIC VOLUMES

To generate the 2036 total future traffic volumes, the Phase 2 external site trips shown on Figure 5-3 were added to the background 2036 traffic volumes shown on Figure 7-2. The resulting 2036 total future traffic volumes are shown on Figure 8-1.

## 8.2 2036 TOTAL CAPACITY ANALYSES

Table 9-1 summarizes the 2036 total future intersection LOS, delay, 95th percentile (Synchro) queue lengths, and the maximum (SimTraffic) queue lengths based on the 2036 total future traffic volumes shown on Figure 8-1, the future lane geometry (Figure 2-2), and the existing traffic signal timings. The corresponding SYNCHRO and SIDRA worksheets are included in Appendix I.

Note that Route 631 (5th Street Extension and Old Lynchburg Road) is assumed to run north-south through the study area. Also note that the overall intersection LOS and delay cannot be reported for unsignalized intersections.

As shown in Table 9-1, under 2036 total future conditions the intersections will operate at comparable capacity and queuing levels as under background conditions. Specifically:

- At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. The southbound left will operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Extended, the eastbound approach will operate at a LOS E/F during the AM/PM peaks, respectively. All other turning movements and approaches will operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

- At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. All movements will operate at a LOS B or better during both peak hours except the eastbound approach will operate at a LOS C during the PM peak. Adequate storage exists to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
    - The eastbound approach is over capacity during both peak hours (LOS F). The EB left maximum queue backs up past the storage for the EB right effectively blocking the lane.
    - The westbound left is over capacity during both peak hours (LOS F). The WB right will operate at a LOS F during the AM peak and LOS C during the PM peak. During both peak hours, the WB left maximum queue backs up past the storage for the WB right and backs up through the intersection with Oak Hill Drive.
    - The north- and southbound turning movements and approaches will operate at a LOS C or better during both peak hours. During the AM peak, the SB left maximum queue

exceeds the available storage. All other turning movements have adequate turn bay storage to accommodate 95th percentile and maximum queues.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The overall intersection is over capacity during both peak hours (LOS F).
  - The eastbound approach is over capacity during both peaks (LOS F). During both Peak hours, the EB approach maximum queue will back up onto mainline I-64 eastbound.
  - The northbound approach is over capacity during both peak hours (LOS F). The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection is over capacity during both AM (LOS E) and PM (LOS F) peaks.
  - The westbound approach is over capacity during both peak hours (LOS F). The northbound left will operate at a LOS C during both peak hours. During both peak hours, the NB left maximum queue exceeds the available storage, spilling back into through lanes.
  - The southbound approach is over capacity during both peak hours (LOS F) and the maximum queue backs up through the adjacent intersection at the Holiday Inn. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

# Table 8-1: Intersection Level of Service and Delay Summary
## 2036 Total Future Traffic

| Intersection and Type of Control | Movement and Approach | Effective Turn Lane Storage (ft) | AM PEAK HOUR | | | | PM PEAK HOUR | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Delay [1] (sec/veh) | LOS [1] | Synchro/Sidra 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) | Delay [1] (sec/veh) | LOS [1] | Synchro/Sidra 95th Percentile Queue Length (ft) | SimTraffic Max Queue Length (ft) |
| 1. Old Lynchburg Road (N-S) and | *WB Approach* | | *14.3* | *B* | 57 | 88 | *13.1* | *B* | 49 | 85 |
| Hickory Street (W) | NB Thru - Right | | † | † | -- | -- | † | † | -- | -- |
| Unsignalized | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 295 | 8.5 | A | 14 | 73 | 8.5 | A | 25 | 62 |
| | SB Thru | | † | † | -- | -- | † | † | -- | -- |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 2. Old Lynchburg Road (N-S) and | *EB Approach* | | *44.5* | *E* | 212 | 179 | *147.6* | *F* | 238 | 172 |
| Church Entrance (W) / | *WB Approach* | | *10.1* | *B* | 0 | 14 | *9.6* | *A* | 0 | 12 |
| Sunset Avenue Ext. (E) | NB Left | 250 | 8.2 | A | 2 | 20 | 9.7 | A | 2 | 21 |
| Unsignalized | NB Thru-Right | | † | † | -- | -- | † | † | -- | 2 |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 290 | 8.6 | A | 0 | 20 | 8.3 | A | 0 | 23 |
| | SB Thru | | † | † | -- | -- | † | † | -- | -- |
| | SB Right | 330 | † | † | -- | 2 | † | † | -- | 10 |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 3. Old Lynchburg Road (NB) / | *EB Approach* | | *9.4* | *A* | 67 | -- | *23.1* | *C* | 211 | -- |
| 5th Street Extended (SB) and | *WB Approach* | | *7.4* | *A* | 1 | -- | *7.7* | *A* | 6 | -- |
| County Complex (WB) / | NB Left - Thru | | 8.5 | A | 75 | -- | 7.9 | A | 63 | -- |
| Old Lynchburg Road (EB) | NB Thru - Right | | 7.8 | A | 78 | -- | 7.0 | A | 66 | -- |
| Roundabout | *NB Approach* | | *8.3* | *A* | -- | -- | *7.5* | *A* | -- | -- |
| | SB Left - Thru | | 7.2 | A | 70 | -- | 12.6 | B | 201 | -- |
| | SB Right | | 6.1 | A | 35 | -- | 7.4 | A | 54 | -- |
| | *SB Approach* | | *6.8* | *A* | -- | -- | *11.0* | *B* | -- | -- |
| | **Overall** | | **7.9** | **A** | -- | -- | **12.0** | **B** | **--** | **--** |
| 4. 5th Street Extended (N-S) and | EB Left - Thru | | ** | ** | ** | 289 | 1707.0 | F | 88 | 151 |
| Stagecoach Road (W) / | EB Right | 115 | 11.1 | B | 2 | 115 | 13.8 | B | 0 | 79 |
| Afton Pond Court (E) | *EB Approach* | | ** | ** | ** | -- | *1481.2* | *F* | -- | -- |
| Unsignalized | WB Left - Thru | | 1555.5 | F | 68 | 792 | 612.8 | F | 51 | 508 |
| | WB Right | 100 | 76.9 | F | 263 | 100 | 17.4 | C | 37 | 100 |
| | *WB Approach* | | *137.9* | *F* | -- | -- | *64.3* | *F* | -- | -- |
| | NB Left | 265 | 0.0 | A | 0 | 0 | 11.5 | B | 0 | 31 |
| | NB Thru | | † | † | -- | 36 | † | † | -- | 79 |
| | NB Right | 300 | † | † | -- | 23 | † | † | -- | 19 |
| | *NB Approach* | | † | † | -- | -- | † | † | -- | -- |
| | SB Left | 300 | 22.4 | C | 92 | 299 | 14.5 | B | 37 | 152 |
| | SB Thru | | † | † | -- | 486 | † | † | -- | -- |
| | SB Right | 290 | † | † | -- | -- | † | † | -- | 6 |
| | *SB Approach* | | † | † | -- | -- | † | † | -- | -- |
| 5. 5th Street Extended (N-S) and | EB Left - Thru | | 184.1 | F | #673 | 1127 | 127.7 | F | #588 | 1096 |
| I-64 EB Off-Ramp (E) | EB Right | 500 | 50.8 | D | 208 | 500 | 66.7 | E | #319 | 475 |
| Signalized | *EB Approach* | | *134.5* | *F* | -- | -- | *101.9* | *F* | | -- |
| | NB Thru - Right | | 277.1 | F | #828 | 1027 | 244.8 | F | #676 | 1383 |
| | *NB Approach* | | *261.7* | *F* | -- | -- | *241.1* | *F* | -- | -- |
| | SB Left | 245 | 20.9 | C | m74 | 192 | 17.0 | B | m140 | 241 |
| | SB Thru | | 0.1 | A | m85 | 96 | 0.1 | A | m79 | 199 |
| | *SB Approach* | | *4.2* | *A* | -- | -- | *4.4* | *A* | -- | -- |
| | **Overall** | | **154.0** | **F** | -- | -- | **111.2** | **F** | **--** | **--** |
| 6. 5th Street Extended (N-S) at | WB Left - Thru | | 40.5 | D | #276 | 286 | 66.0 | E | #372 | 280 |
| I-64 WB Off-Ramp (W) | WB Right | 450 | 147.7 | F | #344 | 339 | 121.2 | F | #320 | 277 |
| Signalized | *WB Approach* | | *102.7* | *F* | -- | -- | *94.3* | *F* | -- | -- |
| | NB Left | 140 | 23.0 | C | m180 | 140 | 25.4 | C | m137 | 139 |
| | NB Thru | | 0.1 | A | m97 | 398 | 0.1 | A | m31 | 296 |
| | *NB Approach* | | *6.6* | *A* | -- | -- | *6.5* | *A* | -- | -- |
| | SB Thru - Right | | 131.9 | F | #505 | 670 | 280.5 | F | #887 | 1388 |
| | *NB Approach* | | *128.1* | *F* | -- | -- | *245.3* | *F* | -- | -- |
| | **Overall** | | **61.4** | **E** | -- | -- | **129.1** | **F** | **--** | **--** |

[1] *Overall intersection LOS and delay cannot be reported for unsignalized intersections.*

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

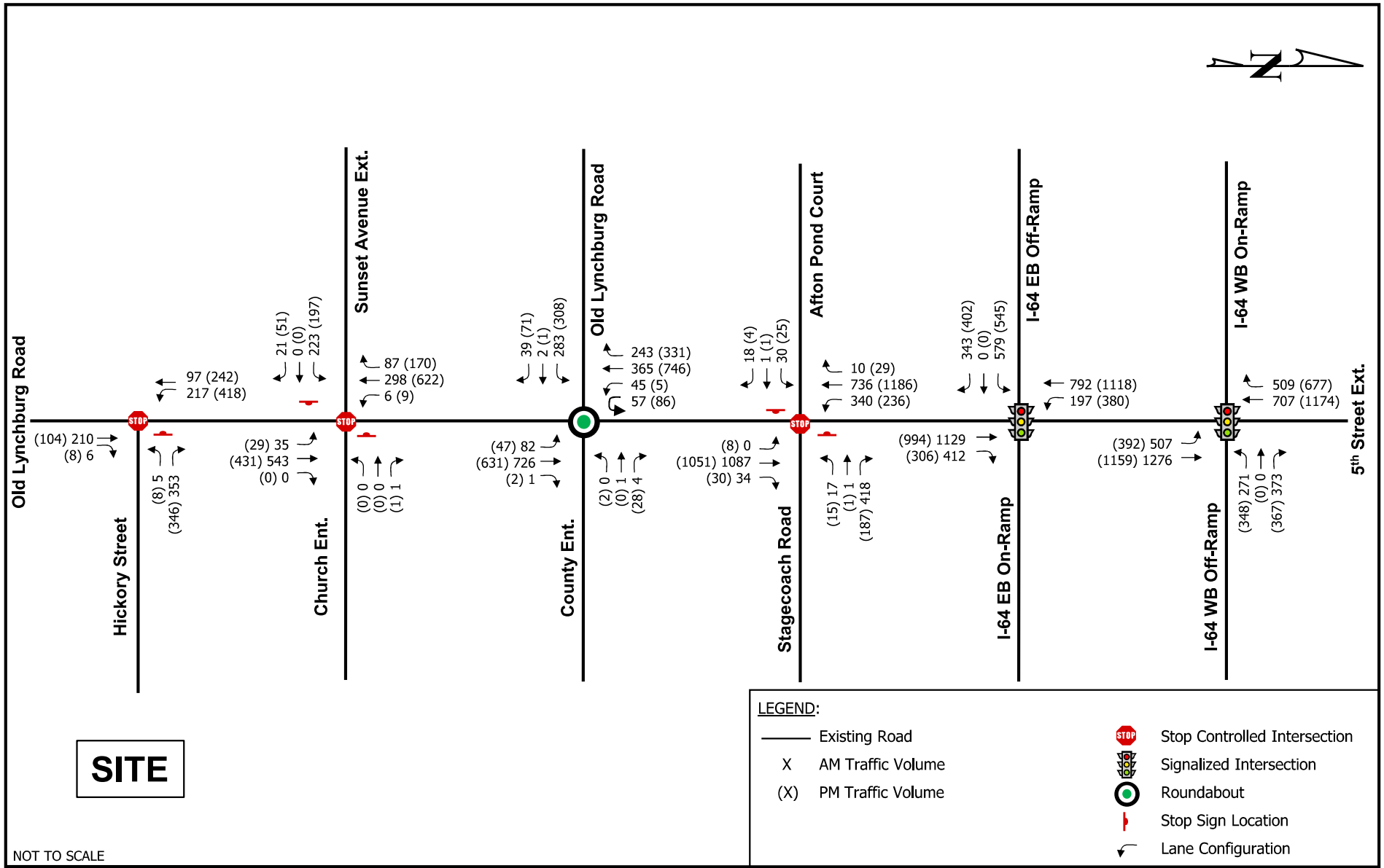
m Volume for 95th percentile queue is metered by upstream signal.

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

SimTraffic queues are average maximum queues after 10 runs of 60 minutes each.

* HCM 2000 used to determine LOS for this movement. V/C ratio is greatly exceeded.

** Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO.




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# Southwood Phase 2 TIA
# 2036 Total Future Peak Hour Volumes
# Albemarle County, Virginia

Figure
8-1

# 9 CONCLUSIONS AND RECOMMENDATIONS

As shown in 2030 and 2036 background conditions, many of the study intersections along the Old Lynchburg Road/5th Street Corridor experience capacity and queueing constraints. The additional traffic generated by the Southwood Phase 2 development will add to the delay but will not cause any new intersections to fail.

Albemarle County staff indicated that the intersection of Old Lynchburg Road and 5th Street Ext./County Complex would be reconstructed as a roundabout by the year 2030. The results of the analysis show that the roundabout improves congestion and delay at this intersection during future conditions.

The VDOT STARS study recommended the following additional improvements:

- 5th Street Extended & Stagecoach Road/Afton Pond Court: converted to a Restricted Crossing U-Turn (RCUT) intersection
- Old Lynchburg Road & 5th Street Extended: converted to a roundabout

Further, the STARS study recommended further study of the 5th Street / I-64 interchange to determine the best solution to mitigate traffic congestion.

Specifically,

- Under 2021 existing conditions:
    - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, all turning movements operate at a LOS A during both AM and PM peak hours. Adequate turn bay storage exists to handle all 95th percentile and maximum queue lengths.
    - At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Ext./Private Entrance, the eastbound approach operates at a LOS B/C during the AM/PM peaks, respectively. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to handle all 95th percentile and maximum queue lengths.
    - At the unsignalized intersection of Old Lynchburg Road/5th Street/County Complex, the eastbound approach and left movement operate at a LOS D/E during the AM/PM peaks, respectively. The westbound left operates at a LOS C during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to handle all 95th percentile and maximum queue lengths.
    - At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
        - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB left maximum queue backs up past the storage for the EB right, effectively blocking both lanes.
        - The westbound left movement is over capacity during both peak hours (LOS F) and during the AM peak, the WB left maximum queue backs up past the storage for the WB right, effectively blocking both lanes.

  - The north- and southbound through and turning movements operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to handle 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The intersection currently operates at an overall LOS D/C during the AM/PM peaks, respectively. The eastbound approach is over capacity during the AM peak (LOS F) and PM peak (LOS E).
  - The northbound approach operates at a LOS E/D during the AM/PM peaks, respectively. Adequate turn bay storage exists to handle all 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The intersection currently operates at an overall LOS C/D during the AM/PM peaks, respectively. The westbound right operates at a LOS F/E during the AM/PM peaks, respectively.
  - The northbound left movement operates at a LOS B/C during the AM/PM peaks, respectively. The NB left 95th percentile queue exceeds the available storage, spilling back into through lanes.
  - The southbound approach operates at a LOS D/F during the AM/PM peaks, respectively. All other turning bays have adequate storage to handle 95th percentile and maximum queue lengths.

- Under 2030 background conditions with the 1% growth rate and traffic from four (4) background developments:

  - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the unsignalized intersection of Old Lynchburg Road and Sunset Ave. Ext./Private Entrance, the eastbound approach will operate at a LOS C/D during the AM/PM peaks, respectively. All other movements and approaches operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection operates at a LOS A/B during the AM/PM peaks, respectively. During the PM peak, the eastbound approach operates at a LOS C. All other movements operate at a LOS B or better during both peak hours. Adequate storage exists to accommodate 95th percentile queue lengths.

  - At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
    - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB through-left maximum queue backs up past the storage for the EB right, effectively blocking both lanes.
    - The westbound left is over capacity during both peak hours (LOS F). The WB right will operate at a LOS E/B during the AM/PM peaks, respectively. During both peak hours, the WB left maximum queue backs up past the storage for the WB right lane effectively blocking both lanes.

- All other turning movements and approaches will operate at a LOS C or better during both peak hours. All other turning movements have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The overall intersection is over capacity during both AM (LOS F) and PM (LOS E) peaks.
  - The eastbound approach is over capacity during both AM (LOS F) and PM (LOS E) peaks. During the AM peak, the EB approach maximum queue will back up onto mainline I-64 eastbound.
  - The northbound approach is over capacity during both peak hours (LOS F). The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection will operate at a LOS D/F during the AM/PM peaks, respectively.
  - The westbound approach is over capacity during both AM (LOS F) and PM (LOS E) peaks. The northbound left and through movement will operate at a LOS C or better during both peak hours.
  - The southbound approach is over capacity during both the AM and PM peaks (LOS F). During the PM peak, the SB thru maximum queue backs up through the nearby intersection at the Holiday Inn. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- Under 2030 total future conditions with the development of Phase 2 of the site the intersections will operate at comparable capacity and queuing levels as under background conditions. Specifically:

  - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, all turning movements and approaches will continue to operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Extended, the eastbound approach will operate at a LOS E/F during the AM/PM peaks, respectively. All other turning movements and approaches will operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. All movements will operate at a LOS B or better during both peak hours except the eastbound approach will operate at a LOS C during the PM peak. Adequate storage exists to accommodate 95th percentile and maximum queue lengths.

- At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
  - The eastbound approach is over capacity during both peak hours (LOS F). The EB left maximum queue backs up past the storage for the eastbound right effectively blocking both lanes.
  - The westbound left is over capacity during both peak hours (LOS F). The westbound right will operate at a LOS F/C during the AM/PM peaks, respectively. During both peak hours, the WB left maximum queue backs up past the storage for the westbound right effectively blocking both lanes.
  - The north- and southbound turning movements and approaches will operate at a LOS C or better during both peak hours. During the AM peak, the SB left maximum queue exceeds the available storage, spilling back into through lanes. All other turning movements have adequate turn bay storage to accommodate 95th percentile and maximum queues.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The overall intersection is over capacity during both peaks (LOS F).
  - The eastbound approach is over capacity during both peak hours (LOS F). During both peak hours, the EB maximum queue will back up onto mainline I-64 eastbound.
  - The northbound approach is over capacity during both AM and PM (LOS F) peaks.
  - The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection will operate at a LOS D/F during the AM/PM peaks, respectively.
  - The westbound approach is over capacity during both peaks (LOS F). The northbound left and through movement will operate at a LOS C or better during both peak hours. During both peak hours, the NB left maximum queue exceeds the available storage.
  - The southbound approach is over capacity during both the AM and PM peaks (LOS F). During both peak hours, the SB thru maximum queue backs up through the adjacent intersection at the Holiday Inn.
  - All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.
  -

- Under 2036 background conditions with the 1% growth rate and traffic from four (4) background developments:

  - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. All other movements operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

  - At the unsignalized intersection of Old Lynchburg Road and Sunset Ave. Ext./Private Entrance, the eastbound approach will operate at a C/E during the AM/PM peaks, respectively. All other movements and approaches operate at a LOS A during both peak

hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

- At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. The eastbound approach will operate at a LOS D during the PM peak. All other turning movements will operate at a LOS B or better during both AM/PM peaks. All turning movements have adequate storage to accommodate 95th percentile queue lengths.

- At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
  - The eastbound approach is over capacity during both peak hours (LOS F). During the AM peak, the EB left maximum queue backs up past the storage for the EB right effectively blocking both lanes.
  - The westbound approach is over capacity during both peak hours (LOS F). The WB right will operate at a LOS E during the AM peak and LOS B during the PM peak. During both peak hours, the WB left maximum queue backs up past the storage for the WB right and backs up through the intersection with Oak Hill Drive.
  - During the AM peak, the southbound left maximum queue exceeds the available storage spilling back into the through lanes. All other turning movements and approaches will operate at a LOS C or better during both peak hours. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
  - The overall intersection is over capacity during both AM and PM (LOS F) peaks.
  - The eastbound approach is over capacity during both peak hours (LOS F). During both peak hours, the maximum queue is expected to back up onto mainline I-64 eastbound. During both peak hours, the eastbound left maximum queue backs up past the available storage for the eastbound right.
  - The northbound approach is over capacity during both AM and PM (LOS F) peaks. During the PM peak, the northbound approach maximum queue backs up reaching the adjacent intersection of Stagecoach Road/Afton Pond Court.
  - The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
  - The overall intersection will operate at a LOS E/F during the AM/PM peaks, respectively.
  - The westbound approach is over capacity during both peak hours (LOS F). The northbound left and through movement will operate at a LOS C or better during both peak hours.
  - The southbound approach is over capacity during both the peak hours (LOS F). During the PM peak, the southbound thru maximum queue backs up through the adjacent intersection at the Holiday Inn.
  - All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

- Under 2036 total future conditions with development of phase 2 of the site the intersections will operate at comparable capacity and queuing levels as under background conditions. Specifically:

    - At the unsignalized intersection of Old Lynchburg Road and Hickory Street, the westbound approach will operate at a LOS B during both peak hours. The southbound left will operate at a LOS A during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

    - At the unsignalized intersection of Old Lynchburg Road and Sunset Avenue Extended, the eastbound approach will operate at a LOS E/F during the AM/PM peaks, respectively. All other turning movements and approaches will operate at a LOS B or better during both peak hours. Adequate turn bay storage exists to accommodate 95th percentile and maximum queue lengths.

    - At the roundabout intersection of Old Lynchburg Road/5th Street Ext./County Complex, the overall intersection will operate at a LOS A/B during the AM/PM peaks, respectively. All movements will operate at a LOS B or better during both peak hours except the eastbound approach will operate at a LOS C during the PM peak. Adequate storage exists to accommodate 95th percentile and maximum queue lengths.

    - At the unsignalized intersection of 5th Street Ext. and Stagecoach Road/Afton Pond Court:
        - The eastbound approach is over capacity during both peak hours (LOS F). The EB left maximum queue backs up past the storage for the EB right effectively blocking the lane.
        - The westbound left is over capacity during both peak hours (LOS F). The WB right will operate at a LOS F during the AM peak and LOS C during the PM peak. During both peak hours, the WB left maximum queue backs up past the storage for the WB right and backs up through the intersection with Oak Hill Drive.
        - The north- and southbound turning movements and approaches will operate at a LOS C or better during both peak hours. During the AM peak, the SB left maximum queue exceeds the available storage. All other turning movements have adequate turn bay storage to accommodate 95th percentile and maximum queues.

    - At the signalized intersection of 5th Street Ext. and I-64 EB on-off ramp:
        - The overall intersection is over capacity during both peak hours (LOS F).
        - The eastbound approach is over capacity during both peaks (LOS F). During both Peak hours, the EB approach maximum queue will back up onto mainline I-64 eastbound.
        - The northbound approach is over capacity during both peak hours (LOS F). The southbound left will operate at a LOS C/B during the AM/PM peaks, respectively. All other turning movements and approaches have adequate storage to accommodate 95th percentile and maximum queue lengths.

    - At the signalized intersection of 5th Street Ext. and I-64 WB on-off ramp:
        - The overall intersection is over capacity during both AM (LOS E) and PM (LOS F) peaks.
        - The westbound approach is over capacity during both peak hours (LOS F). The northbound left will operate at a LOS C during both peak hours. During both peak hours, the NB left maximum queue exceeds the available storage, spilling back into through lanes.

- The southbound approach is over capacity during both peak hours (LOS F) and the maximum queue backs up through the adjacent intersection at the Holiday Inn. All other turning movements and approaches have adequate storage to accommodate 95$^{th}$ percentile and maximum queue lengths.

# Appendix A
# Response to Comments/ Scoping Documents

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To: Kevin McDermott, PE (Albemarle) and
Doug McAvoy, Jr., PE (VDOT)
From: Steve Schmidt, PE, PTOE (Timmons Group)
RE: Southwood Phase 2 TIA Response to County/VDOT Comments
Date: February 18, 2022

---

Timmons Group prepared a Traffic Impact Analysis (TIA) dated October 13, 2021 for the/Southwood Phase 2 project located in Albemarle County, Virginia. The project is County case number ZMA2021-00013.

The Albemarle County Community Development Department, Transportation Planning (CDD) issued comments on the TIA/rezoning on December 15, 2021 and the Virginia Department of Transportation (VDOT) issued comments on December 14, 2021.

Timmons Group (TG) has reviewed CDD/VDOT's comments (**in bold below**) and prepared the responses below. As a result of the comments/responses, a revised TIA has been prepared and is submitted with these responses.

Our responses to CDOT comments are as follows:

**CDD Comments**

**The Albemarle County Community Development Department, Planning Division, Transportation Planning has reviewed the above referenced resubmitted application plan and associated traffic impact analysis by Habitat for Humanity/Southwood and Timmons Group (March 2021) and offers the following comments:**

1. **It doesn't appear that any trips were assigned to Hickory Street in the analysis which may have been an oversight when the scoping meeting was held for this TIA. It seems that some percentage should be assumed to utilize that as roadway for trips to and from the development. Can an assumption for that distribution be developed and discussed in this study? I don't believe any intersection analysis is necessary, but volumes would be helpful.**

   TG Response: 20% of the projected residential site trips will access the site via Hickory Street to Oak Hill Drive to Stagecoach Road. This was not discussed textually in Section 5.3, however, this distribution is shown in Figure 5-1. The text of the report will be revised for clarification.

2. **The statement that "traffic from the proposed development does not have a significant impact on the surrounding network" seems to a be an inaccurate conclusion.**
    - **Currently Old Lynchburg Road/Fifth St Extended carries a range of just over 8,000 vpd in the southern segment of the corridor to 15,000 near the interchange. Phase 1 and Phase 2 of the Southwood Development will add an estimated 10,483 additional vehicles to the corridor more than doubling the level of traffic on Old Lynchburg near the site (~7,000 new trips from Phase 2). The Corridor is already strained under the current conditions and this very significant increase will likely result in it becoming nearly inoperable during the peak hours.**
    - **Sunset Ave EB will go from a 32 sec delay to a 169 sec delay in the pm, an increase of over 2 minutes.**

    TG Response: As shown in 2030 and 2036 background conditions (without the traffic from Southwood Phase 2), the Old Lynchburg Road/Fifth Street Extended corridor and the I-64 interchange are congested with the addition of the background developments (8,294 additional daily trips).

    The TIA has been revised to reflect the intended housing type (market rate vs. affordable) and the conclusions updated accordingly.

3. **Although future conditions at the intersections analyzed such as 5th St Extended/Stagecoach and 5th St Extended/ I-64 Ramps are projected to be failing without the development of Phase 2 of Southwood, the future build condition is still very concerning. The Fifth Street STARS Study performed by VDOT made recommendations to improve these intersections. However, the Conclusions and Recommendations Section does not reference any of those or other recommendations. It is important for staff to understand if the previously recommended options to address these conditions are still valid with the addition of the traffic from Southwood Phase 2.**

    TG Response: Many of the improvements included in the VDOT Fifth Street STARS Study were not analyzed in this TIA because they are not funded or in the conceptual stage. In addition, the STARS Study did not comment on what improvements could be made at the Fifth Street/I-64 interchange; stating that further study of the interchange is necessary.

    The intersection of Old Lynchburg Road/Fifth Street Extended/County Complex was analyzed as a roundabout with the same intersection geometry as proposed in the VDOT Fifth Street STARS Study. This intersection design can accommodate the background developments and Southwood Phase 2 site trips with acceptable levels of service.

4. **The Conclusions and Recommendations Section also discusses the issues of congestion on the Corridor but does not include any recommendation to address these problems.**

TG Response: The site's primary entrance at Hickory Street and Old Lynchburg Road performs with acceptable levels of service with the addition of the site traffic. The corridor is already experiencing capacity constraints prior to the construction of Southwood Phase 2. Several improvements are suggested by the VDOT Fifth Street STARS Study and as it notes the I-64 interchange requires further study to determine potential improvements. Any further recommendations are out of the scope of this report.

**Application Plan/Code of Development/Proffer Statement Comments:**

1. **The Transit Stop Proffer identifies a single transit stop to be constructed within the Hickory Street Overlay or the Neighborhood Center Special Area. Staff recommends specifying what this transit stop will include such as bench, shelter, etc.**

   TG Response: See the revised proffer statement.

2. **It is likely that this development will support more than one transit stop based on the size, density, and transit propensity. Staff recommends considering how transit will fit in to the development beyond the proffer of a single stop.**

   TG Response: See the revised proffer statement.

3. **All waivers, exceptions, etc. to allow different street, sidewalk, shared-use path designs beyond what is required by VDOT/County will need to be reviewed at the site plan stage for necessary approvals.**

   TG Response: Noted. No response/revision required.

**VDOT Comments:**

**Traffic Impact Analysis Comments:**

**1. Provide all Synchro files with the TIA so that the review of the operational analyses can be complete.**

TG Response: Synchro files will be provided.

**2. We need to see the overall Level of Service for the unsignalized intersections. Perhaps using the delay and volume for each movement to estimate the overall average delay for the intersection.**

TG Response: The Highway Capacity Manual (HCM) does not provide a calculation or means to report overall delay for unsignalized intersections. Further, ITE standards, VDOT Chapter 527 regulations, and VDOT TOSAM requirements do not allow for a means to report overall delay for

unsignalized intersections.

**3. The title (naming) for Figure 4-1 is confusing, can this be renamed to something like "Year 2030 Background Volumes"?**

TG Response: Figure 4-1 shows the traffic volumes generated by growing the 2021 existing traffic counts to the year 2030 (Existing + Growth). Figure 4-4 is the sum of the existing traffic+ growth (Figure 4-1) and the trips from other approved developments (Figure 4-3). The volumes in Figure 4-4 are the volumes used in the 2030 Background analysis.

**4. In Table 4-1, under background development 2 (Albemarle Business Park), can the numbers for Total Albemarle Business Park Retail & Office Trips be verified? These values (169, 80, 249, 104, 166 …) on that row seem confusing; they may need to be removed.**

TG Response: The line in question was a subtotal line only for all office/retail trips but has been removed for clarity. It is noted the Albemarle Business Park trips shown in Table 4-1 were correct and properly accounted for in the analysis.

**5. Please revise Figure 4-3 to ensure that the volumes match the data shown in Table 4-1 for both AM and PM peak hours, especially for the Albemarle Business Park and the 5th Street Extended developments. The trips did not seem to add up. This will affect Figures 4-4 and 6-1, which will need to be revised as well.**

TG Response: The figures have been revised.

**6. The volumes at the Old Lynchburg Road / Afton Pond Court are not adding up, please verify.**

TG Response: The volumes at the intersection have been checked and verified. It is noted there are other intersections (Pinehurst Court, Wahoo Way, and Windfield Cir) and driveways between Fifth Street/Afton Pond Court and the adjacent study intersection so the volumes may not balance between study intersections.

**7. Please ensure that the Synchro files are coded correctly as there seems to be some significant increase in delay at intersection #4 on Table 4-2 when compared to Table 3-3. For example, the volume on the WB approach has not changed, however, the delay on the WB left-turn movement has increased from 50.7 seconds in 2021 (existing condition) to 203.4 seconds in 2030 (background condition). The same remark for the EB approach, which seems to have experienced an increase of 4,310.9 seconds in delay.**

TG Response: The Synchro files are coded correctly. The increase in delay is due to the volume being greater than the capacity for that movement. When the volume to capacity (v/c) ratio is greater than 1 (over capacity), the delay that each vehicle experiences increases exponentially with each additional vehicle and may no longer be an accurate measure of delay.

**8. Please check the Level of Service and maximum queue lengths on Table 6-1, the traffic at intersection #1 in the SB left-turn lane was increased by over 50 percent with the project's trips added during the pm peak hour, yet the delay and queue lengths did not seem to be impacted.**

TG Response: The delay and maximum queue lengths are shown accurately in Table 6-1. The southbound left movement does not experience much additional delay with the addition of the site traffic because there is very low conflicting traffic. The northbound approach has about 200 vehicles per hour in both peak hours, providing ample gaps in traffic for the southbound left.

**9. At intersection #2 (Year 2030), it appears that the site traffic is affecting the EB approach considerably. The LOS has degraded from C to F, even with the volume remains the same for that EB approach. Any recommendations for improvement at this location?**

TG Response: The change in LOS for the eastbound approach is mostly caused by the addition of northbound and southbound through traffic. The VDOT Fifth Street STARS Study recommended a road diet at the intersection but further study may be required.

**10. Why has the delays/Level of Service (Year 2030) at intersection #3 improved with site traffic added?**

TG Response: The delays at Intersection #3 have improved slightly from 2030 Background to 2030 Total Conditions because the addition of the site traffic creates a better balance of traffic across the intersection. Roundabouts generally work best when the turning and through movements are similar (i.e. a roadway with high through volumes and small turning volumes is not an ideal application for a roundabout). This creates more gaps for traffic to enter the roundabout from each direction as the traffic moves through the roundabout, reducing the delay.

**11. Based on the operational analysis for Year 2030, at intersection #5, when the project's trips are added, the overall delay is anticipated to increase by 56 seconds during the AM peak and 26 seconds during the PM peak hour. Any recommendations for operational improvement at this intersection?**

TG Response: As noted by the VDOT Fifth Street STARS Study, the interchange requires further study which is outside the scope of this traffic study.

**12. Note that the final plan must show conformance with the VDOT Road Design Manual Appendices B(1) and F, as well as any other applicable standards, regulations or other requirements.**

TG Response: Noted. No response/revision required.

# PRE-SCOPE OF WORK MEETING FORM

## Information on the Project
## Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

| **Contact Information** | | | |
|---|---|---|---|
| Consultant Name:<br>Tele:<br>E-mail: | Steve Schmidt, PE, PTOE (Timmons Group)<br>804-200-6502<br>steve.schmidt@timmons.com | | |
| Developer/Owner Name:<br>Tele:<br>E-mail: | Habitat for Humanity | | |
| **Project Information** | | | |
| Project Name: | Southwood - Phase 2 | Locality/County: | Albemarle County |
| Project Location:<br>(Attach regional and site specific location map) | The site is located east of Route 631 (Old Lynchburg Road) and south of Hickory Street as shown on Figure 1. | | |
| Submission Type | Comp Plan ☐ | Rezoning ☒ | Site Plan ☐ Subd Plat ☐ |
| Project Description:<br>(Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary) | The applicant is seeking to develop Phase 2 of the site by replacing the existing 341 mobile home units with 1,000 new dwelling units for a net increase of 659 units. 20,000 S.F. of commercial space is also included in Phase 2. Primary access to the site would be provided by the existing Route 631/Hickory Street intersection. No new connections to Route 631 are proposed.<br><br>A previous TIA was completed in 2019 for the site and included 500 dwelling units in Phase 2. The current proposal is a 500 unit increase over the previous TIA. See trip generation table for a comparison of trips.<br><br>This TIA will build off the previous TIA and will contain similar assumptions as to study intersections, background developments, growth rate, etc. | | |

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

| Proposed Use(s): (Check all that apply; attach additional pages as necessary) | Residential ☐ | Commercial ☐ | Mixed Use ☒ | Other ☐ |
|---|---|---|---|---|
| | **Residential Uses(s)**<br>Number of Units: 659<br>ITE LU Code(s): 220<br>210<br>_____<br>**Commercial Use(s)**<br>ITE LU Code(s): 820<br>710<br>_____<br>Square Ft or Other Variable: | | 20,000 S.F.<br>_____<br>_____<br>**Other Use(s)**<br>ITE LU Code(s): _____<br>_____<br>_____<br>Independent Variable(s): _____<br>_____<br>_____ | |
| Total Peak Hour Trip Projection: | Less than 100 ☐ | 100 – 499 ☒ | 500 – 999 ☐ | 1,000 or more ☐ |

## Traffic Impact Analysis Assumptions

| | | | |
|---|---|---|---|
| Study Period | Existing Year: 2021 | Build-out Year: 2030 | Design Year: 2036 |
| Study Area Boundaries (Attach map) | North: I-64 | South: Hickory Street | |
| | East: Hickory Street | West: Stagecoach Road | |
| External Factors That Could Affect Project (Planned road improvements, other nearby developments) | No road improvements are planned, but there is ongoing development along Route 631. The traffic study will assumed the following nine developments (consistent with the 2019 TIA)<br><br>a. Whittington (40 single-family D.U. and 4 multi-family D.U);<br>b. Wintergreen Farms (69 single-family D.U.);<br>c. Timberland Park (80 multi-family D.U.);<br>d. Sunset Overlook (35 single-family D.U.);<br>e. Royal Fern (26 single-family D.U. and 30 multi-family D.U.);<br>f. Fifth Street Place (116 multi-family D.U.);<br>g. Brookdale (96 multi-family D.U.);<br>h. 5th Street Development (27,500 SF commercial retail); and<br>i. Region Ten Women's Shelter (7,900 SF commercial retail). | | |
| Consistency With Comprehensive Plan (Land use, transportation plan) | The proposed uses are consistent with the surrounding uses. | | |
| Available Traffic Data (Historical, forecasts) | Historic VDOT ADT Traffic Data, AM/PM peak hour counts conducted at the study intersections in 2018. | | |

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

| | | | |
|---|---|---|---|
| Trip Distribution<br>(Attach sketch) | Road Name: 5th St Ext North: (90% Res/90% Com) | | Road Name: Old Lynchburg South: (0% Res/5% Com) |
| | Road Name: Old Lynchburg North: (10% Res/5% Com) | | Road Name: |
| Annual Vehicle Trip Growth Rate: | 1% | Peak Period for Study<br>(check all that apply) | ☒ AM ☒ PM ☐ SAT |
| | | Peak Hour of the Generator | |
| Study Intersections and/or Road Segments<br>(Attach additional sheets as necessary) | 1.Old Lynchburg Road/Hickory Street | | 6.5th Street Extended/I-64 WB Off Ramp |
| | 2.Old Lynchburg Road/Sunset Ave Extended/Church Ent. | | 7. |
| | 3.Old Lynchburg Road/5th Street Extended/County Complex | | 8. |
| | 4.5th Street Extended/Stagecoach Road/Apartment Complex | | 9. |
| | 5.5th Street Extended/I-64 EB Off Ramp | | 10. |
| Trip Adjustment Factors | Internal allowance: ☐ Yes ☒ No<br>Reduction: _____% trips | | Pass-by allowance: ☐ Yes ☒ No<br>Reduction: _____% trips |
| Software Methodology | ☒ Synchro ☐ HCS (v.2000/+) ☐ aaSIDRA ☐ CORSIM ☐ Other _____ | | |
| Traffic Signal Proposed or Affected<br>(Analysis software to be used, progression speed, cycle length) | 5th Street Extended/I-64 EB Off Ramp<br>5th Street Extended/I-64 WB Off Ramp | | |
| Improvement(s) Assumed or to be Considered | None | | |
| Background Traffic Studies Considered | 2019 TIA prepared for Southwood | | |
| Plan Submission | ☐ Master Development Plan (MDP) ☒ Generalized Development Plan (GDP)<br>☐ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan) | | |
| Additional Issues to be Addressed | ☒ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis<br>☐ Merge analysis ☐ Bike/Ped Accommodations ☐ Intersection(s)<br>☐ TDM Measures ☒ Other Turn Lane Warrants | | |

NOTES on ASSUMPTIONS: 1. The 2018 existing traffic counts will be used as the basis for the analysis and will be grown at 1%/year (mainline and 64-ramps only) to reach 2021 levels.

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

SIGNED: W. Scott Dunn DATE: July 12, 2021

Applicant or Consultant

PRINT NAME: W. Scott Dunn

Applicant or Consultant

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Table 1: Southwood Trip Generation

| LAND USE | ITE CODE | AMOUNT | UNITS | WEEKDAY ADT | AM PEAK HOUR IN | AM PEAK HOUR OUT | AM PEAK HOUR TOTAL | PM PEAK HOUR IN | PM PEAK HOUR OUT | PM PEAK HOUR TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| **Phase 1** | | | | | | | | | | |
| Residential | | | | | | | | | | |
| Apartments | 220[1] | 113 | D.U. | 813 | 12 | 42 | 54 | 42 | 24 | 66 |
| Single Family | 210 | 12 | D.U. | 148 | 3 | 10 | 13 | 8 | 5 | 13 |
| *Residential Subtotal* | | 125 | D.U. | *961* | *15* | *52* | *67* | *50* | *29* | *79* |
| Commercial | | | | | | | | | | |
| Retail | 820 | 20,000 | S.F. | 755 | 12 | 7 | 19 | 36 | 40 | 76 |
| Office | 710 | 20,000 | S.F. | 223 | 39 | 6 | 45 | 4 | 21 | 25 |
| *Commercial Subtotal* | | *40,000* | *S.F.* | *978* | *51* | *13* | *64* | *40* | *61* | *101* |
| Phase 1 Total | | | | 1,939 | 66 | 65 | 131 | 90 | 90 | 180 |
| **Phase 2** | | | | | | | | | | |
| Residential[2] | | | | | | | | | | |
| Apartments | 220[1] | 150 | D.U. | 1,093 | 16 | 54 | 70 | 54 | 31 | 85 |
| Townhomes | 220[1] | 749 | D.U. | 5,622 | 74 | 249 | 323 | 223 | 131 | 354 |
| Single Family | 210 | 99 | D.U. | 1,030 | 19 | 56 | 75 | 64 | 37 | 101 |
| *Residential Subtotal* | | 998 | D.U. | *7,745* | *109* | *359* | *468* | *341* | *199* | *540* |
| Commercial | | | | | | | | | | |
| Retail | 820 | 20,000 | S.F. | 755 | 12 | 7 | 19 | 36 | 40 | 76 |
| *Commercial Subtotal* | | *20,000* | *S.F.* | *755* | *12* | *7* | *19* | *36* | *40* | *76* |
| Phase 2 Total | | | | 8,500 | 121 | 366 | 487 | 377 | 239 | 616 |
| Southwood Total (Phase 1 + Phase 2) | | | | 10,439 | 187 | 431 | 618 | 467 | 329 | 796 |

Source: ITE Trip Generation, 10th Edition.

1. ITE includes townhomes and apartments in the same category with the 10th edition.
2. Phase 2 consists of 998 total units but will replace the existing 341 units currently on site for a net increase of 657 units.




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# Southwood Phase 2
# Site Location
# Albemarle County, Virginia

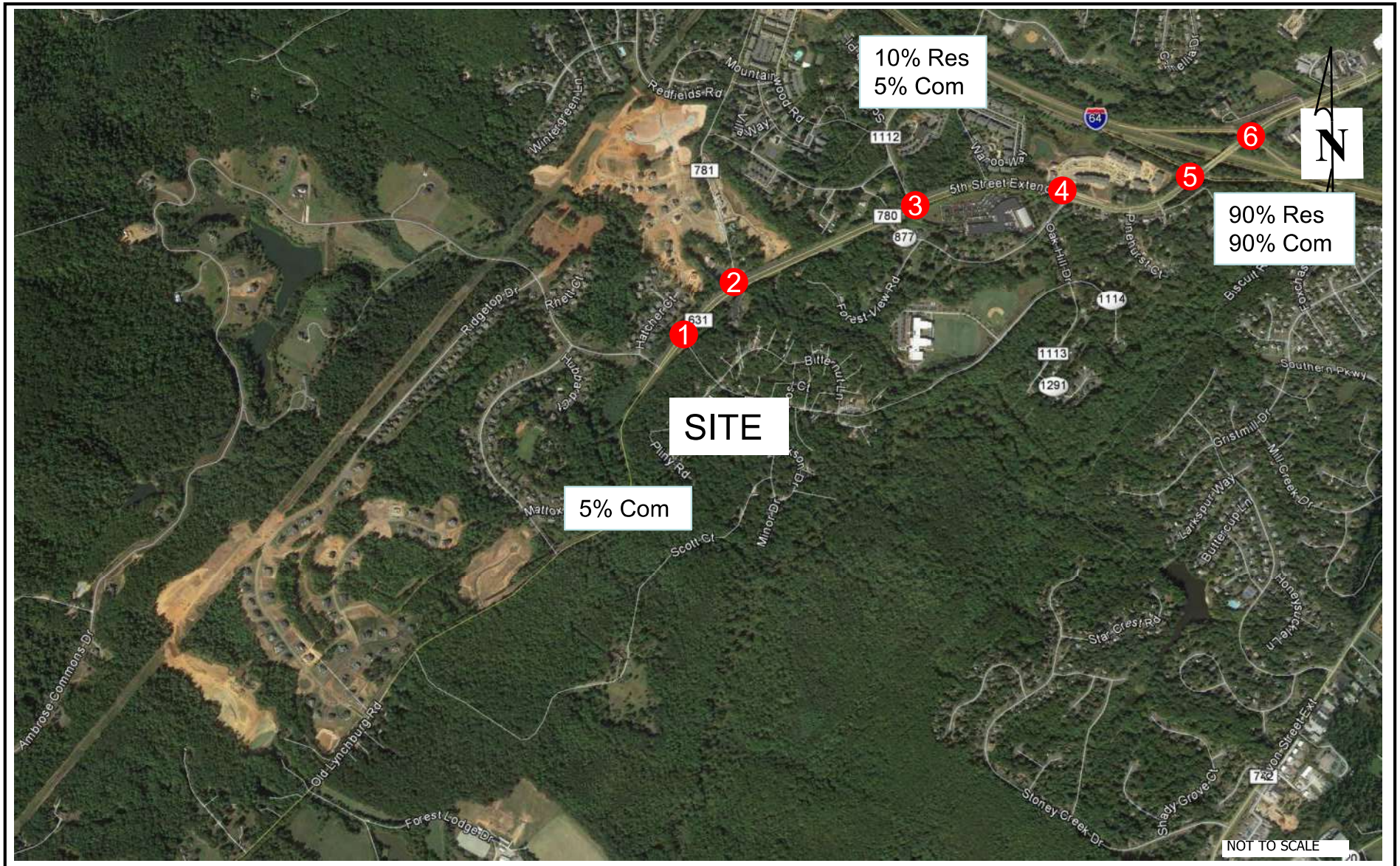
Figure
1




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# Southwood Phase 2
# Study Area Intersections
# Albemarle County, Virginia

Figure
2




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# Southwood Phase 2
# Proposed Site Trip Distributions
# Albemarle County, Virginia

Figure
3

# Appendix B
# Traffic Counts

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File Name : 5th and I64 WB
Site Code : 00765765
Start Date : 9/2/2021
Page No : 1

Groups Printed- Passenger Veh - Trucks

| | 5th St From North | | | | | I64 WB Off Ramp From East | | | | | 5th St From South | | | | | I64 WB On Ramp From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| 07:00 AM | 69 | 66 | 0 | 0 | 135 | 73 | 0 | 12 | 0 | 85 | 0 | 133 | 48 | 0 | 181 | 0 | 0 | 0 | 0 | 0 | 401 |
| 07:15 AM | 84 | 69 | 0 | 0 | 153 | 83 | 0 | 12 | 0 | 95 | 0 | 180 | 64 | 0 | 244 | 0 | 0 | 0 | 0 | 0 | 492 |
| 07:30 AM | 101 | 80 | 0 | 0 | 181 | 91 | 0 | 35 | 0 | 126 | 0 | 221 | 75 | 0 | 296 | 0 | 0 | 0 | 0 | 0 | 603 |
| 07:45 AM | 106 | 110 | 0 | 0 | 216 | 92 | 0 | 44 | 0 | 136 | 0 | 231 | 103 | 0 | 334 | 0 | 0 | 0 | 0 | 0 | 686 |
| Total | 360 | 325 | 0 | 0 | 685 | 339 | 0 | 103 | 0 | 442 | 0 | 765 | 290 | 0 | 1055 | 0 | 0 | 0 | 0 | 0 | 2182 |
| 08:00 AM | 115 | 126 | 0 | 0 | 241 | 83 | 0 | 50 | 0 | 133 | 0 | 233 | 77 | 0 | 310 | 0 | 0 | 0 | 0 | 0 | 684 |
| 08:15 AM | 101 | 134 | 0 | 0 | 235 | 83 | 0 | 42 | 0 | 125 | 0 | 236 | 97 | 0 | 333 | 0 | 0 | 0 | 0 | 0 | 693 |
| 08:30 AM | 109 | 91 | 0 | 0 | 200 | 54 | 0 | 29 | 0 | 83 | 0 | 236 | 83 | 0 | 319 | 0 | 0 | 0 | 0 | 0 | 602 |
| 08:45 AM | 105 | 117 | 0 | 0 | 222 | 70 | 0 | 27 | 0 | 97 | 0 | 199 | 54 | 0 | 253 | 0 | 0 | 0 | 0 | 0 | 572 |
| Total | 430 | 468 | 0 | 0 | 898 | 290 | 0 | 148 | 0 | 438 | 0 | 904 | 311 | 0 | 1215 | 0 | 0 | 0 | 0 | 0 | 2551 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 116 | 198 | 0 | 0 | 314 | 56 | 1 | 49 | 0 | 106 | 0 | 164 | 89 | 0 | 253 | 0 | 0 | 0 | 0 | 0 | 673 |
| 04:15 PM | 119 | 243 | 0 | 0 | 362 | 61 | 0 | 46 | 0 | 107 | 0 | 186 | 57 | 0 | 243 | 0 | 0 | 0 | 0 | 0 | 712 |
| 04:30 PM | 125 | 203 | 0 | 0 | 328 | 65 | 1 | 45 | 0 | 111 | 0 | 186 | 48 | 0 | 234 | 0 | 0 | 0 | 0 | 0 | 673 |
| 04:45 PM | 148 | 188 | 0 | 0 | 336 | 88 | 0 | 51 | 0 | 139 | 0 | 189 | 78 | 0 | 267 | 0 | 0 | 0 | 0 | 0 | 742 |
| Total | 508 | 832 | 0 | 0 | 1340 | 270 | 2 | 191 | 0 | 463 | 0 | 725 | 272 | 0 | 997 | 0 | 0 | 0 | 0 | 0 | 2800 |
| 05:00 PM | 157 | 196 | 0 | 0 | 353 | 65 | 0 | 54 | 0 | 119 | 0 | 207 | 56 | 0 | 263 | 0 | 0 | 0 | 0 | 0 | 735 |
| 05:15 PM | 143 | 212 | 0 | 0 | 355 | 87 | 0 | 50 | 0 | 137 | 0 | 208 | 57 | 0 | 265 | 0 | 0 | 0 | 0 | 0 | 757 |
| 05:30 PM | 123 | 210 | 0 | 0 | 333 | 66 | 0 | 51 | 0 | 117 | 0 | 198 | 57 | 0 | 255 | 0 | 0 | 0 | 0 | 0 | 705 |
| 05:45 PM | 102 | 199 | 0 | 0 | 301 | 62 | 1 | 45 | 0 | 108 | 0 | 187 | 42 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 638 |
| Total | 525 | 817 | 0 | 0 | 1342 | 280 | 1 | 200 | 0 | 481 | 0 | 800 | 212 | 0 | 1012 | 0 | 0 | 0 | 0 | 0 | 2835 |
| Grand Total | 1823 | 2442 | 0 | 0 | 4265 | 1179 | 3 | 642 | 0 | 1824 | 0 | 3194 | 1085 | 0 | 4279 | 0 | 0 | 0 | 0 | 0 | 10368 |
| Apprch % | 42.7 | 57.3 | 0 | 0 | | 64.6 | 0.2 | 35.2 | 0 | | 0 | 74.6 | 25.4 | 0 | | 0 | 0 | 0 | 0 | | |
| Total % | 17.6 | 23.6 | 0 | 0 | 41.1 | 11.4 | 0 | 6.2 | 0 | 17.6 | 0 | 30.8 | 10.5 | 0 | 41.3 | 0 | 0 | 0 | 0 | 0 | |
| Passenger Veh | 1776 | 2366 | 0 | 0 | 4142 | 1147 | 1 | 623 | 0 | 1771 | 0 | 3126 | 1070 | 0 | 4196 | 0 | 0 | 0 | 0 | 0 | 10109 |
| % Passenger Veh | 97.4 | 96.9 | 0 | 0 | 97.1 | 97.3 | 33.3 | 97 | 0 | 97.1 | 0 | 97.9 | 98.6 | 0 | 98.1 | 0 | 0 | 0 | 0 | 0 | 97.5 |
| Trucks | 47 | 76 | 0 | 0 | 123 | 32 | 2 | 19 | 0 | 53 | 0 | 68 | 15 | 0 | 83 | 0 | 0 | 0 | 0 | 0 | 259 |
| % Trucks | 2.6 | 3.1 | 0 | 0 | 2.9 | 2.7 | 66.7 | 3 | 0 | 2.9 | 0 | 2.1 | 1.4 | 0 | 1.9 | 0 | 0 | 0 | 0 | 0 | 2.5 |

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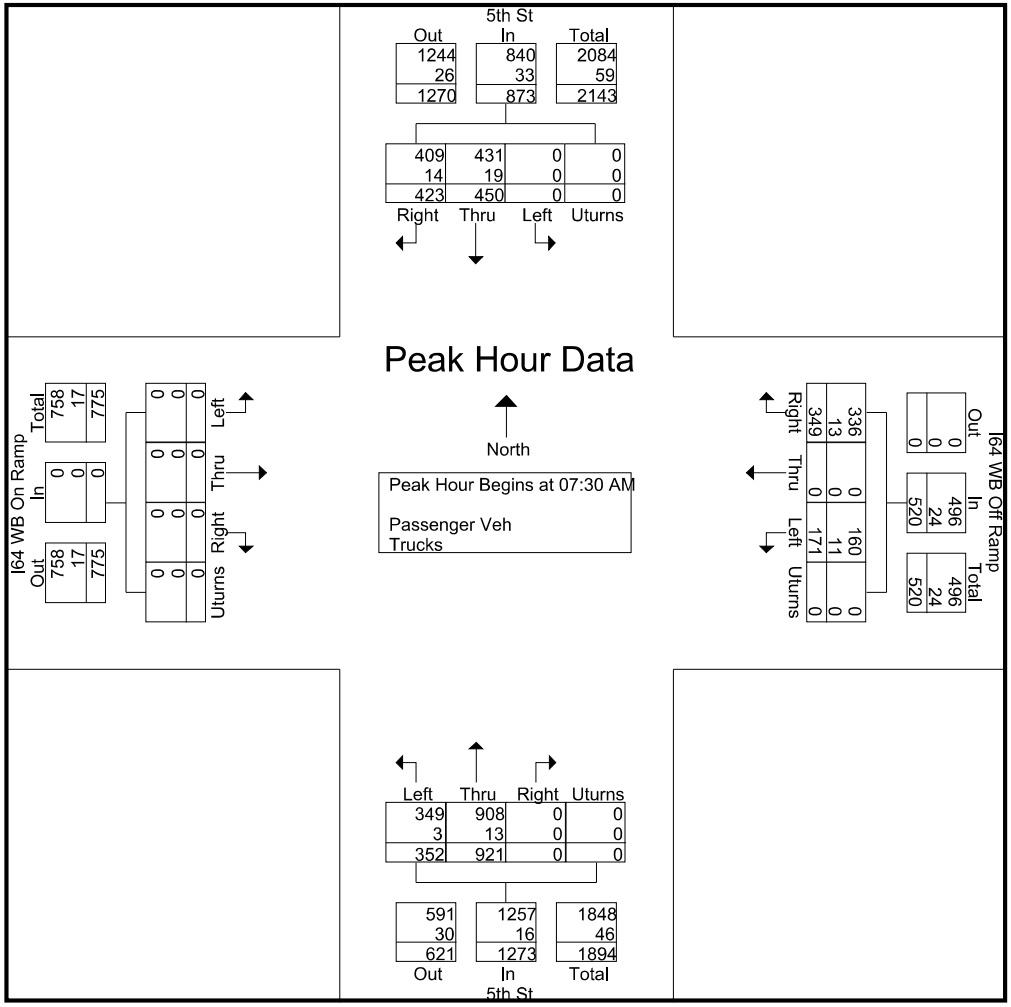
File Name : 5th and I64 WB
Site Code : 00765765
Start Date : 9/2/2021


| | 5th St From North | | | | | I64 WB Off Ramp From East | | | | | 5th St From South | | | | | I64 WB On Ramp From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 101 | 80 | 0 | 0 | 181 | 91 | 0 | 35 | 0 | 126 | 0 | 221 | 75 | 0 | 296 | 0 | 0 | 0 | 0 | 0 | 603 |
| 07:45 AM | 106 | 110 | 0 | 0 | 216 | **92** | 0 | 44 | 0 | **136** | 0 | 231 | **103** | 0 | **334** | 0 | 0 | 0 | 0 | 0 | 686 |
| 08:00 AM | **115** | 126 | 0 | 0 | **241** | 83 | 0 | **50** | 0 | 133 | 0 | 233 | 77 | 0 | 310 | 0 | 0 | 0 | 0 | 0 | 684 |
| 08:15 AM | 101 | **134** | 0 | 0 | 235 | 83 | 0 | 42 | 0 | 125 | 0 | **236** | 97 | 0 | 333 | 0 | 0 | 0 | 0 | 0 | **693** |
| Total Volume | 423 | 450 | 0 | 0 | 873 | 349 | 0 | 171 | 0 | 520 | 0 | 921 | 352 | 0 | 1273 | 0 | 0 | 0 | 0 | 0 | 2666 |
| % App. Total | 48.5 | 51.5 | 0 | 0 | | 67.1 | 0 | 32.9 | 0 | | 0 | 72.3 | 27.7 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .920 | .840 | .000 | .000 | .906 | .948 | .000 | .855 | .000 | .956 | .000 | .976 | .854 | .000 | .953 | .000 | .000 | .000 | .000 | .000 | .962 |
| Passenger Veh | 409 | 431 | 0 | 0 | 840 | 336 | 0 | 160 | 0 | 496 | 0 | 908 | 349 | 0 | 1257 | 0 | 0 | 0 | 0 | 0 | 2593 |
| % Passenger Veh | 96.7 | 95.8 | 0 | 0 | 96.2 | 96.3 | 0 | 93.6 | 0 | 95.4 | 0 | 98.6 | 99.1 | 0 | 98.7 | 0 | 0 | 0 | 0 | 0 | 97.3 |
| Trucks | 14 | 19 | 0 | 0 | 33 | 13 | 0 | 11 | 0 | 24 | 0 | 13 | 3 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 73 |
| % Trucks | 3.3 | 4.2 | 0 | 0 | 3.8 | 3.7 | 0 | 6.4 | 0 | 4.6 | 0 | 1.4 | 0.9 | 0 | 1.3 | 0 | 0 | 0 | 0 | 0 | 2.7 |

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File Name : 5th and I64 WB
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Start Date : 9/2/2021
Page No : 3



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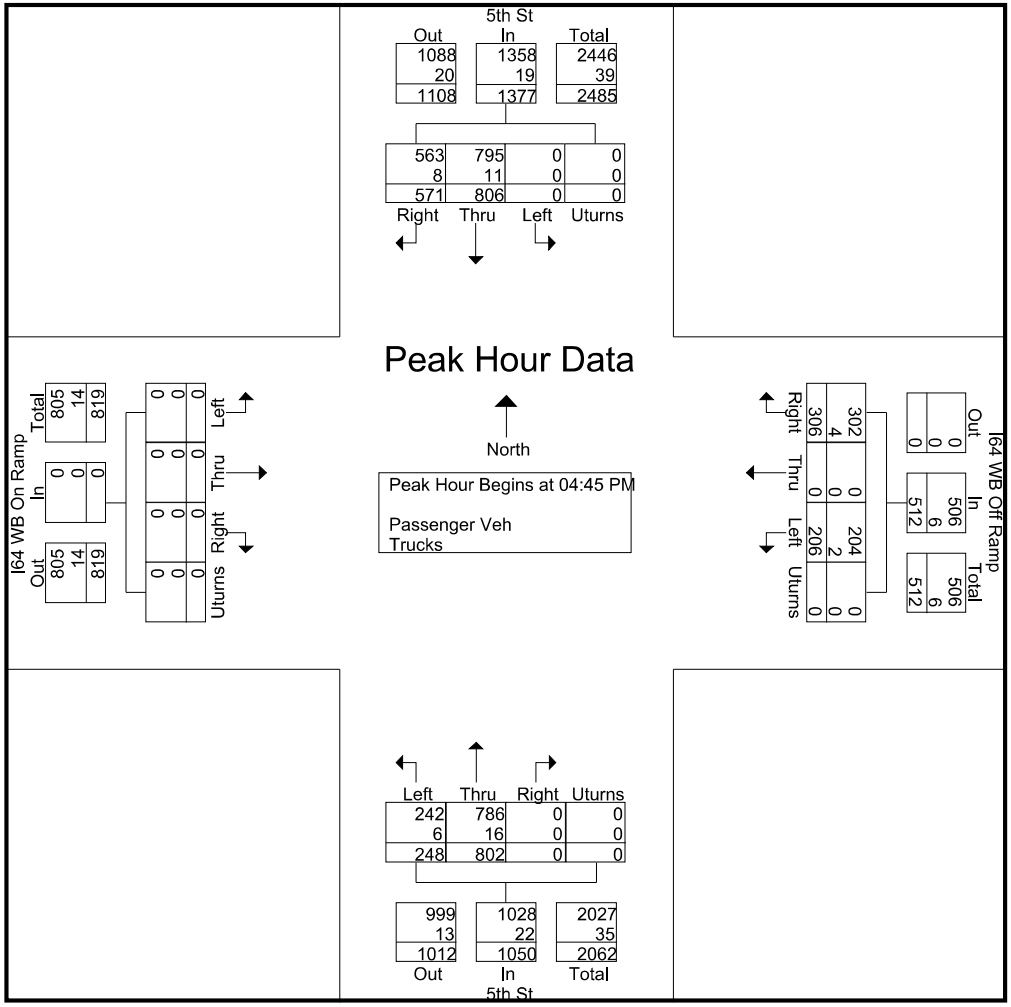
File Name : 5th and I64 WB
Site Code : 00765765
Start Date : 9/2/2021


| | 5th St From North | | | | | I64 WB Off Ramp From East | | | | | 5th St From South | | | | | I64 WB On Ramp From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 148 | 188 | 0 | 0 | 336 | **88** | 0 | 51 | 0 | **139** | 0 | 189 | **78** | 0 | **267** | 0 | 0 | 0 | 0 | 0 | 742 |
| 05:00 PM | **157** | 196 | 0 | 0 | 353 | 65 | 0 | **54** | 0 | 119 | 0 | 207 | 56 | 0 | 263 | 0 | 0 | 0 | 0 | 0 | 735 |
| 05:15 PM | 143 | **212** | 0 | 0 | **355** | 87 | 0 | 50 | 0 | 137 | 0 | **208** | 57 | 0 | 265 | 0 | 0 | 0 | 0 | 0 | **757** |
| 05:30 PM | 123 | 210 | 0 | 0 | 333 | 66 | 0 | 51 | 0 | 117 | 0 | 198 | 57 | 0 | 255 | 0 | 0 | 0 | 0 | 0 | 705 |
| Total Volume | 571 | 806 | 0 | 0 | 1377 | 306 | 0 | 206 | 0 | 512 | 0 | 802 | 248 | 0 | 1050 | 0 | 0 | 0 | 0 | 0 | 2939 |
| % App. Total | 41.5 | 58.5 | 0 | 0 | | 59.8 | 0 | 40.2 | 0 | | 0 | 76.4 | 23.6 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .909 | .950 | .000 | .000 | .970 | .869 | .000 | .954 | .000 | .921 | .000 | .964 | .795 | .000 | .983 | .000 | .000 | .000 | .000 | .000 | .971 |
| Passenger Veh | 563 | 795 | 0 | 0 | 1358 | 302 | 0 | 204 | 0 | 506 | 0 | 786 | 242 | 0 | 1028 | 0 | 0 | 0 | 0 | 0 | 2892 |
| % Passenger Veh | 98.6 | 98.6 | 0 | 0 | 98.6 | 98.7 | 0 | 99.0 | 0 | 98.8 | 0 | 98.0 | 97.6 | 0 | 97.9 | 0 | 0 | 0 | 0 | 0 | 98.4 |
| Trucks | 8 | 11 | 0 | 0 | 19 | 4 | 0 | 2 | 0 | 6 | 0 | 16 | 6 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 47 |
| % Trucks | 1.4 | 1.4 | 0 | 0 | 1.4 | 1.3 | 0 | 1.0 | 0 | 1.2 | 0 | 2.0 | 2.4 | 0 | 2.1 | 0 | 0 | 0 | 0 | 0 | 1.6 |

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File Name : 5th and I64 WB
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Page No : 5



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File Name : 5th and I64 WB
Site Code : 00765765
Start Date : 9/2/2021
Page No : 1

Groups Printed- Bikes - Peds

| | 5th St From North | | | | | I64 WB Off Ramp From East | | | | | 5th St From South | | | | | I64 WB On Ramp From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 04:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 3 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Grand Total | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 1 | 9 |
| Apprch % | 0 | 100 | 0 | 0 | | 0 | 0 | 0 | 100 | | 0 | 100 | 0 | 0 | | 0 | 0 | 0 | 100 | | |
| Total % | 0 | 33.3 | 0 | 0 | 33.3 | 0 | 0 | 0 | 11.1 | 11.1 | 0 | 44.4 | 0 | 0 | 44.4 | 0 | 0 | 0 | 11.1 | 11.1 | |
| Bikes | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 7 |
| % Bikes | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 77.8 |
| Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| % Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 22.2 |

# Data Collection Group

757.478.6761
LSmith@DataCollectionGroup.net


File Name : 5th and I64EB
Site Code : 00006193
Start Date : 9/2/2021
Page No : 1

Groups Printed- Bikes - Peds

| | 5th From North | | | | | I64 EB On Ramp From East | | | | | 5th From South | | | | | I64 EB Off Ramp From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 5 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 05:15 PM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Grand Total | 0 | 5 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 2 | 13 |
| Apprch % | 0 | 83.3 | 16.7 | 0 | | 0 | 0 | 0 | 0 | | 0 | 100 | 0 | 0 | | 0 | 0 | 0 | 100 | | |
| Total % | 0 | 38.5 | 7.7 | 0 | 46.2 | 0 | 0 | 0 | 0 | 0 | 0 | 38.5 | 0 | 0 | 38.5 | 0 | 0 | 0 | 15.4 | 15.4 | |
| Bikes | 0 | 5 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 11 |
| % Bikes | 0 | 100 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 84.6 |
| Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| % Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 15.4 |

# Data Collection Group

757.478.6761
LSmith@DataCollectionGroup.net

File Name : 5th and I64EB
Site Code : 00006193
Start Date : 9/2/2021
Page No : 1

Groups Printed- Passenger Veh - Trucks

| | 5th From North | | | | | I64 EB On Ramp From East | | | | | 5th From South | | | | | I64 EB Off Ramp From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| 07:00 AM | 0 | 44 | 32 | 0 | 76 | 0 | 0 | 0 | 0 | 0 | 31 | 126 | 0 | 0 | 157 | 8 | 0 | 58 | 0 | 66 | 299 |
| 07:15 AM | 0 | 46 | 35 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 40 | 140 | 0 | 0 | 180 | 35 | 0 | 90 | 0 | 125 | 386 |
| 07:30 AM | 0 | 66 | 48 | 0 | 114 | 0 | 0 | 0 | 0 | 0 | 65 | 188 | 0 | 0 | 253 | 29 | 0 | 112 | 0 | 141 | 508 |
| 07:45 AM | 0 | 108 | 42 | 0 | 150 | 0 | 0 | 0 | 0 | 0 | 83 | 199 | 0 | 0 | 282 | 40 | 0 | 119 | 0 | 159 | 591 |
| Total | 0 | 264 | 157 | 0 | 421 | 0 | 0 | 0 | 0 | 0 | 219 | 653 | 0 | 0 | 872 | 112 | 0 | 379 | 0 | 491 | 1784 |
| 08:00 AM | 0 | 151 | 35 | 0 | 186 | 0 | 0 | 0 | 0 | 0 | 71 | 180 | 0 | 0 | 251 | 78 | 0 | 131 | 0 | 209 | 646 |
| 08:15 AM | 0 | 134 | 42 | 0 | 176 | 0 | 0 | 0 | 0 | 0 | 64 | 199 | 0 | 0 | 263 | 76 | 0 | 127 | 0 | 203 | 642 |
| 08:30 AM | 0 | 82 | 43 | 0 | 125 | 0 | 0 | 0 | 0 | 0 | 60 | 164 | 0 | 0 | 224 | 34 | 0 | 112 | 0 | 146 | 495 |
| 08:45 AM | 0 | 83 | 53 | 0 | 136 | 0 | 0 | 0 | 0 | 0 | 57 | 161 | 0 | 0 | 218 | 29 | 0 | 106 | 0 | 135 | 489 |
| Total | 0 | 450 | 173 | 0 | 623 | 0 | 0 | 0 | 0 | 0 | 252 | 704 | 0 | 0 | 956 | 217 | 0 | 476 | 0 | 693 | 2272 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 133 | 96 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 46 | 167 | 0 | 0 | 213 | 68 | 0 | 88 | 0 | 156 | 598 |
| 04:15 PM | 0 | 187 | 100 | 1 | 288 | 0 | 0 | 0 | 0 | 0 | 42 | 141 | 0 | 0 | 183 | 63 | 0 | 112 | 0 | 175 | 646 |
| 04:30 PM | 0 | 161 | 100 | 1 | 262 | 0 | 0 | 0 | 0 | 0 | 48 | 124 | 0 | 0 | 172 | 56 | 0 | 92 | 0 | 148 | 582 |
| 04:45 PM | 0 | 143 | 92 | 0 | 235 | 0 | 0 | 0 | 0 | 0 | 53 | 150 | 0 | 0 | 203 | 59 | 0 | 103 | 0 | 162 | 600 |
| Total | 0 | 624 | 388 | 2 | 1014 | 0 | 0 | 0 | 0 | 0 | 189 | 582 | 0 | 0 | 771 | 246 | 0 | 395 | 0 | 641 | 2426 |
| 05:00 PM | 0 | 163 | 82 | 0 | 245 | 0 | 0 | 0 | 0 | 0 | 41 | 148 | 0 | 0 | 189 | 60 | 0 | 106 | 0 | 166 | 600 |
| 05:15 PM | 0 | 181 | 84 | 1 | 266 | 0 | 0 | 0 | 0 | 0 | 35 | 145 | 0 | 0 | 180 | 57 | 0 | 128 | 0 | 185 | 631 |
| 05:30 PM | 0 | 189 | 56 | 0 | 245 | 0 | 0 | 0 | 0 | 0 | 45 | 136 | 0 | 0 | 181 | 76 | 0 | 122 | 0 | 198 | 624 |
| 05:45 PM | 0 | 161 | 91 | 1 | 253 | 0 | 0 | 0 | 0 | 0 | 53 | 115 | 0 | 0 | 168 | 70 | 0 | 96 | 0 | 166 | 587 |
| Total | 0 | 694 | 313 | 2 | 1009 | 0 | 0 | 0 | 0 | 0 | 174 | 544 | 0 | 0 | 718 | 263 | 0 | 452 | 0 | 715 | 2442 |
| Grand Total | 0 | 2032 | 1031 | 4 | 3067 | 0 | 0 | 0 | 0 | 0 | 834 | 2483 | 0 | 0 | 3317 | 838 | 0 | 1702 | 0 | 2540 | 8924 |
| Apprch % | 0 | 66.3 | 33.6 | 0.1 | | 0 | 0 | 0 | 0 | | 25.1 | 74.9 | 0 | 0 | | 33 | 0 | 67 | 0 | | |
| Total % | 0 | 22.8 | 11.6 | 0 | 34.4 | 0 | 0 | 0 | 0 | 0 | 9.3 | 27.8 | 0 | 0 | 37.2 | 9.4 | 0 | 19.1 | 0 | 28.5 | |
| Passenger Veh | 0 | 1968 | 1003 | 4 | 2975 | 0 | 0 | 0 | 0 | 0 | 818 | 2435 | 0 | 0 | 3253 | 825 | 0 | 1674 | 0 | 2499 | 8727 |
| % Passenger Veh | 0 | 96.9 | 97.3 | 100 | 97 | 0 | 0 | 0 | 0 | 0 | 98.1 | 98.1 | 0 | 0 | 98.1 | 98.4 | 0 | 98.4 | 0 | 98.4 | 97.8 |
| Trucks | 0 | 64 | 28 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 16 | 48 | 0 | 0 | 64 | 13 | 0 | 28 | 0 | 41 | 197 |
| % Trucks | 0 | 3.1 | 2.7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1.9 | 1.9 | 0 | 0 | 1.9 | 1.6 | 0 | 1.6 | 0 | 1.6 | 2.2 |

Data Collection Group
757.478.6761
LSmith@DataCollectionGroup.net

File Name : 5th and I64EB
Site Code : 00006193
Start Date : 9/2/2021

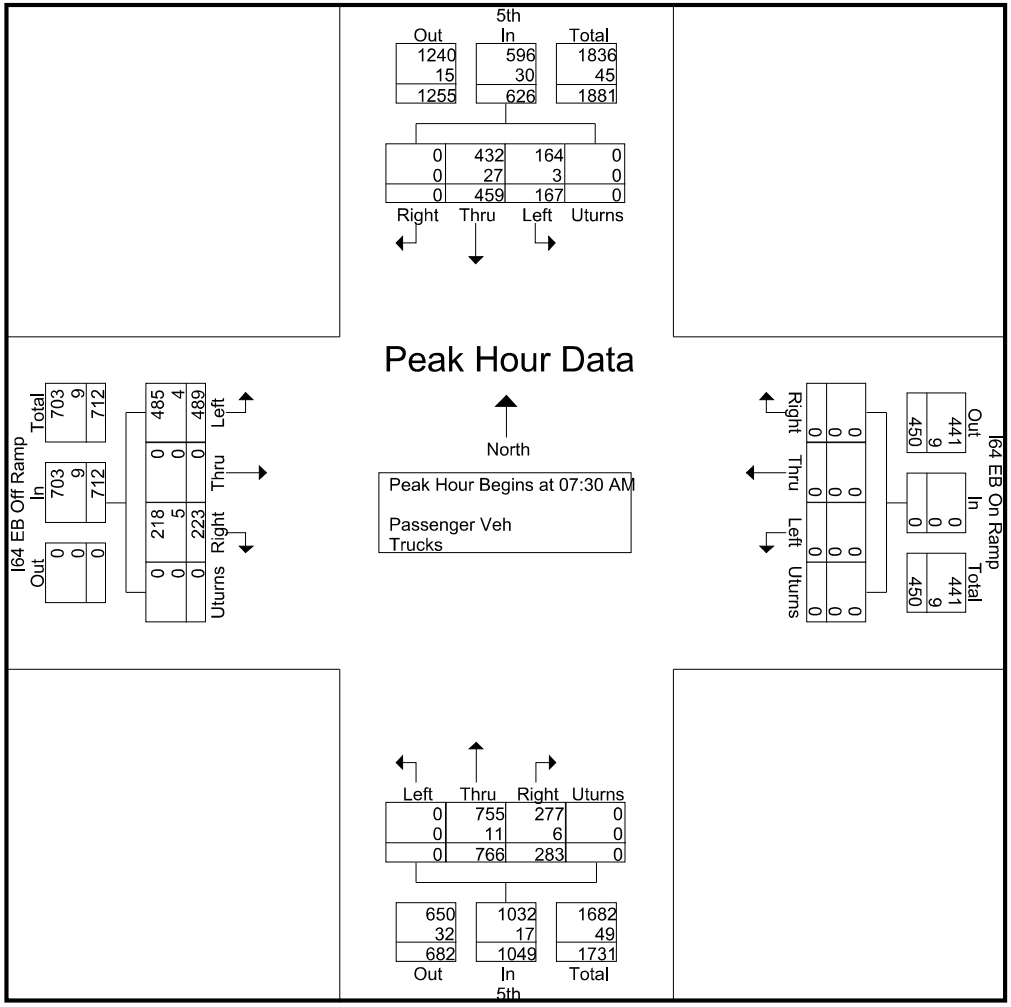

| | 5th From North | | | | | I64 EB On Ramp From East | | | | | 5th From South | | | | | I64 EB Off Ramp From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 0 | 66 | **48** | 0 | 114 | 0 | 0 | 0 | 0 | 0 | 65 | 188 | 0 | 0 | 253 | 29 | 0 | 112 | 0 | 141 | 508 |
| 07:45 AM | 0 | 108 | 42 | 0 | 150 | 0 | 0 | 0 | 0 | 0 | **83** | **199** | 0 | 0 | **282** | 40 | 0 | 119 | 0 | 159 | 591 |
| 08:00 AM | 0 | **151** | 35 | 0 | **186** | 0 | 0 | 0 | 0 | 0 | 71 | 180 | 0 | 0 | 251 | **78** | 0 | **131** | 0 | **209** | **646** |
| 08:15 AM | 0 | 134 | 42 | 0 | 176 | 0 | 0 | 0 | 0 | 0 | 64 | 199 | 0 | 0 | 263 | 76 | 0 | 127 | 0 | 203 | 642 |
| Total Volume | 0 | 459 | 167 | 0 | 626 | 0 | 0 | 0 | 0 | 0 | 283 | 766 | 0 | 0 | 1049 | 223 | 0 | 489 | 0 | 712 | 2387 |
| % App. Total | 0 | 73.3 | 26.7 | 0 | | 0 | 0 | 0 | 0 | | 27 | 73 | 0 | 0 | | 31.3 | 0 | 68.7 | 0 | | |
| PHF | .000 | .760 | .870 | .000 | .841 | .000 | .000 | .000 | .000 | .000 | .852 | .962 | .000 | .000 | .930 | .715 | .000 | .933 | .000 | .852 | .924 |
| Passenger Veh | 0 | 432 | 164 | 0 | 596 | 0 | 0 | 0 | 0 | 0 | 277 | 755 | 0 | 0 | 1032 | 218 | 0 | 485 | 0 | 703 | 2331 |
| % Passenger Veh | 0 | 94.1 | 98.2 | 0 | 95.2 | 0 | 0 | 0 | 0 | 0 | 97.9 | 98.6 | 0 | 0 | 98.4 | 97.8 | 0 | 99.2 | 0 | 98.7 | 97.7 |
| Trucks | 0 | 27 | 3 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 6 | 11 | 0 | 0 | 17 | 5 | 0 | 4 | 0 | 9 | 56 |
| % Trucks | 0 | 5.9 | 1.8 | 0 | 4.8 | 0 | 0 | 0 | 0 | 0 | 2.1 | 1.4 | 0 | 0 | 1.6 | 2.2 | 0 | 0.8 | 0 | 1.3 | 2.3 |

# Data Collection Group

757.478.6761

LSmith@DataCollectionGroup.net


File Name : 5th and I64EB
Site Code : 00006193
Start Date : 9/2/2021
Page No : 3



Data Collection Group
757.478.6761
LSmith@DataCollectionGroup.net

File Name : 5th and I64EB
Site Code : 00006193
Start Date : 9/2/2021
Page No : 4

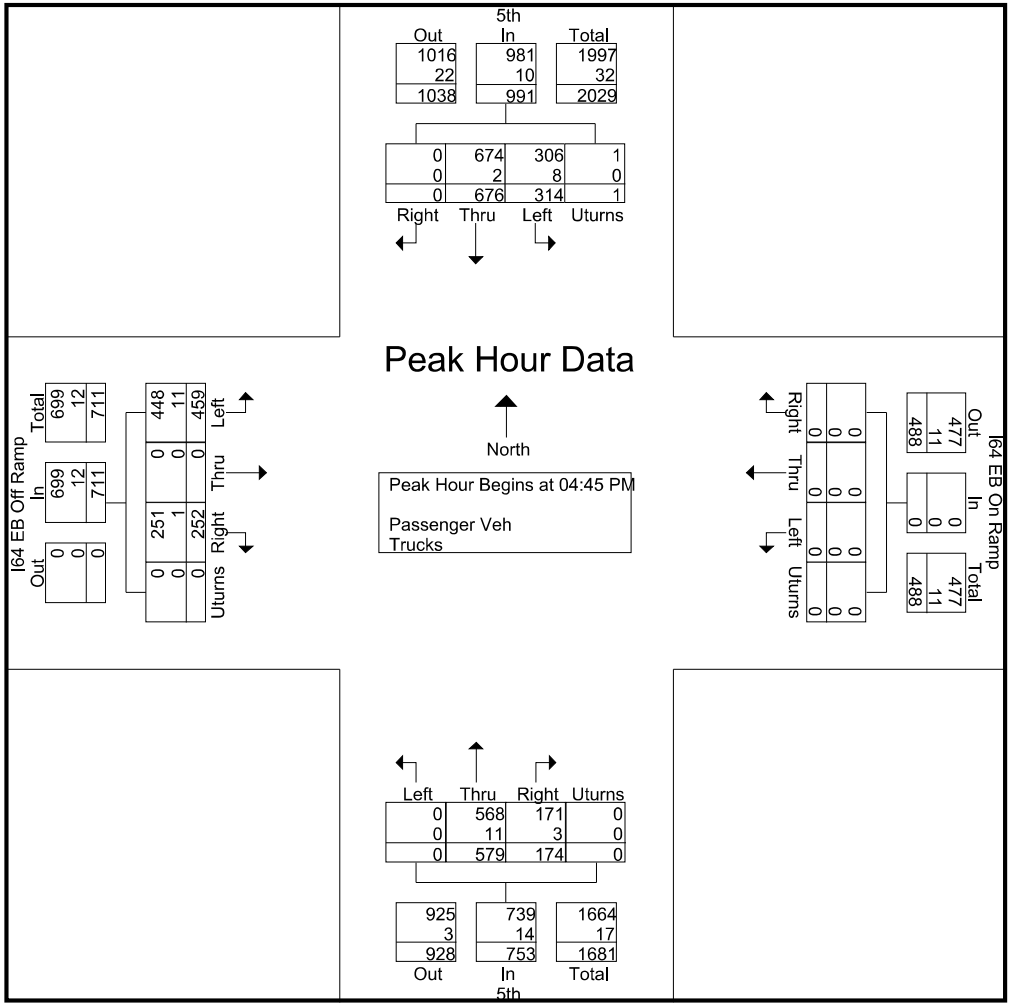
| | 5th From North | | | | | I64 EB On Ramp From East | | | | | 5th From South | | | | | I64 EB Off Ramp From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 0 | 143 | **92** | 0 | 235 | 0 | 0 | 0 | 0 | 0 | **53** | **150** | 0 | 0 | **203** | 59 | 0 | 103 | 0 | 162 | 600 |
| 05:00 PM | 0 | 163 | 82 | 0 | 245 | 0 | 0 | 0 | 0 | 0 | 41 | 148 | 0 | 0 | 189 | 60 | 0 | 106 | 0 | 166 | 600 |
| 05:15 PM | 0 | 181 | 84 | **1** | **266** | 0 | 0 | 0 | 0 | 0 | 35 | 145 | 0 | 0 | 180 | 57 | 0 | **128** | 0 | 185 | **631** |
| 05:30 PM | 0 | **189** | 56 | 0 | 245 | 0 | 0 | 0 | 0 | 0 | 45 | 136 | 0 | 0 | 181 | **76** | 0 | 122 | 0 | **198** | 624 |
| Total Volume | 0 | 676 | 314 | 1 | 991 | 0 | 0 | 0 | 0 | 0 | 174 | 579 | 0 | 0 | 753 | 252 | 0 | 459 | 0 | 711 | 2455 |
| % App. Total | 0 | 68.2 | 31.7 | 0.1 | | 0 | 0 | 0 | 0 | | 23.1 | 76.9 | 0 | 0 | | 35.4 | 0 | 64.6 | 0 | | |
| PHF | .000 | .894 | .853 | .250 | .931 | .000 | .000 | .000 | .000 | .000 | .821 | .965 | .000 | .000 | .927 | .829 | .000 | .896 | .000 | .898 | .973 |
| Passenger Veh | 0 | 674 | 306 | 1 | 981 | 0 | 0 | 0 | 0 | 0 | 171 | 568 | 0 | 0 | 739 | 251 | 0 | 448 | 0 | 699 | 2419 |
| % Passenger Veh | 0 | 99.7 | 97.5 | 100 | 99.0 | 0 | 0 | 0 | 0 | 0 | 98.3 | 98.1 | 0 | 0 | 98.1 | 99.6 | 0 | 97.6 | 0 | 98.3 | 98.5 |
| Trucks | 0 | 2 | 8 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 0 | 0 | 14 | 1 | 0 | 11 | 0 | 12 | 36 |
| % Trucks | 0 | 0.3 | 2.5 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 1.7 | 1.9 | 0 | 0 | 1.9 | 0.4 | 0 | 2.4 | 0 | 1.7 | 1.5 |

# Data Collection Group

757.478.6761

LSmith@DataCollectionGroup.net


File Name : 5th and I64EB
Site Code : 00006193
Start Date : 9/2/2021
Page No : 5



# Data Collection Group

LSmith@DataCollectionGroup.net

File Name : 5th and Old Lynchburg and County Complex
Site Code :
Start Date : 9/2/2021
Page No : 1

Groups Printed- Passenger Veh - Trucks

| | 5th St From North | | | | | County Complex From East | | | | | Old Lynchburg Rd From South | | | | | Old Lynchburg Rd From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Int. Total |
| 07:00 AM | 16 | 15 | 6 | 1 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 3 | 0 | 69 | 2 | 0 | 32 | 0 | 34 | 141 |
| 07:15 AM | 22 | 31 | 4 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 104 | 7 | 2 | 113 | 0 | 0 | 46 | 0 | 46 | 216 |
| 07:30 AM | 22 | 29 | 4 | 2 | 57 | 1 | 1 | 0 | 0 | 2 | 0 | 133 | 11 | 2 | 146 | 3 | 0 | 71 | 0 | 74 | 279 |
| 07:45 AM | 27 | 44 | 13 | 9 | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 11 | 0 | 131 | 4 | 0 | 65 | 0 | 69 | 293 |
| Total | 87 | 119 | 27 | 12 | 245 | 1 | 1 | 0 | 0 | 2 | 0 | 423 | 32 | 4 | 459 | 9 | 0 | 214 | 0 | 223 | 929 |
| 08:00 AM | 54 | 47 | 10 | 5 | 116 | 1 | 0 | 0 | 0 | 1 | 0 | 111 | 11 | 1 | 123 | 5 | 2 | 43 | 0 | 50 | 290 |
| 08:15 AM | 39 | 44 | 16 | 5 | 104 | 0 | 0 | 0 | 0 | 0 | 1 | 109 | 11 | 1 | 122 | 9 | 0 | 53 | 0 | 62 | 288 |
| 08:30 AM | 44 | 49 | 6 | 6 | 105 | 3 | 1 | 0 | 0 | 4 | 0 | 108 | 12 | 2 | 122 | 3 | 0 | 58 | 0 | 61 | 292 |
| 08:45 AM | 28 | 62 | 7 | 3 | 100 | 1 | 0 | 0 | 0 | 1 | 1 | 85 | 3 | 0 | 89 | 2 | 1 | 49 | 0 | 52 | 242 |
| Total | 165 | 202 | 39 | 19 | 425 | 5 | 1 | 0 | 0 | 6 | 2 | 413 | 37 | 4 | 456 | 19 | 3 | 203 | 0 | 225 | 1112 |
| 04:00 PM | 48 | 93 | 1 | 5 | 147 | 8 | 0 | 0 | 0 | 8 | 1 | 66 | 5 | 4 | 76 | 12 | 1 | 36 | 0 | 49 | 280 |
| 04:15 PM | 62 | 100 | 4 | 5 | 171 | 7 | 1 | 0 | 0 | 8 | 0 | 66 | 2 | 3 | 71 | 12 | 2 | 36 | 0 | 50 | 300 |
| 04:30 PM | 69 | 82 | 2 | 10 | 163 | 8 | 0 | 1 | 0 | 9 | 0 | 82 | 9 | 0 | 91 | 19 | 0 | 53 | 0 | 72 | 335 |
| 04:45 PM | 63 | 78 | 3 | 2 | 146 | 6 | 0 | 0 | 0 | 6 | 0 | 97 | 3 | 1 | 101 | 6 | 0 | 61 | 0 | 67 | 320 |
| Total | 242 | 353 | 10 | 22 | 627 | 29 | 1 | 1 | 0 | 31 | 1 | 311 | 19 | 8 | 339 | 49 | 3 | 186 | 0 | 238 | 1235 |
| 05:00 PM | 51 | 116 | 1 | 6 | 174 | 10 | 0 | 2 | 0 | 12 | 0 | 86 | 1 | 3 | 90 | 7 | 0 | 49 | 0 | 56 | 332 |
| 05:15 PM | 71 | 113 | 0 | 6 | 190 | 8 | 0 | 0 | 0 | 8 | 2 | 83 | 6 | 1 | 92 | 9 | 0 | 51 | 0 | 60 | 350 |
| 05:30 PM | 72 | 105 | 1 | 7 | 185 | 4 | 0 | 0 | 0 | 4 | 0 | 75 | 4 | 0 | 79 | 12 | 1 | 60 | 0 | 73 | 341 |
| 05:45 PM | 63 | 91 | 1 | 11 | 166 | 3 | 0 | 0 | 0 | 3 | 0 | 86 | 8 | 0 | 94 | 7 | 0 | 57 | 0 | 64 | 327 |
| Total | 257 | 425 | 3 | 30 | 715 | 25 | 0 | 2 | 0 | 27 | 2 | 330 | 19 | 4 | 355 | 35 | 1 | 217 | 0 | 253 | 1350 |
| Grand Total | 751 | 1099 | 79 | 83 | 2012 | 60 | 3 | 3 | 0 | 66 | 5 | 1477 | 107 | 20 | 1609 | 112 | 7 | 820 | 0 | 939 | 4626 |
| Apprch % | 37.3 | 54.6 | 3.9 | 4.1 | | 90.9 | 4.5 | 4.5 | 0 | | 0.3 | 91.8 | 6.7 | 1.2 | | 11.9 | 0.7 | 87.3 | 0 | | |
| Total % | 16.2 | 23.8 | 1.7 | 1.8 | 43.5 | 1.3 | 0.1 | 0.1 | 0 | 1.4 | 0.1 | 31.9 | 2.3 | 0.4 | 34.8 | 2.4 | 0.2 | 17.7 | 0 | 20.3 | |
| Passenger Veh | 726 | 1071 | 79 | 82 | 1958 | 60 | 3 | 3 | 0 | 66 | 5 | 1445 | 103 | 20 | 1573 | 108 | 7 | 805 | 0 | 920 | 4517 |
| % Passenger Veh | 96.7 | 97.5 | 100 | 98.8 | 97.3 | 100 | 100 | 100 | 0 | 100 | 100 | 97.8 | 96.3 | 100 | 97.8 | 96.4 | 100 | 98.2 | 0 | 98 | 97.6 |
| Trucks | 25 | 28 | 0 | 1 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 4 | 0 | 36 | 4 | 0 | 15 | 0 | 19 | 109 |
| % Trucks | 3.3 | 2.5 | 0 | 1.2 | 2.7 | 0 | 0 | 0 | 0 | 0 | 0 | 2.2 | 3.7 | 0 | 2.2 | 3.6 | 0 | 1.8 | 0 | 2 | 2.4 |

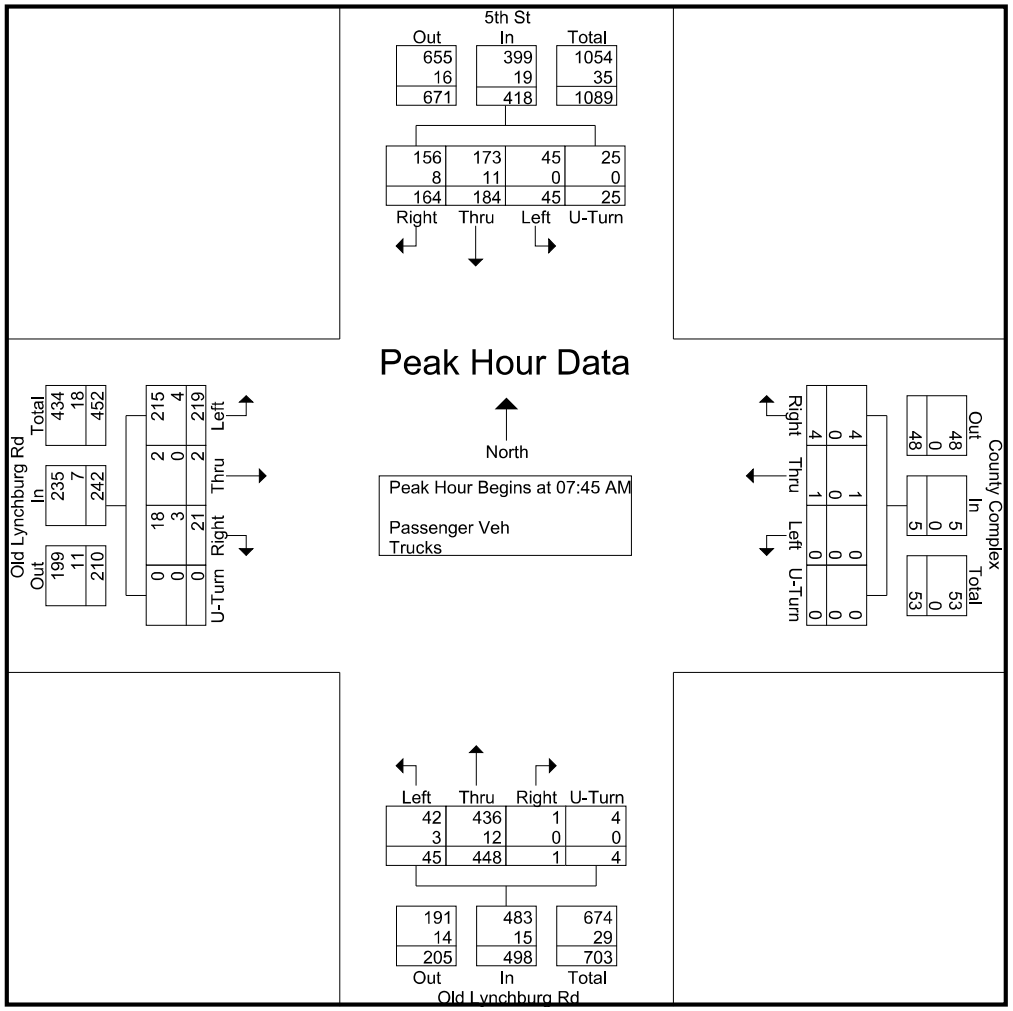
Data Collection Group
LSmith@DataCollectionGroup.net

File Name : 5th and Old Lynchburg and County Complex
Site Code :
Start Date : 9/2/2021
Page No : 2

| | 5th St From North | | | | | County Complex From East | | | | | Old Lynchburg Rd From South | | | | | Old Lynchburg Rd From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:45 AM | 27 | 44 | 13 | **9** | 93 | 0 | 0 | 0 | 0 | 0 | 0 | **120** | 11 | 0 | **131** | 4 | 0 | **65** | 0 | **69** | **293** |
| 08:00 AM | **54** | 47 | 10 | 5 | **116** | 1 | 0 | 0 | 0 | 1 | 0 | 111 | 11 | 1 | 123 | 5 | **2** | 43 | 0 | 50 | 290 |
| 08:15 AM | 39 | 44 | **16** | 5 | 104 | 0 | 0 | 0 | 0 | 0 | **1** | 109 | 11 | 1 | 122 | **9** | 0 | 53 | 0 | 62 | 288 |
| 08:30 AM | 44 | **49** | 6 | 6 | 105 | **3** | **1** | 0 | 0 | **4** | 0 | 108 | **12** | **2** | 122 | 3 | 0 | 58 | 0 | 61 | 292 |
| Total Volume | 164 | 184 | 45 | 25 | 418 | 4 | 1 | 0 | 0 | 5 | 1 | 448 | 45 | 4 | 498 | 21 | 2 | 219 | 0 | 242 | 1163 |
| % App. Total | 39.2 | 44 | 10.8 | 6 | | 80 | 20 | 0 | 0 | | 0.2 | 90 | 9 | 0.8 | | 8.7 | 0.8 | 90.5 | 0 | | |
| PHF | .759 | .939 | .703 | .694 | .901 | .333 | .250 | .000 | .000 | .313 | .250 | .933 | .938 | .500 | .950 | .583 | .250 | .842 | .000 | .877 | .992 |
| Passenger Veh | 156 | 173 | 45 | 25 | 399 | 4 | 1 | 0 | 0 | 5 | 1 | 436 | 42 | 4 | 483 | 18 | 2 | 215 | 0 | 235 | 1122 |
| % Passenger Veh | 95.1 | 94.0 | 100 | 100 | 95.5 | 100 | 100 | 0 | 0 | 100 | 100 | 97.3 | 93.3 | 100 | 97.0 | 85.7 | 100 | 98.2 | 0 | 97.1 | 96.5 |
| Trucks | 8 | 11 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 3 | 0 | 15 | 3 | 0 | 4 | 0 | 7 | 41 |
| % Trucks | 4.9 | 6.0 | 0 | 0 | 4.5 | 0 | 0 | 0 | 0 | 0 | 0 | 2.7 | 6.7 | 0 | 3.0 | 14.3 | 0 | 1.8 | 0 | 2.9 | 3.5 |

Data Collection Group
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File Name : 5th and Old Lynchburg and County Complex
Site Code :
Start Date : 9/2/2021
Page No : 3



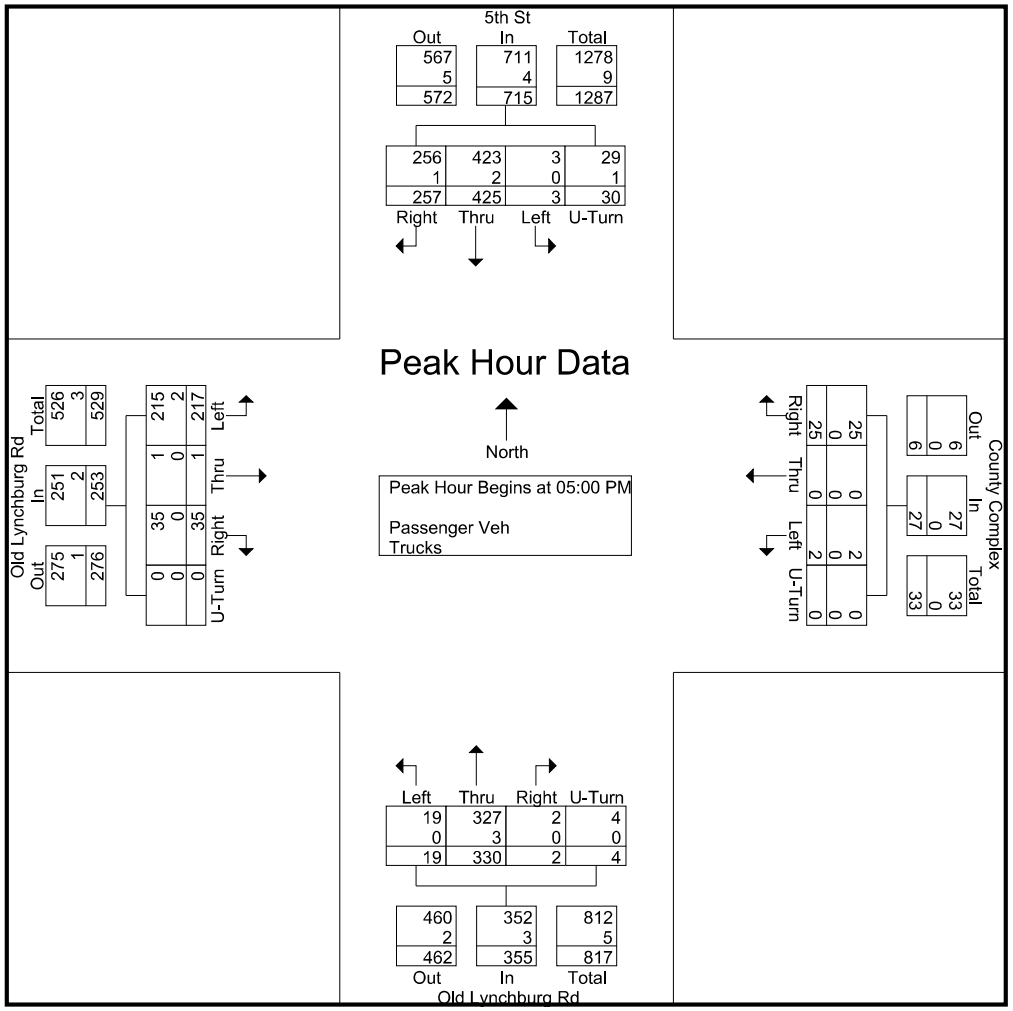
Data Collection Group
LSmith@DataCollectionGroup.net

File Name : 5th and Old Lynchburg and County Complex
Site Code :
Start Date : 9/2/2021
Page No : 4

| | 5th St From North | | | | | County Complex From East | | | | | Old Lynchburg Rd From South | | | | | Old Lynchburg Rd From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 51 | **116** | **1** | 6 | 174 | **10** | 0 | **2** | 0 | **12** | 0 | **86** | 1 | **3** | 90 | 7 | 0 | 49 | 0 | 56 | 332 |
| 05:15 PM | 71 | 113 | 0 | 6 | **190** | 8 | 0 | 0 | 0 | 8 | **2** | 83 | 6 | 1 | 92 | 9 | 0 | 51 | 0 | 60 | **350** |
| 05:30 PM | **72** | 105 | 1 | 7 | 185 | 4 | 0 | 0 | 0 | 4 | 0 | 75 | 4 | 0 | 79 | **12** | **1** | **60** | 0 | **73** | 341 |
| 05:45 PM | 63 | 91 | 1 | **11** | 166 | 3 | 0 | 0 | 0 | 3 | 0 | 86 | **8** | 0 | **94** | 7 | 0 | 57 | 0 | 64 | 327 |
| Total Volume | 257 | 425 | 3 | 30 | 715 | 25 | 0 | 2 | 0 | 27 | 2 | 330 | 19 | 4 | 355 | 35 | 1 | 217 | 0 | 253 | 1350 |
| % App. Total | 35.9 | 59.4 | 0.4 | 4.2 | | 92.6 | 0 | 7.4 | 0 | | 0.6 | 93 | 5.4 | 1.1 | | 13.8 | 0.4 | 85.8 | 0 | | |
| PHF | .892 | .916 | .750 | .682 | .941 | .625 | .000 | .250 | .000 | .563 | .250 | .959 | .594 | .333 | .944 | .729 | .250 | .904 | .000 | .866 | .964 |
| Passenger Veh | 256 | 423 | 3 | 29 | 711 | 25 | 0 | 2 | 0 | 27 | 2 | 327 | 19 | 4 | 352 | 35 | 1 | 215 | 0 | 251 | 1341 |
| % Passenger Veh | 99.6 | 99.5 | 100 | 96.7 | 99.4 | 100 | 0 | 100 | 0 | 100 | 100 | 99.1 | 100 | 100 | 99.2 | 100 | 100 | 99.1 | 0 | 99.2 | 99.3 |
| Trucks | 1 | 2 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 9 |
| % Trucks | 0.4 | 0.5 | 0 | 3.3 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 0 | 0 | 0.8 | 0 | 0 | 0.9 | 0 | 0.8 | 0.7 |

Data Collection Group
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File Name : 5th and Old Lynchburg and County Complex
Site Code :
Start Date : 9/2/2021
Page No : 5



Data Collection Group
LSmith@DataCollectionGroup.net

File Name : 5th and Old Lynchburg and County Complex
Site Code :
Start Date : 9/2/2021


Groups Printed- Bikes - Peds

| | 5th St From North | | | | | County Complex From East | | | | | Old Lynchburg Rd From South | | | | | Old Lynchburg Rd From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 3 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 1 | 0 | 0 | 0 | 1 | 5 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 04:30 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 4 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 2 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 1 | 1 | 0 | 1 | 3 | 6 |
| Grand Total | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 7 | 2 | 9 | 3 | 1 | 0 | 2 | 6 | 17 |
| Apprch % | 100 | 0 | 0 | 0 | | 0 | 0 | 100 | 0 | | 0 | 0 | 77.8 | 22.2 | | 50 | 16.7 | 0 | 33.3 | | |
| Total % | 5.9 | 0 | 0 | 0 | 5.9 | 0 | 0 | 5.9 | 0 | 5.9 | 0 | 0 | 41.2 | 11.8 | 52.9 | 17.6 | 5.9 | 0 | 11.8 | 35.3 | |
| Bikes | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 3 | 1 | 0 | 0 | 4 | 12 |
| % Bikes | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 77.8 | 100 | 100 | 0 | 0 | 66.7 | 70.6 |
| Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 5 |
| % Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 0 | 0 | 100 | 22.2 | 0 | 0 | 0 | 100 | 33.3 | 29.4 |

# Data Collection Group

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Police office directed traffic in the AM

File Name : 5th and Stagecoach
Site Code :
Start Date : 9/2/2021
Page No : 1

Groups Printed- Passenger Veh - Trucks

| | 5th From North | | | | | Stagecoach From East | | | | | 5th From South | | | | | Apartments Access From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Int. Total |
| 07:00 AM | 3 | 37 | 15 | 0 | 55 | 44 | 0 | 2 | 0 | 46 | 3 | 97 | 0 | 0 | 100 | 1 | 0 | 8 | 0 | 9 | 210 |
| 07:15 AM | 3 | 48 | 25 | 0 | 76 | 38 | 0 | 4 | 0 | 42 | 4 | 151 | 0 | 0 | 155 | 3 | 0 | 4 | 0 | 7 | 280 |
| 07:30 AM | 2 | 45 | 37 | 0 | 84 | 61 | 0 | 4 | 0 | 65 | 10 | 198 | 2 | 0 | 210 | 2 | 0 | 7 | 0 | 9 | 368 |
| 07:45 AM | 4 | 90 | 69 | 0 | 163 | 81 | 0 | 3 | 0 | 84 | 10 | 183 | 0 | 0 | 193 | 4 | 0 | 6 | 0 | 10 | 450 |
| Total | 12 | 220 | 146 | 0 | 378 | 224 | 0 | 13 | 0 | 237 | 27 | 629 | 2 | 0 | 658 | 10 | 0 | 25 | 0 | 35 | 1308 |
| 08:00 AM | 3 | 100 | 124 | 0 | 227 | 108 | 0 | 4 | 0 | 112 | 11 | 148 | 0 | 0 | 159 | 2 | 0 | 6 | 0 | 8 | 506 |
| 08:15 AM | 2 | 99 | 101 | 0 | 202 | 112 | 0 | 8 | 0 | 120 | 11 | 165 | 0 | 0 | 176 | 2 | 0 | 15 | 0 | 17 | 515 |
| 08:30 AM | 1 | 89 | 24 | 0 | 114 | 62 | 1 | 2 | 0 | 65 | 2 | 180 | 0 | 0 | 182 | 10 | 1 | 3 | 0 | 14 | 375 |
| 08:45 AM | 4 | 93 | 20 | 1 | 118 | 33 | 0 | 4 | 0 | 37 | 2 | 131 | 0 | 0 | 133 | 2 | 1 | 8 | 0 | 11 | 299 |
| Total | 10 | 381 | 269 | 1 | 661 | 315 | 1 | 18 | 0 | 334 | 26 | 624 | 0 | 0 | 650 | 16 | 2 | 32 | 0 | 50 | 1695 |
| 04:00 PM | 14 | 140 | 44 | 1 | 199 | 93 | 0 | 14 | 0 | 107 | 8 | 103 | 1 | 0 | 112 | 1 | 0 | 7 | 0 | 8 | 426 |
| 04:15 PM | 9 | 171 | 72 | 0 | 252 | 43 | 0 | 3 | 0 | 46 | 6 | 111 | 1 | 0 | 118 | 2 | 1 | 7 | 0 | 10 | 426 |
| 04:30 PM | 16 | 152 | 49 | 1 | 218 | 44 | 0 | 5 | 0 | 49 | 6 | 144 | 2 | 0 | 152 | 1 | 0 | 5 | 0 | 6 | 425 |
| 04:45 PM | 6 | 144 | 43 | 0 | 193 | 35 | 0 | 7 | 0 | 42 | 7 | 156 | 1 | 0 | 164 | 1 | 0 | 8 | 0 | 9 | 408 |
| Total | 45 | 607 | 208 | 2 | 862 | 215 | 0 | 29 | 0 | 244 | 27 | 514 | 5 | 0 | 546 | 5 | 1 | 27 | 0 | 33 | 1685 |
| 05:00 PM | 4 | 168 | 37 | 0 | 209 | 49 | 1 | 5 | 0 | 55 | 0 | 151 | 1 | 0 | 152 | 1 | 0 | 3 | 0 | 4 | 420 |
| 05:15 PM | 7 | 200 | 39 | 0 | 246 | 33 | 0 | 3 | 0 | 36 | 10 | 134 | 3 | 0 | 147 | 2 | 0 | 7 | 0 | 9 | 438 |
| 05:30 PM | 12 | 180 | 58 | 0 | 250 | 33 | 0 | 0 | 0 | 33 | 13 | 129 | 2 | 1 | 145 | 0 | 1 | 7 | 0 | 8 | 436 |
| 05:45 PM | 10 | 163 | 59 | 0 | 232 | 42 | 0 | 5 | 0 | 47 | 10 | 143 | 3 | 0 | 156 | 2 | 0 | 7 | 0 | 9 | 444 |
| Total | 33 | 711 | 193 | 0 | 937 | 157 | 1 | 13 | 0 | 171 | 33 | 557 | 9 | 1 | 600 | 5 | 1 | 24 | 0 | 30 | 1738 |
| Grand Total | 100 | 1919 | 816 | 3 | 2838 | 911 | 2 | 73 | 0 | 986 | 113 | 2324 | 16 | 1 | 2454 | 36 | 4 | 108 | 0 | 148 | 6426 |
| Apprch % | 3.5 | 67.6 | 28.8 | 0.1 | | 92.4 | 0.2 | 7.4 | 0 | | 4.6 | 94.7 | 0.7 | 0 | | 24.3 | 2.7 | 73 | 0 | | |
| Total % | 1.6 | 29.9 | 12.7 | 0 | 44.2 | 14.2 | 0 | 1.1 | 0 | 15.3 | 1.8 | 36.2 | 0.2 | 0 | 38.2 | 0.6 | 0.1 | 1.7 | 0 | 2.3 | |
| Passenger Veh | 95 | 1865 | 799 | 3 | 2762 | 881 | 2 | 72 | 0 | 955 | 98 | 2287 | 16 | 1 | 2402 | 31 | 4 | 107 | 0 | 142 | 6261 |
| % Passenger Veh | 95 | 97.2 | 97.9 | 100 | 97.3 | 96.7 | 100 | 98.6 | 0 | 96.9 | 86.7 | 98.4 | 100 | 100 | 97.9 | 86.1 | 100 | 99.1 | 0 | 95.9 | 97.4 |
| Trucks | 5 | 54 | 17 | 0 | 76 | 30 | 0 | 1 | 0 | 31 | 15 | 37 | 0 | 0 | 52 | 5 | 0 | 1 | 0 | 6 | 165 |
| % Trucks | 5 | 2.8 | 2.1 | 0 | 2.7 | 3.3 | 0 | 1.4 | 0 | 3.1 | 13.3 | 1.6 | 0 | 0 | 2.1 | 13.9 | 0 | 0.9 | 0 | 4.1 | 2.6 |

Data Collection Group
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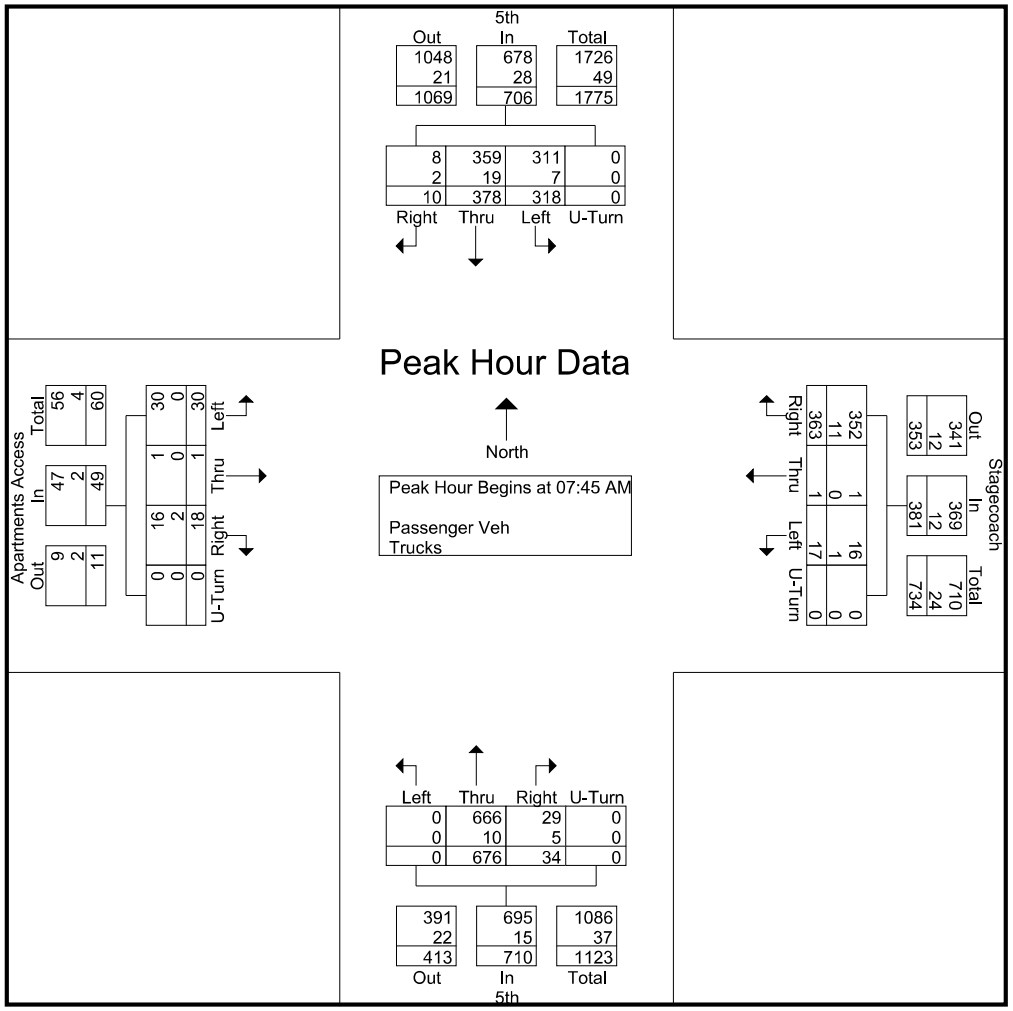
File Name : 5th and Stagecoach
Site Code :
Start Date : 9/2/2021
Page No : 2

| | 5th From North | | | | | Stagecoach From East | | | | | 5th From South | | | | | Apartments Access From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:45 AM | **4** | 90 | 69 | 0 | 163 | 81 | 0 | 3 | 0 | 84 | 10 | **183** | 0 | 0 | **193** | 4 | 0 | 6 | 0 | 10 | 450 |
| 08:00 AM | 3 | **100** | **124** | 0 | **227** | 108 | 0 | 4 | 0 | 112 | **11** | 148 | 0 | 0 | 159 | 2 | 0 | 6 | 0 | 8 | 506 |
| 08:15 AM | 2 | 99 | 101 | 0 | 202 | **112** | 0 | **8** | 0 | **120** | 11 | 165 | 0 | 0 | 176 | 2 | 0 | **15** | 0 | **17** | **515** |
| 08:30 AM | 1 | 89 | 24 | 0 | 114 | 62 | **1** | 2 | 0 | 65 | 2 | 180 | 0 | 0 | 182 | **10** | **1** | 3 | 0 | 14 | 375 |
| Total Volume | 10 | 378 | 318 | 0 | 706 | 363 | 1 | 17 | 0 | 381 | 34 | 676 | 0 | 0 | 710 | 18 | 1 | 30 | 0 | 49 | 1846 |
| % App. Total | 1.4 | 53.5 | 45 | 0 | | 95.3 | 0.3 | 4.5 | 0 | | 4.8 | 95.2 | 0 | 0 | | 36.7 | 2 | 61.2 | 0 | | |
| PHF | .625 | .945 | .641 | .000 | .778 | .810 | .250 | .531 | .000 | .794 | .773 | .923 | .000 | .000 | .920 | .450 | .250 | .500 | .000 | .721 | .896 |
| Passenger Veh | 8 | 359 | 311 | 0 | 678 | 352 | 1 | 16 | 0 | 369 | 29 | 666 | 0 | 0 | 695 | 16 | 1 | 30 | 0 | 47 | 1789 |
| % Passenger Veh | 80.0 | 95.0 | 97.8 | 0 | 96.0 | 97.0 | 100 | 94.1 | 0 | 96.9 | 85.3 | 98.5 | 0 | 0 | 97.9 | 88.9 | 100 | 100 | 0 | 95.9 | 96.9 |
| Trucks | 2 | 19 | 7 | 0 | 28 | 11 | 0 | 1 | 0 | 12 | 5 | 10 | 0 | 0 | 15 | 2 | 0 | 0 | 0 | 2 | 57 |
| % Trucks | 20.0 | 5.0 | 2.2 | 0 | 4.0 | 3.0 | 0 | 5.9 | 0 | 3.1 | 14.7 | 1.5 | 0 | 0 | 2.1 | 11.1 | 0 | 0 | 0 | 4.1 | 3.1 |

# Data Collection Group

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File Name : 5th and Stagecoach
Site Code :
Start Date : 9/2/2021
Page No : 3



Data Collection Group
LSmith@DataCollectionGroup.net

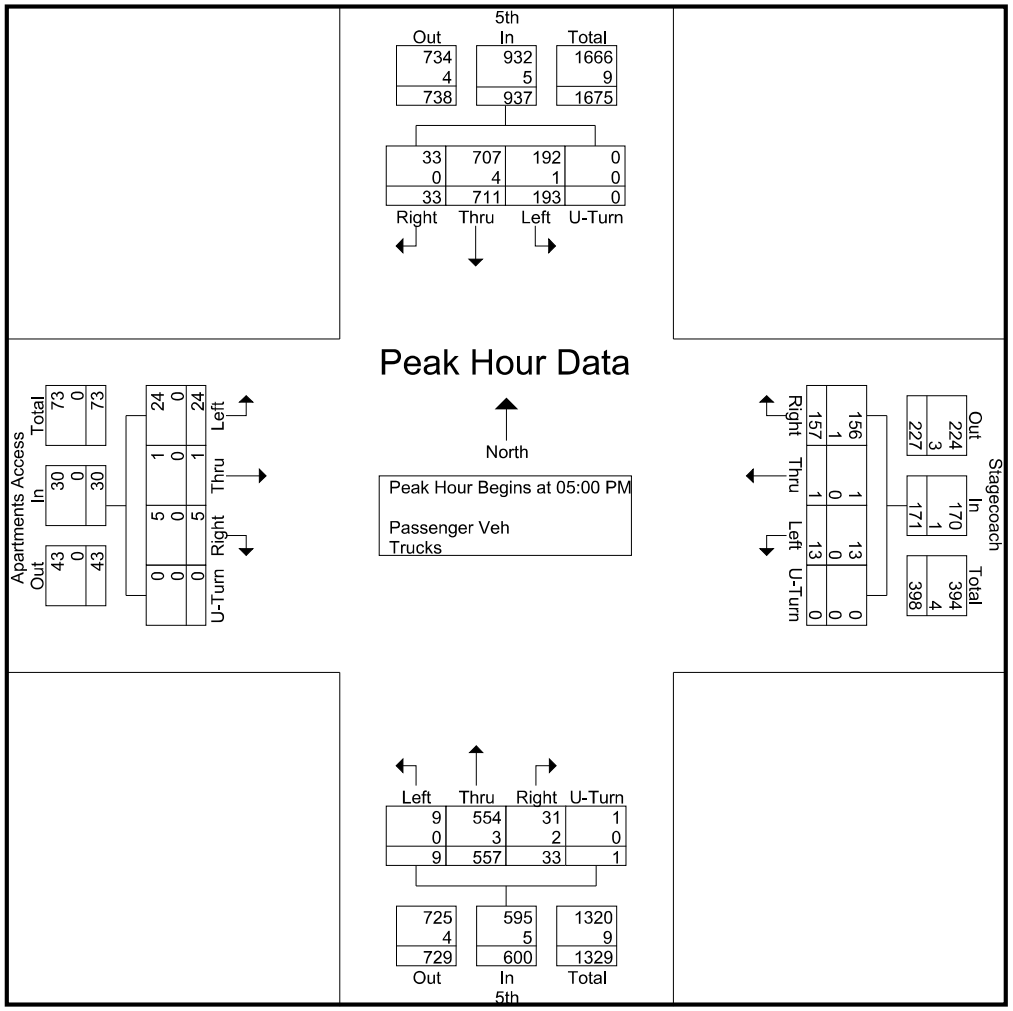
File Name : 5th and Stagecoach
Site Code :
Start Date : 9/2/2021
Page No : 4

| | 5th From North | | | | | Stagecoach From East | | | | | 5th From South | | | | | Apartments Access From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 4 | 168 | 37 | 0 | 209 | **49** | **1** | **5** | 0 | **55** | 0 | **151** | 1 | 0 | 152 | 1 | 0 | 3 | 0 | 4 | 420 |
| 05:15 PM | 7 | **200** | 39 | 0 | 246 | 33 | 0 | 3 | 0 | 36 | 10 | 134 | **3** | 0 | 147 | **2** | 0 | **7** | 0 | **9** | 438 |
| 05:30 PM | **12** | 180 | 58 | 0 | **250** | 33 | 0 | 0 | 0 | 33 | **13** | 129 | 2 | **1** | 145 | 0 | **1** | 7 | 0 | 8 | 436 |
| 05:45 PM | 10 | 163 | **59** | 0 | 232 | 42 | 0 | 5 | 0 | 47 | 10 | 143 | 3 | 0 | **156** | 2 | 0 | 7 | 0 | 9 | **444** |
| Total Volume | 33 | 711 | 193 | 0 | 937 | 157 | 1 | 13 | 0 | 171 | 33 | 557 | 9 | 1 | 600 | 5 | 1 | 24 | 0 | 30 | 1738 |
| % App. Total | 3.5 | 75.9 | 20.6 | 0 | | 91.8 | 0.6 | 7.6 | 0 | | 5.5 | 92.8 | 1.5 | 0.2 | | 16.7 | 3.3 | 80 | 0 | | |
| PHF | .688 | .889 | .818 | .000 | .937 | .801 | .250 | .650 | .000 | .777 | .635 | .922 | .750 | .250 | .962 | .625 | .250 | .857 | .000 | .833 | .979 |
| Passenger Veh | 33 | 707 | 192 | 0 | 932 | 156 | 1 | 13 | 0 | 170 | 31 | 554 | 9 | 1 | 595 | 5 | 1 | 24 | 0 | 30 | 1727 |
| % Passenger Veh | 100 | 99.4 | 99.5 | 0 | 99.5 | 99.4 | 100 | 100 | 0 | 99.4 | 93.9 | 99.5 | 100 | 100 | 99.2 | 100 | 100 | 100 | 0 | 100 | 99.4 |
| Trucks | 0 | 4 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 11 |
| % Trucks | 0 | 0.6 | 0.5 | 0 | 0.5 | 0.6 | 0 | 0 | 0 | 0.6 | 6.1 | 0.5 | 0 | 0 | 0.8 | 0 | 0 | 0 | 0 | 0 | 0.6 |

# Data Collection Group

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File Name : 5th and Stagecoach
Site Code :
Start Date : 9/2/2021
Page No : 5



# Data Collection Group

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Police office directed traffic in the AM

File Name : 5th and Stagecoach
Site Code :
Start Date : 9/2/2021
Page No : 1

Groups Printed- Bikes - Peds

| | 5th From North | | | | | Stagecoach From East | | | | | 5th From South | | | | | Apartments Access From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| 04:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 5 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 4 | 4 | 10 |
| Apprch % | 0 | 100 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 100 | 0 | 0 | | 0 | 0 | 0 | 100 | | |
| Total % | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 0 | 40 | 40 | |
| Bikes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 6 |
| % Bikes | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 60 |
| Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 |
| % Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 40 |

Data Collection Group
757.478.6761
LSmith@DataCollectionGroup.net

File Name : Old Lynchburg and Sunset
Site Code : 00003766
Start Date : 9/2/2021
Page No : 1

Groups Printed- Passenger Veh - Trucks

| | Old Lynchburg From North | | | | | Driveway From East | | | | | Old Lynchburg From South | | | | | Sunset From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| 07:00 AM | 11 | 6 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 34 | 1 | 0 | 35 | 0 | 36 | 87 |
| 07:15 AM | 9 | 23 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 2 | 0 | 54 | 2 | 0 | 62 | 0 | 64 | 150 |
| 07:30 AM | 8 | 22 | 0 | 4 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 62 | 1 | 0 | 63 | 1 | 0 | 71 | 0 | 72 | 169 |
| 07:45 AM | 14 | 31 | 0 | 2 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 0 | 72 | 0 | 0 | 55 | 0 | 55 | 174 |
| Total | 42 | 82 | 0 | 6 | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 220 | 3 | 0 | 223 | 4 | 0 | 223 | 0 | 227 | 580 |
| 08:00 AM | 29 | 22 | 0 | 1 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | 1 | 0 | 70 | 0 | 0 | 51 | 0 | 51 | 173 |
| 08:15 AM | 21 | 28 | 0 | 2 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 2 | 0 | 61 | 4 | 0 | 53 | 0 | 57 | 169 |
| 08:30 AM | 23 | 30 | 1 | 0 | 54 | 1 | 0 | 0 | 0 | 1 | 0 | 62 | 2 | 1 | 65 | 2 | 0 | 64 | 0 | 66 | 186 |
| 08:45 AM | 23 | 42 | 0 | 0 | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 3 | 0 | 53 | 2 | 0 | 43 | 0 | 45 | 163 |
| Total | 96 | 122 | 1 | 3 | 222 | 1 | 0 | 0 | 0 | 1 | 0 | 240 | 8 | 1 | 249 | 8 | 0 | 211 | 0 | 219 | 691 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 44 | 61 | 0 | 3 | 108 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 2 | 0 | 32 | 3 | 0 | 39 | 0 | 42 | 182 |
| 04:15 PM | 42 | 68 | 0 | 2 | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 4 | 0 | 35 | 0 | 0 | 36 | 0 | 36 | 183 |
| 04:30 PM | 40 | 59 | 0 | 2 | 101 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 46 | 2 | 0 | 44 | 0 | 46 | 193 |
| 04:45 PM | 56 | 26 | 0 | 2 | 84 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 33 | 2 | 0 | 62 | 0 | 64 | 181 |
| Total | 182 | 214 | 0 | 9 | 405 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 6 | 0 | 146 | 7 | 0 | 181 | 0 | 188 | 739 |
| 05:00 PM | 41 | 83 | 0 | 1 | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 1 | 0 | 35 | 4 | 0 | 51 | 0 | 55 | 215 |
| 05:15 PM | 36 | 82 | 1 | 3 | 122 | 1 | 0 | 0 | 0 | 1 | 0 | 38 | 1 | 0 | 39 | 7 | 0 | 48 | 0 | 55 | 217 |
| 05:30 PM | 37 | 82 | 0 | 2 | 121 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 2 | 0 | 42 | 5 | 0 | 36 | 0 | 41 | 204 |
| 05:45 PM | 47 | 47 | 0 | 1 | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 3 | 0 | 48 | 2 | 0 | 45 | 0 | 47 | 190 |
| Total | 161 | 294 | 1 | 7 | 463 | 1 | 0 | 0 | 0 | 1 | 0 | 157 | 7 | 0 | 164 | 18 | 0 | 180 | 0 | 198 | 826 |
| Grand Total | 481 | 712 | 2 | 25 | 1220 | 2 | 0 | 0 | 0 | 2 | 0 | 757 | 24 | 1 | 782 | 37 | 0 | 795 | 0 | 832 | 2836 |
| Apprch % | 39.4 | 58.4 | 0.2 | 2 | | 100 | 0 | 0 | 0 | | 0 | 96.8 | 3.1 | 0.1 | | 4.4 | 0 | 95.6 | 0 | | |
| Total % | 17 | 25.1 | 0.1 | 0.9 | 43 | 0.1 | 0 | 0 | 0 | 0.1 | 0 | 26.7 | 0.8 | 0 | 27.6 | 1.3 | 0 | 28 | 0 | 29.3 | |
| Passenger Veh | 467 | 696 | 2 | 25 | 1190 | 2 | 0 | 0 | 0 | 2 | 0 | 742 | 22 | 1 | 765 | 34 | 0 | 772 | 0 | 806 | 2763 |
| % Passenger Veh | 97.1 | 97.8 | 100 | 100 | 97.5 | 100 | 0 | 0 | 0 | 100 | 0 | 98 | 91.7 | 100 | 97.8 | 91.9 | 0 | 97.1 | 0 | 96.9 | 97.4 |
| Trucks | 14 | 16 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 2 | 0 | 17 | 3 | 0 | 23 | 0 | 26 | 73 |
| % Trucks | 2.9 | 2.2 | 0 | 0 | 2.5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.3 | 0 | 2.2 | 8.1 | 0 | 2.9 | 0 | 3.1 | 2.6 |

Data Collection Group
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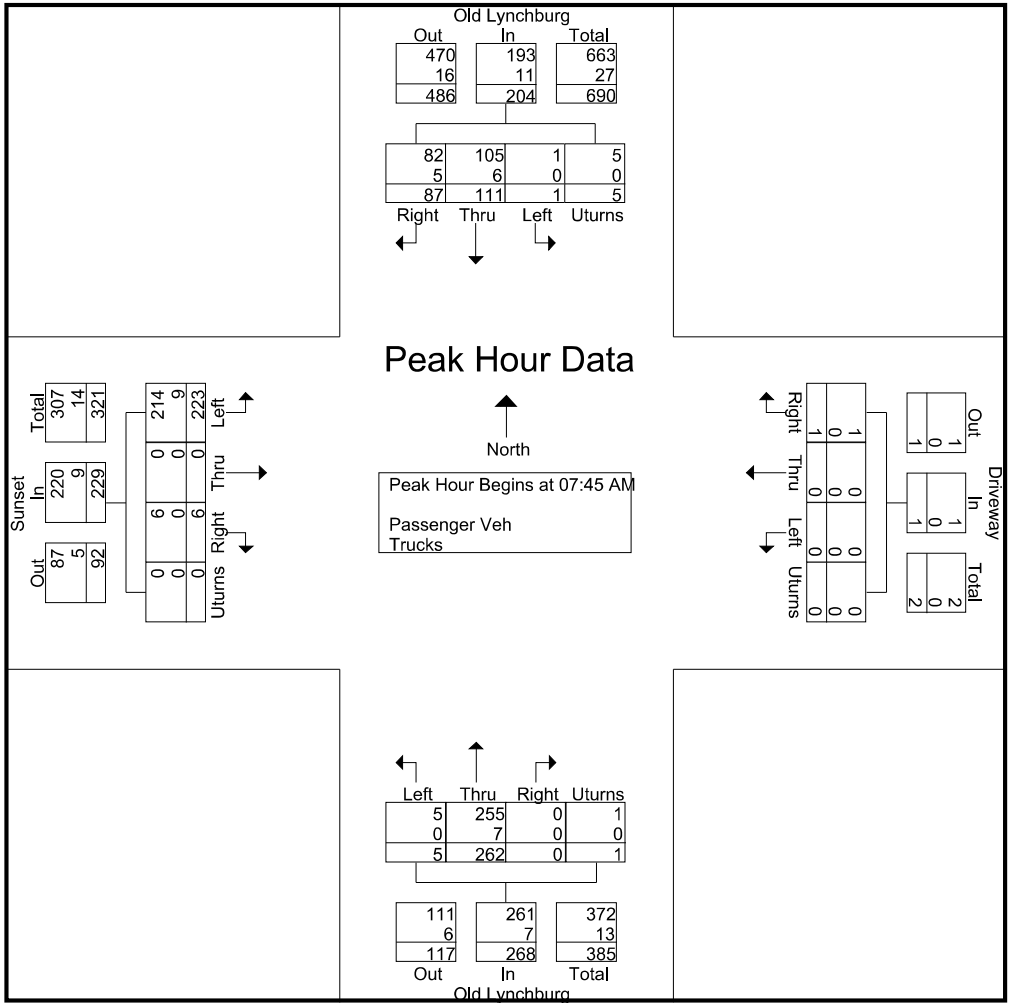
File Name : Old Lynchburg and Sunset
Site Code : 00003766
Start Date : 9/2/2021


| | Old Lynchburg From North | | | | | Driveway From East | | | | | Old Lynchburg From South | | | | | Sunset From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:45 AM | 14 | **31** | 0 | **2** | 47 | 0 | 0 | 0 | 0 | 0 | 0 | **72** | 0 | 0 | **72** | 0 | 0 | 55 | 0 | 55 | 174 |
| 08:00 AM | **29** | 22 | 0 | 1 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | 1 | 0 | 70 | 0 | 0 | 51 | 0 | 51 | 173 |
| 08:15 AM | 21 | 28 | 0 | 2 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | **2** | 0 | 61 | **4** | 0 | 53 | 0 | 57 | 169 |
| 08:30 AM | 23 | 30 | **1** | 0 | **54** | **1** | 0 | 0 | 0 | **1** | 0 | 62 | 2 | **1** | 65 | 2 | 0 | **64** | 0 | **66** | **186** |
| Total Volume | 87 | 111 | 1 | 5 | 204 | 1 | 0 | 0 | 0 | 1 | 0 | 262 | 5 | 1 | 268 | 6 | 0 | 223 | 0 | 229 | 702 |
| % App. Total | 42.6 | 54.4 | 0.5 | 2.5 | | 100 | 0 | 0 | 0 | | 0 | 97.8 | 1.9 | 0.4 | | 2.6 | 0 | 97.4 | 0 | | |
| PHF | .750 | .895 | .250 | .625 | .944 | .250 | .000 | .000 | .000 | .250 | .000 | .910 | .625 | .250 | .931 | .375 | .000 | .871 | .000 | .867 | .944 |
| Passenger Veh | 82 | 105 | 1 | 5 | 193 | 1 | 0 | 0 | 0 | 1 | 0 | 255 | 5 | 1 | 261 | 6 | 0 | 214 | 0 | 220 | 675 |
| % Passenger Veh | 94.3 | 94.6 | 100 | 100 | 94.6 | 100 | 0 | 0 | 0 | 100 | 0 | 97.3 | 100 | 100 | 97.4 | 100 | 0 | 96.0 | 0 | 96.1 | 96.2 |
| Trucks | 5 | 6 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 9 | 0 | 9 | 27 |
| % Trucks | 5.7 | 5.4 | 0 | 0 | 5.4 | 0 | 0 | 0 | 0 | 0 | 0 | 2.7 | 0 | 0 | 2.6 | 0 | 0 | 4.0 | 0 | 3.9 | 3.8 |

# Data Collection Group

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File Name : Old Lynchburg and Sunset
Site Code : 00003766
Start Date : 9/2/2021
Page No : 3



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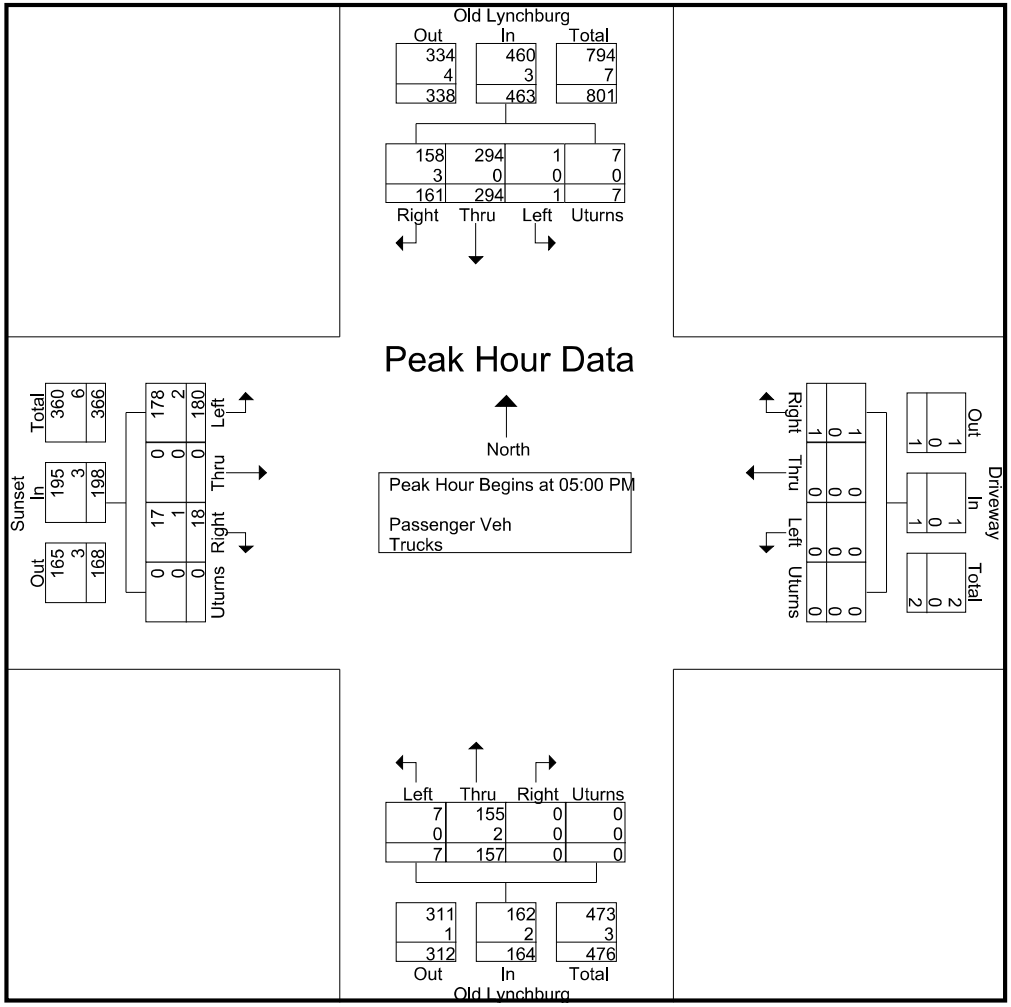
File Name : Old Lynchburg and Sunset
Site Code : 00003766
Start Date : 9/2/2021


| | Old Lynchburg From North | | | | | Driveway From East | | | | | Old Lynchburg From South | | | | | Sunset From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Right | Thru | Left | Uturns | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 41 | **83** | 0 | 1 | **125** | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 1 | 0 | 35 | 4 | 0 | **51** | 0 | **55** | 215 |
| 05:15 PM | 36 | 82 | **1** | **3** | 122 | **1** | 0 | 0 | 0 | **1** | 0 | 38 | 1 | 0 | 39 | **7** | 0 | 48 | 0 | 55 | **217** |
| 05:30 PM | 37 | 82 | 0 | 2 | 121 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 2 | 0 | 42 | 5 | 0 | 36 | 0 | 41 | 204 |
| 05:45 PM | **47** | 47 | 0 | 1 | 95 | 0 | 0 | 0 | 0 | 0 | 0 | **45** | **3** | 0 | **48** | 2 | 0 | 45 | 0 | 47 | 190 |
| Total Volume | 161 | 294 | 1 | 7 | 463 | 1 | 0 | 0 | 0 | 1 | 0 | 157 | 7 | 0 | 164 | 18 | 0 | 180 | 0 | 198 | 826 |
| % App. Total | 34.8 | 63.5 | 0.2 | 1.5 | | 100 | 0 | 0 | 0 | | 0 | 95.7 | 4.3 | 0 | | 9.1 | 0 | 90.9 | 0 | | |
| PHF | .856 | .886 | .250 | .583 | .926 | .250 | .000 | .000 | .000 | .250 | .000 | .872 | .583 | .000 | .854 | .643 | .000 | .882 | .000 | .900 | .952 |
| Passenger Veh | 158 | 294 | 1 | 7 | 460 | 1 | 0 | 0 | 0 | 1 | 0 | 155 | 7 | 0 | 162 | 17 | 0 | 178 | 0 | 195 | 818 |
| % Passenger Veh | 98.1 | 100 | 100 | 100 | 99.4 | 100 | 0 | 0 | 0 | 100 | 0 | 98.7 | 100 | 0 | 98.8 | 94.4 | 0 | 98.9 | 0 | 98.5 | 99.0 |
| Trucks | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 3 | 8 |
| % Trucks | 1.9 | 0 | 0 | 0 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 1.3 | 0 | 0 | 1.2 | 5.6 | 0 | 1.1 | 0 | 1.5 | 1.0 |

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File Name : Old Lynchburg and Sunset
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# Data Collection Group

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File Name : Old Lynchburg and Sunset
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Groups Printed- Bikes - Peds

| | Old Lynchburg From North | | | | | Driveway From East | | | | | Old Lynchburg From South | | | | | Sunset From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 4 | 5 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 7 | 8 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 4 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 2 | 7 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 2 |
| 05:00 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 4 | 1 | 0 | 0 | 0 | 1 | 6 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 4 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 1 | 1 | 4 |
| Total | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 6 | 9 | 3 | 0 | 0 | 1 | 4 | 15 |
| Grand Total | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 10 | 0 | 6 | 16 | 3 | 0 | 0 | 11 | 14 | 32 |
| Apprch % | 100 | 0 | 0 | 0 | | 0 | 0 | 0 | 100 | | 0 | 62.5 | 0 | 37.5 | | 21.4 | 0 | 0 | 78.6 | | |
| Total % | 3.1 | 0 | 0 | 0 | 3.1 | 0 | 0 | 0 | 3.1 | 3.1 | 0 | 31.2 | 0 | 18.8 | 50 | 9.4 | 0 | 0 | 34.4 | 43.8 | |
| Bikes | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 3 | 0 | 0 | 0 | 3 | 14 |
| % Bikes | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 62.5 | 100 | 0 | 0 | 0 | 21.4 | 43.8 |
| Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 11 | 11 | 18 |
| % Peds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 100 | 37.5 | 0 | 0 | 0 | 100 | 78.6 | 56.2 |

# Appendix C
# Existing Signal Timings

# SEPAC ECOM All Data

10/15/2018
9:39:51AM

Intersection Name: **I-64/ 5th ST EB Ramp Alb** Intersection Alias: **02159**

## Access Data

1 :**1200/1312 Baud**
3 :**19200 Baud**

Access Code: **9999** Channel: 1 Address: **1**

Revision: **3.34g** IP Address:

## Phase Initialization Data

| Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Initial | 1-Inact | 4-Grn | 0-None | 1-Inact | 0-None | 4-Grn | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None |

## PHASE DATA

| | Vehical Basic Timings | | | | | | Misc Timings | | | | | | Pedestrian Timings | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | Min Green | Passage | Max1 | Max2 | Yellow | All Red | Green Delay | Yellow Delay | Walk Off | Walk Offset Mode | Bike Green | Bike Psg | Walk | Ped Clr | Alt Walk | Alt Ped Clr | Flash Walk | Ext Ped Clr | Actuated Rest in Walk |
| 1 | 8 | 3.5 | 18 | 18 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 2 | 10 | 3.0 | 40 | 40 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 3 | 0 | 0.0 | 0 | 0 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 4 | 10 | 3.5 | 55 | 25 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 5 | 0 | 0.0 | 0 | 0 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 6 | 10 | 3.0 | 40 | 40 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 7 | 0 | 0.0 | 0 | 0 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 8 | 0 | 0.0 | 0 | 0 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 9 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 10 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 11 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 12 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 13 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 14 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 15 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 16 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |

| | Vehicle Density Timings | | | | | | General Control | | | | Miscellaneous | | | | | Special Sequence | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Added Initial | Max Initial | Time B4 Redu | Car B4 Redu | Time To Redu | Min Gap | Non-Act Response | Veh Recall | Ped Recall | Recall Delay | Non Lock | Dual Entry | Last Car Pass | Condit Service | No Simu Gap Out | Omit | Minus Yel | Omit Call |
| 1 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | Yes | No | No | No | No | 0 | 0 | 0 |
| 2 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | NonActI | Min | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 3 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 4 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | Yes | No | No | No | No | 0 | 0 | 0 |
| 5 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 6 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | NonActI | Min | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 7 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 8 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 9 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 10 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 11 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 12 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 13 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 14 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 15 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |

Vehical Detector Phase Assignment

| | Assign Phase | Mode | Switch Phase | Extend | Delay |
|---|---|---|---|---|---|
| Veh Det:1 | 1 | Veh | 0 | 0.0 | 5 |
| Veh Det:2 | 2 | Veh | 0 | 0.0 | 0 |
| Veh Det:3 | 1 | Veh | 0 | 0.0 | 0 |
| Veh Det:4 | 4 | Veh | 0 | 0.0 | 0 |
| Veh Det:5 | 5 | Veh | 0 | 0.0 | 0 |
| Veh Det:6 | 6 | Veh | 0 | 0.0 | 0 |
| Veh Det:7 | 7 | Veh | 0 | 0.0 | 0 |
| Veh Det:8 | 8 | Veh | 0 | 0.0 | 0 |

Pedestrian Detector

| Assign Phase | Mode | Switch Phase | Extend | Delay |
|---|---|---|---|---|

**Default Data**

Special Detector Phase Assignment

| Assign Phase | Mode | Switch Phase | Extend | Delay |
|---|---|---|---|---|

:

**Default Data**

# Unit Data

## General Control

**Startup Time:** 0sec
**Startup State:** Flash
**Red Revert:** 40sec
**Auto Ped Clr:** No
**Stop T Reset:** No
**Alt Sequence:** 0
**Special Seq:** 0-Standard

**I/O Modes:**

**ABC Input(Entry) Modes:** 0
**ABC Output(O/STS) Modes:** 0
**D Input(Entry) Modes:** 2
**D Output(O/STS) Modes:** 2

| Ring | Input Respons | Output Selection |
|---|---|---|
| 1 | Ring 1 | Ring 1 |
| 2 | Ring 2 | Ring 2 |
| 3 | None | None |
| 4 | None | None |

## Remote Flash

Test A = Flash

| Phase | Entry | Exit |
|---|---|---|

**Default Data**
**- No Flash**

**Default Data**
**- No Flash**

## Overlaps

Overlaps

| Phase(s) | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## Start Green

Overlaps

| Phase(s) | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trail Green | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trail Yellow | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Trail Red | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| TG Preempt | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stop Grn/Yel Phase | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Ring

| Phase | Ring | Next Phase |
|---|---|---|
| 1 | 1 | 2 |
| 2 | 1 | 3 |
| 4 | 1 | 1 |
| 6 | 2 | 7 |

Phase(s)

| Concurrent Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 1 | 3 | 3 | 9 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 5 | 5 | 7 | 7 | 2 | 2 | 4 | 4 | | | | | | | | |
| | 6 | 6 | 8 | 8 | 5 | 6 | 7 | 8 | | | | | | | | |

Alternate Sequences

| | Ph. Pair 1 | Ph. Pair 2 | Ph. Pair 3 | Ph. Pair 4 |
|---|---|---|---|---|
| Alt. Seq. 1 | **1/2** | | | |
| Alt. Seq. 2 | **3/4** | | | |
| Alt. Seq. 3 | **1/2** | **3/4** | | |
| Alt. Seq. 4 | **5/6** | | | |
| Alt. Seq. 5 | **1/2** | **5/6** | | |
| Alt. Seq. 6 | **3/4** | **5/6** | | |
| Alt. Seq. 7 | **1/2** | **3/4** | **5/6** | |
| Alt. Seq. 8 | **7/8** | | | |
| Alt. Seq. 9 | **1/2** | **7/8** | | |
| Alt. Seq. | **3/4** | **7/8** | | |
| Alt. Seq. | **1/2** | **3/4** | **7/8** | |
| Alt. Seq. | **5/6** | **7/8** | | |
| Alt. Seq. | **1/2** | **5/6** | **7/8** | |
| Alt. Seq. | **3/4** | **5/6** | **7/8** | |
| Alt. Seq. | **1/2** | **3/4** | **5/6** | **7/8** |

**Port 1 Data**

| BIU Addr | Port Status | Basic Det | Message 40 |
|---|---|---|---|

Default Data

## Signal Driver Ouput

| Channel | Control | Hardware Pins |
|---|---|---|
| 1 | 1 - Veh Phase 1 | 1 - Phase 1 RYG |
| 2 | 2 - Veh Phase 2 | 2 - Phase 2 RYG |
| 3 | 3 - Veh Phase 3 | 3 - Phase 3 RYG |
| 4 | 4 - Veh Phase 4 | 4 - Phase 4 RYG |
| 5 | 5 - Veh Phase 5 | 5 - Phase 5 RYG |
| 6 | 6 - Veh Phase 6 | 6 - Phase 6 RYG |
| 7 | 7 - Veh Phase 7 | 7 - Phase 7 RYG |
| 8 | 8 - Veh Phase 8 | 8 - Phase 8 RYG |
| 9 | 33 - Overlap A | 17 - Overlap A RYG |
| 10 | 34 - Overlap B | 18 - Overlap B RYG |
| 11 | 35 - Overlap C | 19 - Overlap C RYG |
| 12 | 36 - Overlap D | 20 - Overlap D RYG |
| 13 | 18 - Ped Phase 2 | 10 - Phase 2 DPW |
| 14 | 20 - Ped Phase 4 | 12 - Phase 4 DPW |
| 15 | 22 - Ped Phase 6 | 14 - Phase 6 DPW |
| 16 | 24 - Ped Phase 8 | 16 - Phase 8 DPW |
| 17 | 17 - Ped Phase 1 | 9 - Phase 1 DPW |
| 18 | 19 - Ped Phase 3 | 11 - Phase 3 DPW |
| 19 | 21 - Ped Phase 5 | 13 - Phase 5 DPW |
| 20 | 23 - Ped Phase 7 | 15 - Phase 7 DPW |

# Coordination Data

**General Coordination Data**

**Operation Mode:** 0=Free
**Coordination Mode:** 0=Permissive
**Maximun Mode:** 0=Inhibit
**Correction Mode:** 2=Short Way

**Offset Mode:** 0=Beg Grn
**Force Mode:** 1=Cycle
**Max Dwell Time:** 0
**Yield Period:** 90

**Manual Dial:** 1
**Manual Split:** 1
**Manual Offset:** 1

| Dial/Split | Cycle |
|---|---|
| 1/1 | 90 |
| 1/2 | 90 |
| 2/1 | 70 |
| 3/1 | 90 |
| 3/2 | 90 |

## Split Times and Phase Modes

**Dial** 1 / **Split** 1

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | 0=Actuated | 2 | 35 | 1=Coordinate | 4 | 25 | 0=Actuated | 6 | 60 | 1=Coordinate |

**Dial** 1 / **Split** 2

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | 0=Actuated | 2 | 30 | 1=Coordinate | 4 | 35 | 0=Actuated | 6 | 55 | 1=Coordinate |

**Dial** 2 / **Split** 1

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 0=Actuated | 2 | 25 | 1=Coordinate | 4 | 25 | 0=Actuated | 6 | 39 | 1=Coordinate |

**Dial** 3 / **Split** 1

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | 0=Actuated | 2 | 40 | 1=Coordinate | 4 | 25 | 0=Actuated | 6 | 65 | 1=Coordinate |

**Dial** 3 / **Split** 2

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | 0=Actuated | 2 | 30 | 1=Coordinate | 4 | 30 | 0=Actuated | 6 | 44 | 1=Coordinate |

**Traffic Plan Data**

| | | | | | |
|---|---|---|---|---|---|
| Plan: 1/2/1 | Offset Time: 0 | Alternat Sequence: 1 | Rg 2 Lag Time: 0 | Rg 3 Lag Time: 0 | Rg 4 Lag Time: 0 |
| | Mode: 2=Yield | Special Function: 0 | Correction Mode: 0=No | | |

| | | | | | |
|---|---|---|---|---|---|
| Plan: 2/1/1 | Offset Time: 0 | Alternat Sequence: 1 | Rg 2 Lag Time: 0 | Rg 3 Lag Time: 0 | Rg 4 Lag Time: 0 |
| | Mode: 2=Yield | Special Function: 0 | Correction Mode: 0=No | | |

| Plan: 3/2/1 | Offset Time: 0 | Alternat Sequence: 1 | Rg 2 Lag Time: 0 | Rg 3 Lag Time: 0 | Rg 4 Lag Time: 0 |
|---|---|---|---|---|---|
| | Mode: 2=Yield | Special Function: 0 | Correction Mode: 0=No | | |

## Local TBC Data

Start of Daylight Saving Month: 3 Week: 2 Cycle Zero Reference Hours: 1 Min: 0

End of Daylight Saving Month: 11 Week: 1

| Source Day | Equate Days 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 3 | 4 | 5 | 6 | 0 | 0 | 0 |

## Traffic Data

| Event | Day | Time | D/S/O | flash | PHASE FUNCTION 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0:0 | 0/0/4 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2 | 1 | 7:0 | 2/1/1 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3 | 1 | 20:0 | 0/0/4 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4 | 2 | 0:0 | 0/0/4 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5 | 2 | 6:30 | 1/2/1 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6 | 2 | 9:0 | 2/1/1 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7 | 2 | 15:30 | 3/2/1 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8 | 2 | 18:30 | 2/1/1 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9 | 2 | 20:0 | 0/0/4 | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

## AUX. Events

| Event | Program Day | Hour | Min. | Aux 1 | Ouputs 2 | 3 | Det. Diag. D1 | Det. Rpt. D2 | Det. Mult100 D3 | Dimmin | Special Function Outputs 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Default Data - No Special Day(s) or Week(s) Programmed

## Special Functions

| Function | SF1 | SF2 | SF3 | SF4 | SF5 | SF6 | SF7 | SF8 | SF9 | SF10 | SF11 | SF12 | SF13 | SF14 | SF15 | SF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Special Function 1 | X | | | | | | | | | | | | | | | |
| Special Function 2 | | X | | | | | | | | | | | | | | |
| Special Function 3 | | | X | | | | | | | | | | | | | |
| Special Function 4 | | | | X | | | | | | | | | | | | |
| Special Function 5 | | | | | X | | | | | | | | | | | |
| Special Function 6 | | | | | | X | | | | | | | | | | |
| Special Function 7 | | | | | | | X | | | | | | | | | |
| Special Function 8 | | | | | | | | X | | | | | | | | |

## Phase Function

| | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase 1 Max2 | X | | | | | | | | | | | | | | | |
| Phase 2 Max2 | | X | | | | | | | | | | | | | | |
| Phase 3 Max2 | | | X | | | | | | | | | | | | | |
| Phase 4 Max2 | | | | X | | | | | | | | | | | | |
| Phase 5 Max2 | | | | | X | | | | | | | | | | | |
| Phase 6 Max2 | | | | | | X | | | | | | | | | | |
| Phase 7 Max2 | | | | | | | X | | | | | | | | | |
| Phase 8 Max2 | | | | | | | | X | | | | | | | | |

## Phase Omit

| | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase 1 Phase Omit | | | | | | | | | X | | | | | | | |
| Phase 2 Phase Omit | | | | | | | | | | X | | | | | | |
| Phase 3 Phase Omit | | | | | | | | | | | X | | | | | |
| Phase 4 Phase Omit | | | | | | | | | | | | X | | | | |
| Phase 5 Phase Omit | | | | | | | | | | | | | X | | | |
| Phase 6 Phase Omit | | | | | | | | | | | | | | X | | |
| Phase 7 Phase Omit | | | | | | | | | | | | | | | X | |
| Phase 8 Phase Omit | | | | | | | | | | | | | | | | X |

## Ped Omit

| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

## Veh Det Coord ReSvc

| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

## Function Phase Recall

| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

## Phase Min Recall

| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

| Veh Det Ped Recall | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| Veh Det Bike Recall | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Vehicle Function

| Veh Det Switch Omit | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| Veh Det Switch Now | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| Veh Det Switch Also | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Overlap Function

| | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

**Dimming Data**

**Default Data - No Dimming Programmed**

**Lane Defination**

| Lanes | Name | Green Inbound | Yellow Inbound | Red Inbound | Green Outbound | Yellow Outbound |
|---|---|---|---|---|---|---|

**Default Data - Lane Defination**

## Preemption Data

**General Preemption Data**

| | | |
|---|---|---|
| Flash > Preempt 1 | Preempt 2 = Preempt 3 | Preempt 4 = Preempt 5 |
| Preempt 1 > Preempt 2 | Preempt 3 = Preempt 4 | Preempt 5 = Preempt 6 |

**Preempt Timers**

| Preempt | Non-Locking | Link to Preempt | Delay | Ext end | Duration | Max Call | Lock-Out | Min Green | Min Walk | Debounce | Gate ext end | Select: Ped Clear | Select: Yel | Select: Red | Track: Grn | Track: Ped | Track: Yel | Track: Red | Dwell Green | Return: Ped Clear | Return: Yel | Return: Red |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | No | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 40 | 20 | 10 | 8 | 40 | 20 | 10 | 8 | 40 | 20 |
| 2 | Yes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 5 | 0 | 40 | 20 |
| 3 | No | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 40 | 20 | 10 | 8 | 40 | 20 | 10 | 8 | 40 | 20 |
| 4 | Yes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 5 | 0 | 40 | 20 |
| 5 | Yes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 5 | 0 | 40 | 20 |
| 6 | Yes | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 40 | 0 | 40 | 20 |

| Preempt 1 | | | Preempt 2 | | | Preempt 3 | | | Preempt 4 | | | Preempt 5 | | | Preempt 6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls |
| 1 | No | Yes | 2 | Yes | No | 1 | No | Yes | 2 | Yes | No | 2 | Yes | No | 1 | Yes | No |
| 2 | No | Yes | 6 | Yes | No | 2 | No | Yes | 6 | Yes | No | 6 | Yes | No | 6 | Yes | No |
| 3 | No | Yes | | | | 3 | No | Yes | | | | | | | | | |
| 4 | No | Yes | | | | 4 | No | Yes | | | | | | | | | |
| 5 | No | Yes | | | | 5 | No | Yes | | | | | | | | | |
| 6 | No | Yes | | | | 6 | No | Yes | | | | | | | | | |
| 7 | No | Yes | | | | 7 | No | Yes | | | | | | | | | |
| 8 | No | Yes | | | | 8 | No | Yes | | | | | | | | | |

## Priority Timers

| Priority | Non-Locking | Delay | Ext end | Free Dial | Free Split | Min Green | No Lock out | Lock out A | Lock out B | Max Green | Pre-Green | Recall | Excl-co Phase Svc. | Transit Overlap | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | Signal Type | Blankout |

## Priority Detector Channels

**Priority**

Detector

## Priority Fixed Phases

**Priority**

Legend: 0 FALSE 1 TRUE
CO-PHASE
QJ-PHASE

**Priority**

**Priority Bank :** Level

| Partial Priority | Full Priority | Recovery |
|---|---|---|
| Alt Seq | Freq. Override | Method |
| Alt Seq Enabled | Ped skip | Return |
| Min Walk | Force full Priority | PedWait |
| | Frequency | PedOverride |
| | Freq. Level | |

Codes: 0 FALSE X TRUE

| Priority : | Priority : | Priority : |
|---|---|---|
| Priority Bank :<br>Queu Phase Detector Time<br>Default data | Priority Bank :<br>Queu Phase Detector Time<br>Default data | Priority Bank :<br>Queu Phase Detector Time<br>Default data |
| **Priority :** | **Priority :** | **Priority :** |
| **Priority Bank :**<br>Queu Phase Detector Time<br>**Default data** | **Priority Bank :**<br>Queu Phase Detector Time<br>**Default data** | **Priority Bank :**<br>Queu Phase Detector Time<br>**Default data** |

| Priority :<br>Bank<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>Default Data | Priority :<br>Bank<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>Default Data |
|---|---|
| Priority :<br>Bank<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>Default Data | Priority :<br>Bank<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>Default Data |
| Priority :<br>Bank<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>Default Data | Priority :<br>Bank<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>Default Data |

**Preempt 1**

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph | Track | Dwell | Cycle | Ovlp | Track | Dwell | Cycle |
| **Default Data** | | | | **Default Data** | | | | **Default Data** | | | |

**Preempt 2**

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph. | Track | Dwell | Cycle | Ovlp. | Track | Dwell | Cycle |
| 2 | Red | Green | No | | | | | | | | |
| **Default Data** | | | | | | | | **Default Data** | | | |

**Preempt 3**

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph. | Track | Dwell | Cycle | Ovlp. | Track | Dwell | Cycle |
| **Default Data** | | | | **Default Data** | | | | **Default Data** | | | |

**Preempt 4**

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph. | Track | Dwell | Cycle | Ovlp. | Track | Dwell | Cycle |
| 4 | Red | Green | No | | | | | | | | |
| **Default Data** | | | | | | | | **Default Data** | | | |

## Preempt 5

**Vehical Phases**

| Ph. | Track | Dwell | Cycle |
|---|---|---|---|
| 1 | Red | Green | No |
| 6 | Red | Green | No |

**Pedestrian Phases**

| Ph. | Track | Dwell | Cycle |
|---|---|---|---|

**Default Data**

**Overlaps**

| Ovlp. | Track | Dwell | Cycle |
|---|---|---|---|
| 1 | Red | Flash | No |
| 3 | Red | Flash | No |

## Preempt 6

**Vehical Phases**

| Ph. | Track | Dwell | Cycle |
|---|---|---|---|
| 4 | Red | Green | No |

**Pedestrian Phases**

| Ph. | Track | Dwell | Cycle |
|---|---|---|---|

**Default Data**

**Overlaps**

| Ovlp. | Track | Dwell | Cycle |
|---|---|---|---|

**Default Data**

# System/Detectors Data

Local Critical Alarms

Revert to Backup: 15

1st Phone:

2nd Phone:

Local Free: No  Cycle Failure: No  Coord Failure: No  Conflict Flash: No  Remote Flash: No

Local Fash: No  Cycle Fault: No  Coord Fault: No  Premption: No  Voltage Monitor: No

Special Status 1: No  Special Status 2: No  Special Status 3: No  Special Status 4: No  Special Status 5: No  Special Status 6: No

## Traffic Responsive

| System Detector | Detector Channel | Name | Veh/ Hr | Average Time(mins) | Occupancy Correction/10 | Min Volume % | Queue 1 Detectors | System Detectors | Weight Factor | Queue 2 Detectors | System Detectors | Weight Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Default Data**

Sample Interval:

**Default Data**

**Queue: 1** Input Selection: 0=Average

Detector Failed Level : 0

**Queue: 2** Input Selection: 0=Average

Detector Failed Level : 0

**Default Data**

**Queue:**

| Level | Enter | Leave | Dial / Split / Offset |
|---|---|---|---|
| | | | / / |

**Default Data**

**Vehical Detector**

Diagnostic Value 0

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Vehical Detector**

Diagnostic Value 1

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Special Detector**

Diagnostic Value 0

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Default Data - Diag 0 Values**

**Default Data - No Diag 1 Values**

**Default Data - No Diag 0 Valu**

**Pedestrian Detector**

Diagnostic Value 0

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Pedestrian Detector**

Diagnostic Value 1

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Special Detector**

Diagnostic Value 1

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Default Data - No Diag 0 Values**

**Default Data - No Diag 1 Values**

**Default Data - No Diag 1 Values**

## Speed Trap Data

Speed Trap:

Measurement:

Detector 1  Detector_2  Distance :

Dial/Split/Offset

//

**Default Data**

| Speed Trap Low Treshold | Speed Trap High Treshold |
|---|---|

**Default Data**

## Volume Detector Data

Report Interval  0

| Volume Detector Number | Controller Detector Channel |
|---|---|

**Default Data**

# SEPAC ECOM All Data

10/15/2018
9:35:10AM

Intersection Name: **I-64/ 5th ST WB Ramp Albe** Intersection Alias: **02181**

## Access Data

1 :**1200/1312 Baud**
3 :**19200 Baud**

Access Code: **9999** Channel: 1 Address: **2**

Revision: **3.34g** IP Address:

## Phase Initialization Data

| Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Initial | 0-None | 4-Grn | 0-None | 1-Inact | 1-Inact | 4-Grn | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None | 0-None |

## PHASE DATA

| Vehical Basic Timings | | | | | | | Misc Timings | | | | | | Pedestrian Timings | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | Min Green | Passage | Max1 | Max2 | Yellow | All Red | Green Delay | Yellow Delay | Walk Off | Walk Offset Mode | Bike Green | Bike Psg | Walk | Ped Clr | Alt Walk | Alt Ped Clr | Flash Walk | Ext Ped Clr | Actuated Rest in Walk |
| 1 | 0 | 0.0 | 0 | 0 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 2 | 10 | 3.5 | 40 | 40 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 3 | 0 | 0.0 | 0 | 0 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 4 | 8 | 3.0 | 35 | 35 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 5 | 8 | 3.0 | 20 | 20 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 6 | 10 | 3.5 | 40 | 40 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 7 | 0 | 0.0 | 0 | 0 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 8 | 0 | 0.0 | 0 | 0 | 4.0 | 2.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 9 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 10 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 11 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 12 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 13 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 14 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 15 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |
| 16 | 0 | 0.0 | 0 | 0 | 3.0 | 0.0 | 0 | 0 | 0 | 0-Advance | 0 | 0.0 | 0 | 0 | 0 | | No | 0 | No |

| Vehicle Density Timings | | | | | | | General Control | | | | Miscellaneous | | | | | Special Sequence | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Added Initial | Max Initial | Time B4 Redu | Car B4 Redu | Time To Redu | Min Gap | Non-Act Response | Veh Recall | Ped Recall | Recall Delay | Non Lock | Dual Entry | Last Car Pass | Condit Service | No Simu Gap Out | Omit | Minus Yel | Omit Call |
| 1 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 2 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | NonActI | Min | None | 0 | Yes | No | No | No | No | 0 | 0 | 0 |
| 3 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 4 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | NonActII | None | None | 0 | Yes | No | No | No | No | 0 | 0 | 0 |
| 5 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | Yes | No | No | No | No | 0 | 0 | 0 |
| 6 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | NonActI | Min | None | 0 | Yes | No | No | No | No | 0 | 0 | 0 |
| 7 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 8 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | NonActII | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 9 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 10 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 11 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 12 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 13 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 14 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |
| 15 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | None | None | None | 0 | No | No | No | No | No | 0 | 0 | 0 |

Vehical Detector Phase Assignment

| | Assign Phase | Mode | Switch Phase | Extend | Delay |
|---|---|---|---|---|---|
| Veh Det:1 | 1 | Veh | 0 | 0.0 | 0 |
| Veh Det:2 | 2 | Veh | 0 | 0.0 | 0 |
| Veh Det:3 | 3 | Veh | 0 | 0.0 | 0 |
| Veh Det:4 | 4 | Veh | 0 | 0.0 | 0 |
| Veh Det:5 | 5 | Veh | 0 | 0.0 | 5 |
| Veh Det:6 | 6 | Veh | 0 | 0.0 | 0 |
| Veh Det:7 | 7 | Veh | 0 | 0.0 | 0 |
| Veh Det:8 | 8 | Veh | 0 | 0.0 | 0 |

Pedestrian Detector

| Assign Phase | Mode | Switch Phase | Extend | Delay |
|---|---|---|---|---|

**Default Data**

Special Detector Phase Assignment

| Assign Phase | Mode | Switch Phase | Extend | Delay |
|---|---|---|---|---|

:

**Default Data**

# Unit Data

## General Control

**Startup Time:** 0sec
**Startup State:** Flash
**Red Revert:** 40sec
**Auto Ped Clr:** No
**Stop T Reset:** No
**Alt Sequence:** 0
**Special Seq:** 0-Standard

**I/O Modes:**

**ABC Input(Entry) Modes:** 0
**ABC Output(O/STS) Modes:** 0
**D Input(Entry) Modes:** 2
**D Output(O/STS) Modes:** 2

| Ring | Input Respons | Output Selection |
|---|---|---|
| 1 | Ring 1 | Ring 1 |
| 2 | Ring 2 | Ring 2 |
| 3 | None | None |
| 4 | None | None |

## Remote Flash

Test A = Flash

| Phase | Entry | Exit |
|---|---|---|

**Default Data**
**- No Flash**

**Default Data**
**- No Flash**

## Overlaps

| | Overlaps | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
| Phase(s) | 9 | 10 | | 12 | | | | | | | | | | | | |

## Start Green

| | Overlaps | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
| Phase(s) | | | | | | | | | | | | | | | | |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trail Green | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trail Yellow | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Trail Red | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| TG Preempt | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stop Grn/Yel Phase | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Ring

| Phase | Ring | Next Phase |
|---|---|---|
| 2 | 1 | 3 |
| 4 | 1 | 1 |
| 5 | 2 | 6 |
| 6 | 2 | 7 |

| | Phase(s) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Concurrent Phases | 1 | 2 | 3 | 4 | 1 | 1 | 3 | 3 | 9 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 5 | 5 | 7 | 7 | 2 | 2 | 4 | 4 | | | | | | | | |
| | 6 | 6 | 8 | 8 | 5 | 6 | 7 | 8 | | | | | | | | |

Alternate Sequences

| | Ph. Pair 1 | Ph. Pair 2 | Ph. Pair 3 | Ph. Pair 4 |
|---|---|---|---|---|
| Alt. Seq. 1 | **1/2** | | | |
| Alt. Seq. 2 | **3/4** | | | |
| Alt. Seq. 3 | **1/2** | **3/4** | | |
| Alt. Seq. 4 | **5/6** | | | |
| Alt. Seq. 5 | **1/2** | **5/6** | | |
| Alt. Seq. 6 | **3/4** | **5/6** | | |
| Alt. Seq. 7 | **1/2** | **3/4** | **5/6** | |
| Alt. Seq. 8 | **7/8** | | | |
| Alt. Seq. 9 | **1/2** | **7/8** | | |
| Alt. Seq. | **3/4** | **7/8** | | |
| Alt. Seq. | **1/2** | **3/4** | **7/8** | |
| Alt. Seq. | **5/6** | **7/8** | | |
| Alt. Seq. | **1/2** | **5/6** | **7/8** | |
| Alt. Seq. | **3/4** | **5/6** | **7/8** | |
| Alt. Seq. | **1/2** | **3/4** | **5/6** | **7/8** |

**Port 1 Data**

| BIU Addr | Port Status | Basic Det | Message 40 |
|---|---|---|---|

Default Data

## Signal Driver Ouput

| Channel | Control | Hardware Pins |
|---|---|---|
| 1 | 1 - Veh Phase 1 | 1 - Phase 1 RYG |
| 2 | 2 - Veh Phase 2 | 2 - Phase 2 RYG |
| 3 | 3 - Veh Phase 3 | 3 - Phase 3 RYG |
| 4 | 4 - Veh Phase 4 | 4 - Phase 4 RYG |
| 5 | 5 - Veh Phase 5 | 5 - Phase 5 RYG |
| 6 | 6 - Veh Phase 6 | 6 - Phase 6 RYG |
| 7 | 7 - Veh Phase 7 | 7 - Phase 7 RYG |
| 8 | 8 - Veh Phase 8 | 8 - Phase 8 RYG |
| 9 | 0 - None | 17 - Overlap A RYG |
| 10 | 0 - None | 18 - Overlap B RYG |
| 11 | 35 - Overlap C | 19 - Overlap C RYG |
| 12 | 0 - None | 20 - Overlap D RYG |
| 13 | 18 - Ped Phase 2 | 10 - Phase 2 DPW |
| 14 | 20 - Ped Phase 4 | 12 - Phase 4 DPW |
| 15 | 22 - Ped Phase 6 | 14 - Phase 6 DPW |
| 16 | 24 - Ped Phase 8 | 16 - Phase 8 DPW |
| 17 | 17 - Ped Phase 1 | 9 - Phase 1 DPW |
| 18 | 19 - Ped Phase 3 | 11 - Phase 3 DPW |
| 19 | 21 - Ped Phase 5 | 13 - Phase 5 DPW |
| 20 | 23 - Ped Phase 7 | 15 - Phase 7 DPW |

# Coordination Data

**General Coordination Data**

**Operation Mode:** 1=Auto
**Coordination Mode:** 0=Permissive
**Maximun Mode:** 0=Inhibit
**Correction Mode:** 2=Short Way
**Offset Mode:** 0=Beg Grn
**Force Mode:** 1=Cycle
**Max Dwell Time:** 0
**Yield Period:** 90
**Manual Dial:** 1
**Manual Split:** 1
**Manual Offset:** 1

| Dial/Split | Cycle |
|---|---|
| 1/1 | 90 |
| 1/2 | 90 |
| 2/1 | 70 |
| 3/1 | 90 |
| 3/2 | 90 |

## Split Times and Phase Modes

**Dial** 1 / **Split** 1

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 35 | 1=Coordinate | 4 | 25 | 0=Actuated | 5 | 30 | 0=Actuated | 6 | 35 | 1=Coordinate |

**Dial** 1 / **Split** 2

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 49 | 1=Coordinate | 4 | 25 | 0=Actuated | 5 | 30 | 0=Actuated | 6 | 35 | 1=Coordinate |

**Dial** 2 / **Split** 1

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 39 | 1=Coordinate | 4 | 25 | 0=Actuated | 5 | 20 | 0=Actuated | 6 | 25 | 1=Coordinate |

**Dial** 3 / **Split** 1

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 40 | 1=Coordinate | 4 | 25 | 0=Actuated | 5 | 25 | 0=Actuated | 6 | 40 | 1=Coordinate |

**Dial** 3 / **Split** 2

| Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode | Ph. | Splits | Ph. Mode |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 54 | 1=Coordinate | 4 | 25 | 0=Actuated | 5 | 25 | 0=Actuated | 6 | 40 | 1=Coordinate |

**Traffic Plan Data**

| | | | | | |
|---|---|---|---|---|---|
| Plan: 1/2/1 | Offset Time: 0 | Alternat Sequence: 4 | Rg 2 Lag Time: 0 | Rg 3 Lag Time: 0 | Rg 4 Lag Time: 0 |
| | Mode: 2=Yield | Special Function: 0 | Correction Mode: 0=No | | |
| Plan: 2/1/1 | Offset Time: 0 | Alternat Sequence: 4 | Rg 2 Lag Time: 0 | Rg 3 Lag Time: 0 | Rg 4 Lag Time: 0 |
| | Mode: 2=Yield | Special Function: 0 | Correction Mode: 0=No | | |
| Plan: 3/1/1 | Offset Time: 10 | Alternat Sequence: 0 | Rg 2 Lag Time: 0 | Rg 3 Lag Time: 0 | Rg 4 Lag Time: 0 |
| | Mode: 0=Normal | Special Function: 0 | Correction Mode: 0=No | | |

Plan: 3/2/1 Offset Time: 0 Alternat Sequence: 4 Rg 2 Lag Time: 0 Rg 3 Lag Time: 0 Rg 4 Lag Time: 0

Mode: 2=Yield Special Function: 0 Correction Mode: 0=No

## Local TBC Data

Start of Daylight Saving Month: 3 Week: 2 Cycle Zero Reference Hours: 1 Min: 0

End of Daylight Saving Month: 11 Week: 1

| Source Day | Equate Days 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 3 | 4 | 5 | 6 | 0 | 0 | 0 |

## Traffic Data

| Event | Day | Time | D/S/O | flash | PHASE FUNCTION 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0:0 | 0/0/4 | | | | | | | | | | | | | | | | | |
| 2 | 1 | 7:0 | 2/1/1 | | | | | | | | | | | | | | | | | |
| 3 | 1 | 20:0 | 0/0/4 | | | | | | | | | | | | | | | | | |
| 4 | 2 | 0:0 | 0/0/4 | | | | | | | | | | | | | | | | | |
| 5 | 2 | 6:30 | 1/2/1 | | | | | | | | | | | | | | | | | |
| 6 | 2 | 9:0 | 2/1/1 | | | | | | | | | | | | | | | | | |
| 7 | 2 | 15:30 | 3/2/1 | | | | | | | | | | | | | | | | | |
| 8 | 2 | 18:30 | 2/1/1 | | | | | | | | | | | | | | | | | |
| 9 | 2 | 20:0 | 0/0/4 | | | | | | | | | | | | | | | | | |

## AUX. Events

| Event | Program Day | Hour | Min. | Aux 1 | Ouputs 2 | 3 | Det. Diag. D1 | Det. Rpt. D2 | Det. Mult100 D3 | Dimmin | Special Function Outputs 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | |

Default Data - No Special Day(s) or Week(s) Programmed

## Special Functions

| Function | SF1 | SF2 | SF3 | SF4 | SF5 | SF6 | SF7 | SF8 | SF9 | SF10 | SF11 | SF12 | SF13 | SF14 | SF15 | SF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Special Function 1 | X | | | | | | | | | | | | | | | |
| Special Function 2 | | X | | | | | | | | | | | | | | |
| Special Function 3 | | | X | | | | | | | | | | | | | |
| Special Function 4 | | | | X | | | | | | | | | | | | |
| Special Function 5 | | | | | X | | | | | | | | | | | |
| Special Function 6 | | | | | | X | | | | | | | | | | |
| Special Function 7 | | | | | | | X | | | | | | | | | |
| Special Function 8 | | | | | | | | X | | | | | | | | |

## Phase Function

| | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase 1 Max2 | X | | | | | | | | | | | | | | | |
| Phase 2 Max2 | | X | | | | | | | | | | | | | | |
| Phase 3 Max2 | | | X | | | | | | | | | | | | | |
| Phase 4 Max2 | | | | X | | | | | | | | | | | | |
| Phase 5 Max2 | | | | | X | | | | | | | | | | | |
| Phase 6 Max2 | | | | | | X | | | | | | | | | | |
| Phase 7 Max2 | | | | | | | X | | | | | | | | | |
| Phase 8 Max2 | | | | | | | | X | | | | | | | | |

## Phase Omit

| | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase 1 Phase Omit | | | | | | | | | X | | | | | | | |
| Phase 2 Phase Omit | | | | | | | | | | X | | | | | | |
| Phase 3 Phase Omit | | | | | | | | | | | X | | | | | |
| Phase 4 Phase Omit | | | | | | | | | | | | X | | | | |
| Phase 5 Phase Omit | | | | | | | | | | | | | X | | | |
| Phase 6 Phase Omit | | | | | | | | | | | | | | X | | |
| Phase 7 Phase Omit | | | | | | | | | | | | | | | X | |
| Phase 8 Phase Omit | | | | | | | | | | | | | | | | X |

## Ped Omit

| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

## Veh Det Coord ReSvc

| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

## Function Phase Recall

| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

| | PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF10 | PF11 | PF12 | PF13 | PF14 | PF15 | PF16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase Min Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Veh Det Ped Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Veh Det Bike Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Function | | | | | | | | | | | | | | | | |
| Veh Det Switch Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Veh Det Switch Now | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Veh Det Switch Also | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Overlap Function | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

**Dimming Data**

**Default Data - No Dimming Programmed**

**Lane Defination**

| Lanes | Name | Green Inbound | Yellow Inbound | Red Inbound | Green Outbound | Yellow Outbound |
|---|---|---|---|---|---|---|

**Default Data - Lane Defination**

## Preemption Data

**General Preemption Data**

| | | |
|---|---|---|
| Flash > Preempt 1 | Preempt 2 = Preempt 3 | Preempt 4 = Preempt 5 |
| Preempt 1 > Preempt 2 | Preempt 3 = Preempt 4 | Preempt 5 = Preempt 6 |

**Preempt Timers**

| Preempt | Non-Locking | Link to Preempt | Delay | Ext end | Duration | Max Call | Lock-Out | Min Green | Min Walk | Debounce | Gate ext end | Select: Ped Clear | Select: Yel | Select: Red | Track: Grn | Track: Ped | Track: Yel | Track: Red | Dwell Green | Return: Ped Clear | Return: Yel | Return: Red |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | No | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 |
| 2 | Yes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 5 | 0 | 40 | 20 |
| 3 | No | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 |
| 4 | Yes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 40 | 20 | 0 | 0 | 0 | 20 | 10 | 8 | 40 | 20 |
| 5 | Yes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 5 | 0 | 40 | 20 |
| 6 | No | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 40 | 20 | 5 | 0 | 40 | 20 |

| Preempt 1 | | | Preempt 2 | | | Preempt 3 | | | Preempt 4 | | | Preempt 5 | | | Preempt 6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls | Phase | Exit Phase | Exit Calls |
| | | | 2 | Yes | No | | | | 2 | Yes | No | 2 | Yes | No | 2 | Yes | No |
| | | | 6 | Yes | No | | | | 6 | Yes | No | 6 | Yes | No | 6 | Yes | No |

## Priority Timers

| Priority | Non-Locking | Delay | Ext end | Free Dial | Free Split | Min Green | No Lock out | Lock out A | Lock out B | Max Green | Pre-Green | Recall | Excl-co Phase Svc. | Transit Overlap | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | Signal Type | Blankout |

## Priority Detector Channels

**Priority**

Detector

## Priority Fixed Phases

**Priority**

Legend: 0 FALSE 1 TRUE
CO-PHASE
QJ-PHASE

**Priority**

**Priority Bank :** Level

| Partial Priority | Full Priority | Recovery |
|---|---|---|
| Alt Seq | Freq. Override | Method |
| Alt Seq Enabled | Ped skip | Return |
| Min Walk | Force full Priority | PedWait |
| | Frequency | PedOverride |
| | Freq. Level | |

Codes: 0 FALSE X TRUE

| Priority : | Priority : | Priority : |
|---|---|---|
| **Priority Bank :** | **Priority Bank :** | **Priority Bank :** |
| Queu Phase Detector Time | Queu Phase Detector Time | Queu Phase Detector Time |
| **Default data** | **Default data** | **Default data** |

| Priority : | Priority : | Priority : |
|---|---|---|
| **Priority Bank :**<br>Queu Phase Detector Time<br>**Default data** | **Priority Bank :**<br>Queu Phase Detector Time<br>**Default data** | **Priority Bank :**<br>Queu Phase Detector Time<br>**Default data** |

| Priority : | Priority : |
|---|---|
| **Bank**<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>**Default Data** | **Bank**<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>**Default Data** |
| **Priority :** | **Priority :** |
| **Bank**<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>**Default Data** | **Bank**<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>**Default Data** |
| **Priority :** | **Priority :** |
| **Bank**<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>**Default Data** | **Bank**<br>Detector PE 1A 2A 3A 4A 5A 6A B<br>**Default Data** |

## Preempt 1

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph | Track | Dwell | Cycle | Ovlp | Track | Dwell | Cycle |
| **Default Data** | | | | **Default Data** | | | | **Default Data** | | | |

## Preempt 2

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph. | Track | Dwell | Cycle | Ovlp. | Track | Dwell | Cycle |
| 2 | Red | Green | No | **Default Data** | | | | 1 | Red | Flash | No |
| 5 | Red | Green | No | | | | | 3 | Red | Flash | No |

## Preempt 3

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph. | Track | Dwell | Cycle | Ovlp. | Track | Dwell | Cycle |
| **Default Data** | | | | **Default Data** | | | | **Default Data** | | | |

## Preempt 4

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph. | Track | Dwell | Cycle | Ovlp. | Track | Dwell | Cycle |
| 4 | Red | Green | No | **Default Data** | | | | **Default Data** | | | |

## Preempt 5

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph. | Track | Dwell | Cycle | Ovlp. | Track | Dwell | Cycle |
| 6 | Red | Green | No | **Default Data** | | | | **Default Data** | | | |

## Preempt 6

| Vehical Phases | | | | Pedestrian Phases | | | | Overlaps | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ph. | Track | Dwell | Cycle | Ph. | Track | Dwell | Cycle | Ovlp. | Track | Dwell | Cycle |
| 4 | Red | Green | No | | | | | | | | |

**Default Data**

**Default Data**

## System/Detectors Data

Local Critical Alarms

Revert to Backup: 15

1st Phone:

2nd Phone:

Local Free: No Cycle Failure: No Coord Failure: No Conflict Flash: No Remote Flash: No

Local Fash: No Cycle Fault: No Coord Fault: No Premption: No Voltage Monitor: No

Special Status 1: No Special Status 2: No Special Status 3: No Special Status 4: No Special Status 5: No Special Status 6: No

### Traffic Responsive

| System Detector | Detector Channel | Name | Veh/ Hr | Average Time(mins) | Occupancy Correction/10 | Min Volume % | Queue 1 Detectors | System Detectors | Weight Factor | Queue 2 Detectors | System Detectors | Weight Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Default Data**

Sample Interval:

**Default Data**

**Queue: 1** Input Selection: 0=Average

Detector Failed Level : 0

**Queue: 2** Input Selection: 0=Average

Detector Failed Level : 0

**Default Data**

**Queue:**

| Level | Enter | Leave | Dial / Split / Offset |
|---|---|---|---|
| | | | / / |

**Default Data**

**Vehical Detector**

Diagnostic Value 0

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Vehical Detector**

Diagnostic Value 1

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Special Detector**

Diagnostic Value 0

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Default Data - Diag 0 Values**

**Default Data - No Diag 1 Values**

**Default Data - No Diag 0 Valu**

**Pedestrian Detector**

Diagnostic Value 0

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Pedestrian Detector**

Diagnostic Value 1

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Special Detector**

Diagnostic Value 1

| Detector | Max Presence | No Activity | Erratic Count |
|---|---|---|---|

**Default Data - No Diag 0 Values**

**Default Data - No Diag 1 Values**

**Default Data - No Diag 1 Values**

### Speed Trap Data

Speed Trap:

Measurement:

Detector 1 Detector_2 Distance :

Dial/Split/Offset

//

**Default Data**

| Speed Trap Low Treshold | Speed Trap High Treshold |
|---|---|

**Default Data**

### Volume Detector Data

Report Interval 0

| Volume Detector Number | Controller Detector Channel |
|---|---|

**Default Data**

# Appendix D
# Capacity Analysis Worksheets for Existing Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 3 | 101 | 167 | 1 | 39 | 78 |
| Future Vol, veh/h | 3 | 101 | 167 | 1 | 39 | 78 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 0 | 7 | 4 | 0 | 13 | 8 |
| Mvmt Flow | 3 | 111 | 184 | 1 | 43 | 86 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 314 | 185 | 0 | 0 | 185 | 0 |
| Stage 1 | 185 | - | - | - | - | - |
| Stage 2 | 129 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.305 | - | - | 4.295 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3665 | - | - | 2.3235 | - |
| Pot Cap-1 Maneuver | 671 | 842 | - | - | 1318 | - |
| Stage 1 | 852 | - | - | - | - | - |
| Stage 2 | 889 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 649 | 842 | - | - | 1318 | - |
| Mov Cap-2 Maneuver | 649 | - | - | - | - | - |
| Stage 1 | 852 | - | - | - | - | - |
| Stage 2 | 860 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10 | 0 | 2.6 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 835 | 1318 | - |
| HCM Lane V/C Ratio | - | - | 0.137 | 0.033 | - |
| HCM Control Delay (s) | - | - | 10 | 7.8 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 223 | 0 | 6 | 0 | 0 | 1 | 6 | 262 | 0 | 6 | 111 | 87 |
| Future Vol, veh/h | 223 | 0 | 6 | 0 | 0 | 1 | 6 | 262 | 0 | 6 | 111 | 87 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 6 |
| Mvmt Flow | 237 | 0 | 6 | 0 | 0 | 1 | 6 | 279 | 0 | 6 | 118 | 93 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 282 | 421 | 59 | 362 | 514 | 140 | 211 | 0 | 0 | 279 | 0 | 0 |
| Stage 1 | 130 | 130 | - | 291 | 291 | - | - | - | - | - | - | - |
| Stage 2 | 152 | 291 | - | 71 | 223 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.58 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.54 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 643 | 527 | 1001 | 574 | 467 | 889 | 1372 | - | - | 1295 | - | - |
| Stage 1 | 854 | 792 | - | 698 | 675 | - | - | - | - | - | - | - |
| Stage 2 | 829 | 675 | - | 936 | 723 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 638 | 522 | 1001 | 567 | 463 | 889 | 1372 | - | - | 1295 | - | - |
| Mov Cap-2 Maneuver | 638 | 522 | - | 567 | 463 | - | - | - | - | - | - | - |
| Stage 1 | 851 | 788 | - | 695 | 672 | - | - | - | - | - | - | - |
| Stage 2 | 824 | 672 | - | 926 | 719 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14 | 9.1 | 0.2 | 0.2 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1372 | - | - | 644 | 889 | 1295 | - | - |
| HCM Lane V/C Ratio | 0.005 | - | - | 0.378 | 0.001 | 0.005 | - | - |
| HCM Control Delay (s) | 7.6 | - | - | 14 | 9.1 | 7.8 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.8 | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 219 | 2 | 21 | 0 | 1 | 4 | 9 | 448 | 1 | 25 | 45 | 184 | 164 |
| Future Vol, veh/h | 219 | 2 | 21 | 0 | 1 | 4 | 9 | 448 | 1 | 25 | 45 | 184 | 164 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 0 | 14 | 0 | 0 | 0 | 6 | 3 | 0 | 0 | 0 | 6 | 5 |
| Mvmt Flow | 221 | 2 | 21 | 0 | 1 | 4 | 9 | 453 | 1 | 25 | 45 | 186 | 166 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 571 | 798 | 93 | 705 | 963 | 227 | 352 | 0 | 0 | 453 | 454 | 0 | 0 |
| Stage 1 | 326 | 326 | - | 471 | 471 | - | - | - | - | - | - | - | - |
| Stage 2 | 245 | 472 | - | 234 | 492 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.18 | 7.5 | 6.5 | 6.9 | 4.22 | - | - | 6.4 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.44 | 3.5 | 4 | 3.3 | 2.26 | - | - | 2.5 | 2.2 | - | - |
| Pot Cap-1 Maneuver | 404 | 321 | 909 | 327 | 258 | 782 | 1175 | - | - | 750 | 1117 | - | - |
| Stage 1 | 661 | 652 | - | 548 | 563 | - | - | - | - | - | - | - | - |
| Stage 2 | 737 | 562 | - | 754 | 551 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | 375 | 295 | 909 | 298 | 237 | 782 | 1175 | - | - | 949 | 949 | - | - |
| Mov Cap-2 Maneuver | 375 | 295 | - | 298 | 237 | - | - | - | - | - | - | - | - |
| Stage 1 | 656 | 603 | - | 544 | 558 | - | - | - | - | - | - | - | - |
| Stage 2 | 726 | 558 | - | 679 | 510 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 25.8 | 11.7 | 0.2 | 1.5 |
| HCM LOS | D | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1175 | - | - | 375 | 770 | 237 | 782 | 949 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.59 | 0.03 | 0.004 | 0.005 | 0.075 | - | - |
| HCM Control Delay (s) | 8.1 | - | - | 27.5 | 9.8 | 20.3 | 9.6 | 9.1 | - | - |
| HCM Lane LOS | A | - | - | D | A | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.6 | 0.1 | 0 | 0 | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 20.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 363 | 0 | 676 | 34 | 318 | 378 | 10 |
| Future Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 363 | 0 | 676 | 34 | 318 | 378 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 33 | 1 | 20 | 19 | 1 | 403 | 0 | 751 | 38 | 353 | 420 | 11 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1502 | 1915 | 210 | 1668 | 1888 | 376 | 431 | 0 | 0 | 789 | 0 | 0 |
| Stage 1 | 1126 | 1126 | - | 751 | 751 | - | - | - | - | - | - | - |
| Stage 2 | 376 | 789 | - | 917 | 1137 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 86 | 68 | 769 | 60 | 71 | 619 | 1139 | - | - | 827 | - | - |
| Stage 1 | 222 | 282 | - | 360 | 421 | - | - | - | - | - | - | - |
| Stage 2 | 623 | 405 | - | 285 | 279 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 20 | 39 | 769 | 38 | 41 | 619 | 1139 | - | - | 827 | - | - |
| Mov Cap-2 Maneuver | ~ 20 | 39 | - | 38 | 41 | - | - | - | - | - | - | - |
| Stage 1 | 222 | 162 | - | 360 | 421 | - | - | - | - | - | - | - |
| Stage 2 | 216 | 405 | - | 158 | 160 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 481.1 | 28.4 | 0 | 5.7 |
| HCM LOS | F | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1139 | - | - | 20 | 769 | 38 | 619 | 827 | - | - |
| HCM Lane V/C Ratio | - | - | - | 1.722 | 0.026 | 0.526 | 0.652 | 0.427 | - | - |
| HCM Control Delay (s) | 0 | - | - | $ 754.8 | 9.8 | 177 | 21 | 12.6 | - | - |
| HCM Lane LOS | A | - | - | F | A | F | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.6 | 0.1 | 1.8 | 4.8 | 2.2 | - | - |

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

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 532 | 248 | 1109 | 176 | 516 |
| v/c Ratio | 1.12 | 0.41 | 0.97 | 0.38 | 0.25 |
| Control Delay | 110.5 | 5.9 | 50.9 | 19.9 | 5.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 110.5 | 5.9 | 50.9 | 19.9 | 5.5 |
| Queue Length 50th (ft) | ~351 | 0 | 310 | 40 | 57 |
| Queue Length 95th (ft) | #546 | 56 | #453 | m104 | 72 |
| Internal Link Dist (ft) | 1069 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 476 | 604 | 1139 | 461 | 2062 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.12 | 0.41 | 0.97 | 0.38 | 0.25 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 489 | 0 | 228 | 0 | 0 | 0 | 0 | 742 | 278 | 162 | 475 | 0 |
| Future Volume (veh/h) | 489 | 0 | 228 | 0 | 0 | 0 | 0 | 742 | 278 | 162 | 475 | 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 | 1885 | 1900 | 1870 | | | | 0 | 1870 | 1885 | 1885 | 1826 | 0 |
| Adj Flow Rate, veh/h | 532 | 0 | 248 | | | | 0 | 807 | 302 | 176 | 516 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 0 | 2 | | | | 0 | 2 | 1 | 1 | 5 | 0 |
| Cap, veh/h | 483 | 0 | 423 | | | | 0 | 816 | 305 | 461 | 2082 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.32 | 0.32 | 0.42 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1585 | | | | 0 | 2624 | 946 | 1795 | 3561 | 0 |
| Grp Volume(v), veh/h | 532 | 0 | 248 | | | | 0 | 566 | 543 | 176 | 516 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1585 | | | | 0 | 1777 | 1700 | 1795 | 1735 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 12.2 | | | | 0.0 | 28.5 | 28.6 | 1.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 12.2 | | | | 0.0 | 28.5 | 28.6 | 1.2 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.56 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 548 | 461 | 2082 | 0 |
| V/C Ratio(X) | 1.10 | 0.00 | 0.59 | | | | 0.00 | 0.99 | 0.99 | 0.38 | 0.25 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 548 | 461 | 2082 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.66 | 0.66 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 28.7 | | | | 0.0 | 30.3 | 30.4 | 20.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 71.9 | 0.0 | 2.1 | | | | 0.0 | 35.0 | 36.3 | 0.3 | 0.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 19.6 | 0.0 | 4.7 | | | | 0.0 | 16.7 | 16.2 | 2.1 | 0.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 104.9 | 0.0 | 30.8 | | | | 0.0 | 65.4 | 66.6 | 20.9 | 0.2 | 0.0 |
| LnGrp LOS | F | A | C | | | | A | E | E | C | A | A |
| Approach Vol, veh/h | | 780 | | | | | | 1109 | | | 692 | |
| Approach Delay, s/veh | | 81.3 | | | | | | 66.0 | | | 5.5 | |
| Approach LOS | | F | | | | | | E | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.0 | 35.0 | | 30.0 | | 60.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 19.0 | 29.0 | | 24.0 | | 54.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 30.6 | | 26.0 | | 2.0 |
| Green Ext Time (p_c), s | 0.4 | 0.0 | | 0.0 | | 4.3 |

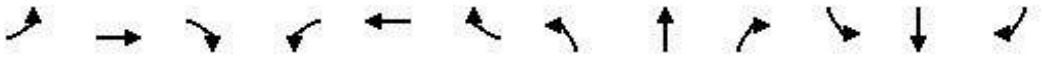
| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 54.4 |
| HCM 6th LOS | | D |



| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 172 | 325 | 375 | 975 | 929 |
| v/c Ratio | 0.59 | 0.83 | 0.65 | 0.40 | 0.69 |
| Control Delay | 42.0 | 36.7 | 24.3 | 4.7 | 20.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 42.0 | 36.7 | 24.3 | 4.7 | 20.6 |
| Queue Length 50th (ft) | 89 | 93 | 168 | 112 | 167 |
| Queue Length 95th (ft) | 149 | #210 | m167 | m128 | 251 |
| Internal Link Dist (ft) | 742 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 359 | 446 | 580 | 2456 | 1344 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.73 | 0.65 | 0.40 | 0.69 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 165 | 0 | 312 | 360 | 936 | 0 | 0 | 461 | 431 |
| Future Volume (veh/h) | 0 | 0 | 0 | 165 | 0 | 312 | 360 | 936 | 0 | 0 | 461 | 431 |
| 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 | | | | 1811 | 1900 | 1826 | 1870 | 1870 | 0 | 0 | 1841 | 1856 |
| Adj Flow Rate, veh/h | | | | 172 | 0 | 325 | 375 | 975 | 0 | 0 | 480 | 449 |
| Peak Hour Factor | | | | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | | | | 6 | 0 | 5 | 2 | 2 | 0 | 0 | 4 | 3 |
| Cap, veh/h | | | | 382 | 0 | 327 | 584 | 2330 | 0 | 0 | 563 | 503 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.53 | 1.00 | 0.00 | 0.00 | 0.32 | 0.32 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1547 | 1781 | 3647 | 0 | 0 | 1841 | 1560 |
| Grp Volume(v), veh/h | | | | 172 | 0 | 325 | 375 | 975 | 0 | 0 | 480 | 449 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1547 | 1781 | 1777 | 0 | 0 | 1749 | 1560 |
| Q Serve(g_s), s | | | | 7.5 | 0.0 | 18.9 | 5.8 | 0.0 | 0.0 | 0.0 | 23.1 | 24.7 |
| Cycle Q Clear(g_c), s | | | | 7.5 | 0.0 | 18.9 | 5.8 | 0.0 | 0.0 | 0.0 | 23.1 | 24.7 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 327 | 584 | 2330 | 0 | 0 | 563 | 503 |
| V/C Ratio(X) | | | | 0.45 | 0.00 | 0.99 | 0.64 | 0.42 | 0.00 | 0.00 | 0.85 | 0.89 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 327 | 584 | 2330 | 0 | 0 | 563 | 503 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.15 | 0.15 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 30.9 | 0.0 | 35.5 | 15.7 | 0.0 | 0.0 | 0.0 | 28.5 | 29.0 |
| Incr Delay (d2), s/veh | | | | 0.8 | 0.0 | 48.3 | 0.4 | 0.1 | 0.0 | 0.0 | 15.0 | 20.9 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 3.2 | 0.0 | 18.9 | 3.6 | 0.0 | 0.0 | 0.0 | 11.2 | 11.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 31.8 | 0.0 | 83.8 | 16.1 | 0.1 | 0.0 | 0.0 | 43.5 | 49.9 |
| LnGrp LOS | | | | C | A | F | B | A | A | A | D | D |
| Approach Vol, veh/h | | | | | 497 | | | 1350 | | | 929 | |
| Approach Delay, s/veh | | | | | 65.8 | | | 4.5 | | | 46.6 | |
| Approach LOS | | | | | E | | | A | | | D | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 30.0 | 35.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 24.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 20.9 | 7.8 | 26.7 |
| Green Ext Time (p_c), s | 9.8 | 0.0 | 1.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 29.6 |
| HCM 6th LOS | C |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | L |
| Maximum Queue (ft) | 70 | 48 |
| Average Queue (ft) | 35 | 6 |
| 95th Queue (ft) | 59 | 28 |
| Link Distance (ft) | 461 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 295 |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | L | R |
| Maximum Queue (ft) | 127 | 16 | 4 | 2 | 4 | 21 | 2 |
| Average Queue (ft) | 56 | 1 | 0 | 0 | 0 | 2 | 0 |
| 95th Queue (ft) | 96 | 8 | 3 | 2 | 4 | 11 | 2 |
| Link Distance (ft) | 619 | 314 | | 733 | 733 | | |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | | 250 | | | 290 | 330 |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | UL | R |
| Maximum Queue (ft) | 172 | 48 | 17 | 20 | 28 | 7 | 58 | 6 |
| Average Queue (ft) | 72 | 14 | 1 | 2 | 2 | 0 | 22 | 0 |
| 95th Queue (ft) | 137 | 37 | 7 | 13 | 15 | 4 | 51 | 5 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | 290 | 400 |
| Storage Blk Time (%) | 0 | | | | | | | |
| Queuing Penalty (veh) | 0 | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | T | T | R | L | T | T |
| Maximum Queue (ft) | 162 | 87 | 585 | 100 | 13 | 33 | 31 | 262 | 79 | 2 |
| Average Queue (ft) | 56 | 17 | 221 | 84 | 1 | 2 | 2 | 117 | 4 | 0 |
| 95th Queue (ft) | 142 | 62 | 632 | 128 | 8 | 15 | 13 | 219 | 73 | 2 |
| Link Distance (ft) | 265 | | 750 | | 1591 | 1591 | | | 1427 | 1427 |
| Upstream Blk Time (%) | 0 | | 10 | | | | | | | |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | | |
| Storage Bay Dist (ft) | | 115 | | 100 | | | 300 | 300 | | |
| Storage Blk Time (%) | 9 | 0 | 29 | 31 | | | | 1 | 0 | |
| Queuing Penalty (veh) | 2 | 0 | 107 | 6 | | | | 1 | 1 | |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 672 | 357 | 347 | 355 | 164 | 62 | 56 |
| Average Queue (ft) | 378 | 135 | 185 | 204 | 81 | 24 | 11 |
| 95th Queue (ft) | 756 | 422 | 298 | 323 | 141 | 54 | 36 |
| Link Distance (ft) | 1075 | | 1427 | 1427 | | 607 | 607 |
| Upstream Blk Time (%) | 3 | | | | | | |
| Queuing Penalty (veh) | 0 | | | | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 8 | 0 | | | | | |
| Queuing Penalty (veh) | 18 | 2 | | | | | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 180 | 247 | 140 | 311 | 252 | 243 | 291 |
| Average Queue (ft) | 91 | 119 | 117 | 111 | 42 | 128 | 146 |
| 95th Queue (ft) | 155 | 204 | 164 | 276 | 147 | 211 | 260 |
| Link Distance (ft) | 754 | | | 607 | 607 | 1340 | 1340 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | | | 6 | 1 | | | |
| Queuing Penalty (veh) | | | 26 | 5 | | | |

## Network Summary

Network wide Queuing Penalty: 169

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1 | 68 | 81 | 3 | 96 | 195 |
| Future Vol, veh/h | 1 | 68 | 81 | 3 | 96 | 195 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 0 | 3 | 2 | 0 | 1 | 1 |
| Mvmt Flow | 1 | 80 | 95 | 4 | 113 | 229 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 438 | 97 | 0 | 0 | 99 | 0 |
| Stage 1 | 97 | - | - | - | - | - |
| Stage 2 | 341 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.245 | - | - | 4.115 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3285 | - | - | 2.2095 | - |
| Pot Cap-1 Maneuver | 566 | 956 | - | - | 1500 | - |
| Stage 1 | 932 | - | - | - | - | - |
| Stage 2 | 698 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 524 | 956 | - | - | 1500 | - |
| Mov Cap-2 Maneuver | 524 | - | - | - | - | - |
| Stage 1 | 932 | - | - | - | - | - |
| Stage 2 | 646 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.2 | 0 | 2.5 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 945 | 1500 | - |
| HCM Lane V/C Ratio | - | - | 0.086 | 0.075 | - |
| HCM Control Delay (s) | - | - | 9.2 | 7.6 | - |
| HCM Lane LOS | - | - | A | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 197 | 0 | 18 | 0 | 0 | 1 | 4 | 145 | 0 | 3 | 273 | 170 |
| Future Vol, veh/h | 197 | 0 | 18 | 0 | 0 | 1 | 4 | 145 | 0 | 3 | 273 | 170 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Mvmt Flow | 210 | 0 | 19 | 0 | 0 | 1 | 4 | 154 | 0 | 3 | 290 | 181 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 381 | 458 | 145 | 313 | 639 | 77 | 471 | 0 | 0 | 154 | 0 | 0 |
| Stage 1 | 296 | 296 | - | 162 | 162 | - | - | - | - | - | - | - |
| Stage 2 | 85 | 162 | - | 151 | 477 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.02 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.36 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 552 | 502 | 863 | 622 | 397 | 975 | 1101 | - | - | 1439 | - | - |
| Stage 1 | 688 | 672 | - | 830 | 768 | - | - | - | - | - | - | - |
| Stage 2 | 913 | 768 | - | 842 | 559 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 549 | 499 | 863 | 606 | 395 | 975 | 1101 | - | - | 1439 | - | - |
| Mov Cap-2 Maneuver | 549 | 499 | - | 606 | 395 | - | - | - | - | - | - | - |
| Stage 1 | 685 | 671 | - | 827 | 765 | - | - | - | - | - | - | - |
| Stage 2 | 909 | 765 | - | 822 | 558 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 15.6 | 8.7 | 0.2 | 0.1 |
| HCM LOS | C | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1101 | - | - | 566 | 975 | 1439 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.404 | 0.001 | 0.002 | - | - |
| HCM Control Delay (s) | 8.3 | - | - | 15.6 | 8.7 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.9 | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 221 | 1 | 34 | 2 | 0 | 28 | 19 | 341 | 2 | 20 | 5 | 412 | 257 |
| Future Vol, veh/h | 221 | 1 | 34 | 2 | 0 | 28 | 19 | 341 | 2 | 20 | 5 | 412 | 257 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 |
| Mvmt Flow | 230 | 1 | 35 | 2 | 0 | 29 | 20 | 355 | 2 | 21 | 5 | 429 | 268 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 699 | 878 | 215 | 662 | 1144 | 178 | 697 | 0 | 0 | 355 | 357 | 0 | 0 |
| Stage 1 | 481 | 481 | - | 395 | 395 | - | - | - | - | - | - | - | - |
| Stage 2 | 218 | 397 | - | 267 | 749 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.52 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 6.5 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.55 | 2.2 | - | - |
| Pot Cap-1 Maneuver | 328 | 289 | 796 | 351 | 202 | 841 | 909 | - | - | 841 | 1213 | - | - |
| Stage 1 | 538 | 557 | - | 607 | 608 | - | - | - | - | - | - | - | - |
| Stage 2 | 767 | 607 | - | 721 | 422 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | 304 | 274 | 796 | 321 | 192 | 841 | 909 | - | - | 870 | 870 | - | - |
| Mov Cap-2 Maneuver | 304 | 274 | - | 321 | 192 | - | - | - | - | - | - | - | - |
| Stage 1 | 526 | 540 | - | 594 | 595 | - | - | - | - | - | - | - | - |
| Stage 2 | 724 | 594 | - | 667 | 409 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 41.1 | 9.9 | 0.5 | 0.3 |
| HCM LOS | E | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 909 | - | - | 304 | 755 | 321 | 841 | 870 | - | - |
| HCM Lane V/C Ratio | 0.022 | - | - | 0.757 | 0.048 | 0.006 | 0.035 | 0.03 | - | - |
| HCM Control Delay (s) | 9 | - | - | 46 | 10 | 16.3 | 9.4 | 9.3 | - | - |
| HCM Lane LOS | A | - | - | E | B | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 5.8 | 0.2 | 0 | 0.1 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 150 | 8 | 570 | 30 | 177 | 692 | 29 |
| Future Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 150 | 8 | 570 | 30 | 177 | 692 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 90 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 4 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 7 | 1 | 1 | 0 |
| Mvmt Flow | 26 | 1 | 4 | 15 | 1 | 155 | 8 | 588 | 31 | 182 | 713 | 30 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1388 | 1712 | 357 | 1325 | 1711 | 294 | 743 | 0 | 0 | 619 | 0 | 0 |
| Stage 1 | 1077 | 1077 | - | 604 | 604 | - | - | - | - | - | - | - |
| Stage 2 | 311 | 635 | - | 721 | 1107 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.58 | 6.5 | 6.9 | 7.5 | 6.5 | 6.96 | 4.1 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.54 | 4 | 3.3 | 3.5 | 4 | 3.33 | 2.2 | - | - | 2.21 | - | - |
| Pot Cap-1 Maneuver | 100 | 91 | 645 | 116 | 92 | 699 | 873 | - | - | 964 | - | - |
| Stage 1 | 230 | 298 | - | 457 | 491 | - | - | - | - | - | - | - |
| Stage 2 | 669 | 476 | - | 389 | 288 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 65 | 73 | 645 | 97 | 74 | 699 | 873 | - | - | 964 | - | - |
| Mov Cap-2 Maneuver | 65 | 73 | - | 97 | 74 | - | - | - | - | - | - | - |
| Stage 1 | 228 | 242 | - | 453 | 487 | - | - | - | - | - | - | - |
| Stage 2 | 515 | 472 | - | 312 | 234 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 83.7 | 15.4 | 0.1 | 1.9 |
| HCM LOS | F | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 873 | - | - | 65 | 645 | 95 | 699 | 964 | - | - |
| HCM Lane V/C Ratio | 0.009 | - | - | 0.414 | 0.006 | 0.174 | 0.221 | 0.189 | - | - |
| HCM Control Delay (s) | 9.2 | - | - | 94.9 | 10.6 | 50.7 | 11.6 | 9.6 | - | - |
| HCM Lane LOS | A | - | - | F | B | F | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.6 | 0 | 0.6 | 0.8 | 0.7 | - | - |

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 473 | 260 | 776 | 325 | 697 |
| v/c Ratio | 1.00 | 0.43 | 0.82 | 0.59 | 0.32 |
| Control Delay | 77.0 | 7.2 | 38.5 | 26.5 | 6.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 77.0 | 7.2 | 38.5 | 26.5 | 6.7 |
| Queue Length 50th (ft) | ~270 | 8 | 207 | 147 | 62 |
| Queue Length 95th (ft) | #470 | 66 | #286 | m176 | m64 |
| Internal Link Dist (ft) | 1200 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 472 | 606 | 942 | 549 | 2166 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.00 | 0.43 | 0.82 | 0.59 | 0.32 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 459 | 0 | 252 | 0 | 0 | 0 | 0 | 579 | 174 | 315 | 676 | 0 |
| Future Volume (veh/h) | 459 | 0 | 252 | 0 | 0 | 0 | 0 | 579 | 174 | 315 | 676 | 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 | 1900 | 1900 | | | | 0 | 1870 | 1870 | 1856 | 1900 | 0 |
| Adj Flow Rate, veh/h | 473 | 0 | 260 | | | | 0 | 597 | 179 | 325 | 697 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 0 | 0 | | | | 0 | 2 | 2 | 3 | 0 | 0 |
| Cap, veh/h | 483 | 0 | 429 | | | | 0 | 719 | 215 | 591 | 2166 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.27 | 0.27 | 0.53 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1610 | | | | 0 | 2789 | 807 | 1767 | 3705 | 0 |
| Grp Volume(v), veh/h | 473 | 0 | 260 | | | | 0 | 393 | 383 | 325 | 697 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1610 | | | | 0 | 1777 | 1725 | 1767 | 1805 | 0 |
| Q Serve(g_s), s | 23.4 | 0.0 | 12.7 | | | | 0.0 | 18.7 | 18.8 | 2.6 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 23.4 | 0.0 | 12.7 | | | | 0.0 | 18.7 | 18.8 | 2.6 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.47 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 460 | 591 | 2166 | 0 |
| V/C Ratio(X) | 0.98 | 0.00 | 0.61 | | | | 0.00 | 0.83 | 0.83 | 0.55 | 0.32 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 460 | 591 | 2166 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.25 | 0.25 | 0.00 |
| Uniform Delay (d), s/veh | 32.8 | 0.0 | 28.9 | | | | 0.0 | 31.1 | 31.1 | 15.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 35.7 | 0.0 | 2.4 | | | | 0.0 | 15.4 | 16.0 | 0.3 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 14.5 | 0.0 | 5.0 | | | | 0.0 | 9.5 | 9.3 | 3.1 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 68.5 | 0.0 | 31.3 | | | | 0.0 | 46.5 | 47.1 | 15.5 | 0.1 | 0.0 |
| LnGrp LOS | E | A | C | | | | A | D | D | B | A | A |
| Approach Vol, veh/h | | 733 | | | | | | 776 | | | 1022 | |
| Approach Delay, s/veh | | 55.3 | | | | | | 46.8 | | | 5.0 | |
| Approach LOS | | E | | | | | | D | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 30.0 | 30.0 | | 30.0 | | 60.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 24.0 | 24.0 | | 24.0 | | 54.0 |
| Max Q Clear Time (g_c+I1), s | 4.6 | 20.8 | | 25.4 | | 2.0 |
| Green Ext Time (p_c), s | 0.9 | 1.4 | | 0.0 | | 4.9 |

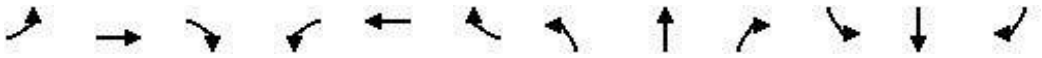
| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 32.4 |
| HCM 6th LOS | C |



| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 212 | 315 | 256 | 827 | 1420 |
| v/c Ratio | 0.68 | 0.70 | 0.56 | 0.34 | 0.93 |
| Control Delay | 45.9 | 20.7 | 21.2 | 1.5 | 34.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 45.9 | 20.7 | 21.2 | 1.5 | 34.5 |
| Queue Length 50th (ft) | 112 | 53 | 108 | 18 | 352 |
| Queue Length 95th (ft) | 181 | 139 | m132 | m45 | #539 |
| Internal Link Dist (ft) | 819 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 377 | 502 | 456 | 2452 | 1525 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.56 | 0.63 | 0.56 | 0.34 | 0.93 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 206 | 0 | 306 | 248 | 802 | 0 | 0 | 806 | 571 |
| Future Volume (veh/h) | 0 | 0 | 0 | 206 | 0 | 306 | 248 | 802 | 0 | 0 | 806 | 571 |
| 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 | | | | 1885 | 1900 | 1885 | 1870 | 1870 | 0 | 0 | 1885 | 1885 |
| Adj Flow Rate, veh/h | | | | 212 | 0 | 315 | 256 | 827 | 0 | 0 | 831 | 589 |
| Peak Hour Factor | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | | | | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 1 |
| Cap, veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 765 | 529 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.42 | 1.00 | 0.00 | 0.00 | 0.38 | 0.38 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1598 | 1781 | 3647 | 0 | 0 | 2119 | 1399 |
| Grp Volume(v), veh/h | | | | 212 | 0 | 315 | 256 | 827 | 0 | 0 | 733 | 687 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1598 | 1781 | 1777 | 0 | 0 | 1791 | 1633 |
| Q Serve(g_s), s | | | | 9.4 | 0.0 | 17.4 | 4.8 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Cycle Q Clear(g_c), s | | | | 9.4 | 0.0 | 17.4 | 4.8 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.86 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 617 |
| V/C Ratio(X) | | | | 0.55 | 0.00 | 0.93 | 0.56 | 0.35 | 0.00 | 0.00 | 1.08 | 1.11 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 617 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.46 | 0.46 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 31.7 | 0.0 | 34.9 | 21.1 | 0.0 | 0.0 | 0.0 | 28.0 | 28.0 |
| Incr Delay (d2), s/veh | | | | 1.8 | 0.0 | 32.4 | 0.7 | 0.2 | 0.0 | 0.0 | 59.1 | 71.8 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 4.2 | 0.0 | 17.1 | 3.1 | 0.1 | 0.0 | 0.0 | 24.2 | 24.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 33.5 | 0.0 | 67.3 | 21.9 | 0.2 | 0.0 | 0.0 | 87.1 | 99.8 |
| LnGrp LOS | | | | C | A | E | C | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 527 | | | 1083 | | | 1420 | |
| Approach Delay, s/veh | | | | | 53.7 | | | 5.3 | | | 93.2 | |
| Approach LOS | | | | | D | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 25.0 | 40.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 19.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 19.4 | 6.8 | 36.0 |
| Green Ext Time (p_c), s | 7.8 | 0.0 | 0.6 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 54.9 |
| HCM 6th LOS | D |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | L |
| Maximum Queue (ft) | 55 | 42 |
| Average Queue (ft) | 28 | 7 |
| 95th Queue (ft) | 48 | 29 |
| Link Distance (ft) | 461 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 295 |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | L | T |
| Maximum Queue (ft) | 130 | 6 | 13 | 1 | 4 | 2 |
| Average Queue (ft) | 55 | 0 | 1 | 0 | 0 | 0 |
| 95th Queue (ft) | 98 | 3 | 6 | 1 | 3 | 2 |
| Link Distance (ft) | 619 | 314 | | 733 | | 1952 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | | 250 | | 290 | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | UL | T | R |
| Maximum Queue (ft) | 191 | 89 | 15 | 29 | 36 | 2 | 38 | 2 | 18 |
| Average Queue (ft) | 78 | 16 | 1 | 12 | 8 | 0 | 8 | 0 | 1 |
| 95th Queue (ft) | 156 | 68 | 8 | 29 | 28 | 2 | 29 | 2 | 8 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | | 1592 | |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | 290 | | 400 |
| Storage Blk Time (%) | 0 | 0 | | | | | | | |
| Queuing Penalty (veh) | 0 | 0 | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | L | T | T | R | L |
| Maximum Queue (ft) | 72 | 28 | 67 | 87 | 33 | 2 | 4 | 25 | 125 |
| Average Queue (ft) | 23 | 5 | 14 | 34 | 3 | 0 | 0 | 2 | 49 |
| 95th Queue (ft) | 57 | 22 | 44 | 69 | 20 | 2 | 3 | 14 | 92 |
| Link Distance (ft) | 265 | | 685 | | | 1592 | 1592 | | |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | | 115 | | 100 | 265 | | | 300 | 300 |
| Storage Blk Time (%) | 0 | | 0 | 0 | | | | | |
| Queuing Penalty (veh) | 0 | | 0 | 0 | | | | | |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 504 | 315 | 245 | 257 | 228 | 120 | 79 |
| Average Queue (ft) | 258 | 83 | 135 | 146 | 135 | 38 | 38 |
| 95th Queue (ft) | 430 | 211 | 221 | 236 | 217 | 85 | 74 |
| Link Distance (ft) | 1206 | | 1427 | 1427 | | 603 | 603 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 1 | 0 | | | 0 | 0 | |
| Queuing Penalty (veh) | 2 | 0 | | | 1 | 0 | |

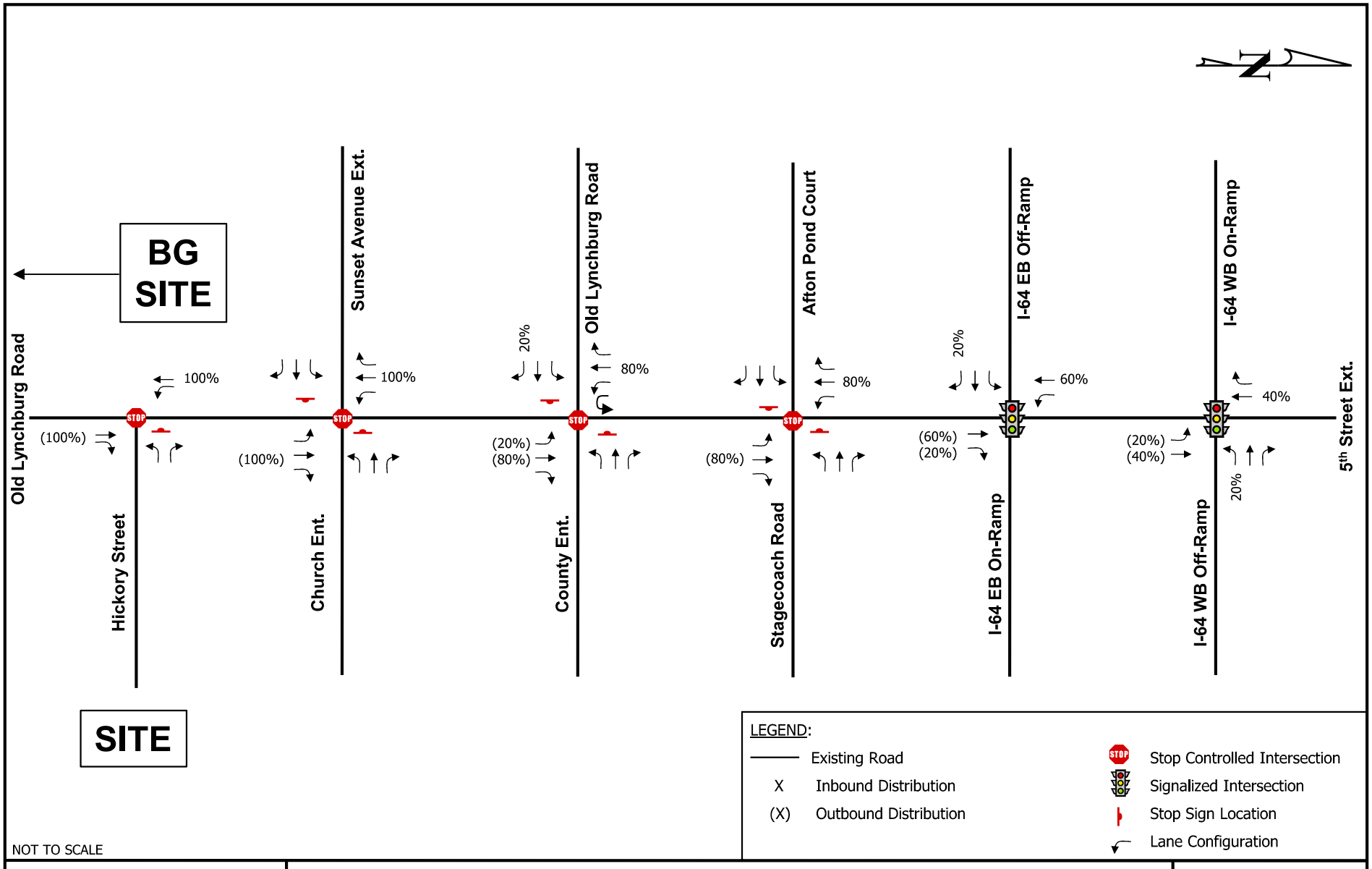
## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 194 | 203 | 139 | 260 | 133 | 564 | 639 |
| Average Queue (ft) | 105 | 99 | 106 | 39 | 8 | 298 | 354 |
| 95th Queue (ft) | 176 | 171 | 156 | 172 | 79 | 527 | 605 |
| Link Distance (ft) | 832 | | | 603 | 603 | 1342 | 1342 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | | | 2 | 1 | | | |
| Queuing Penalty (veh) | | | 8 | 1 | | | |

## Network Summary

Network wide Queuing Penalty: 12

# Appendix E
# Background Development Trips




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
# Site Trip Distributions – Whittington

Figure
E-1

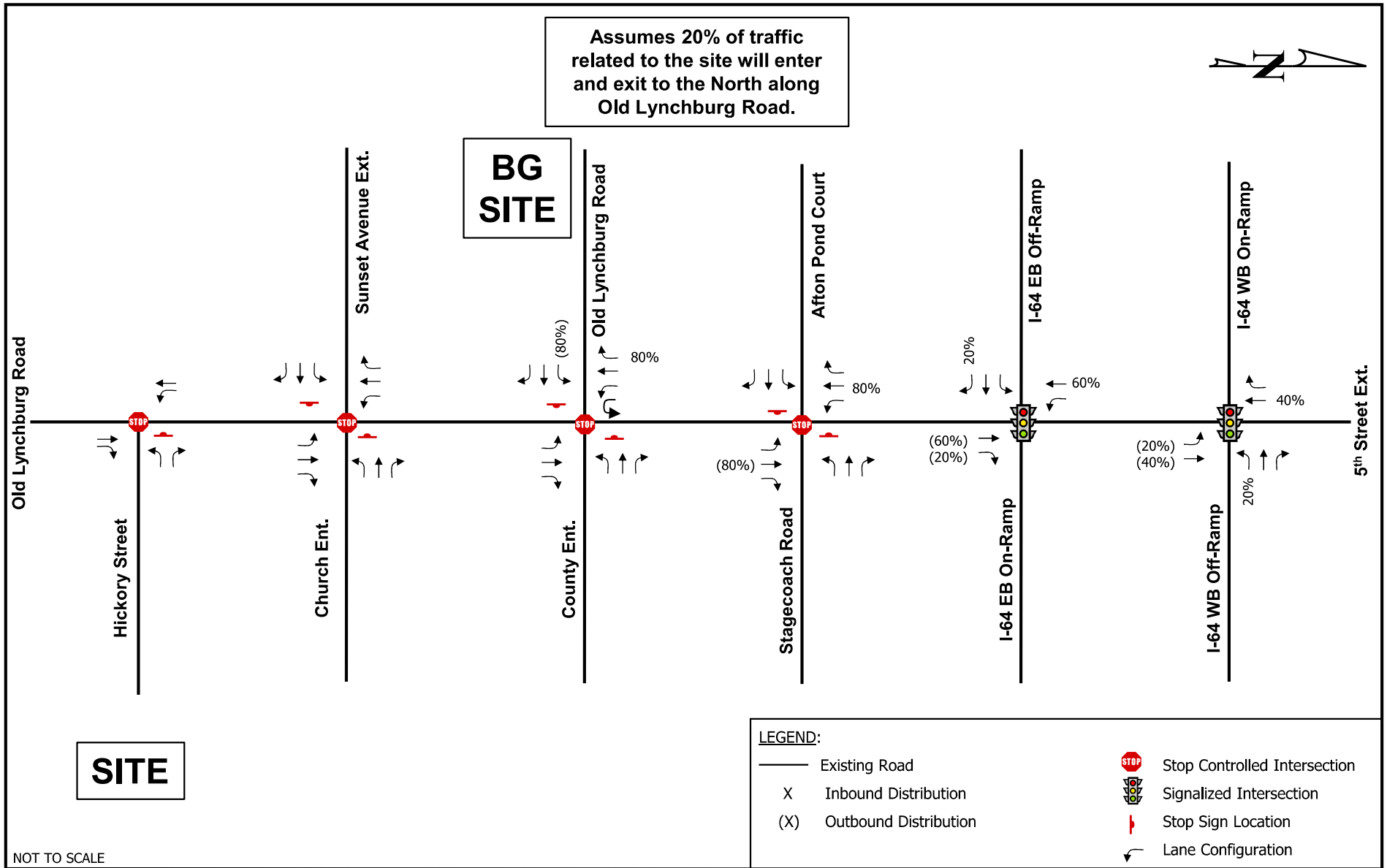



NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
# Site Trips – Whittington

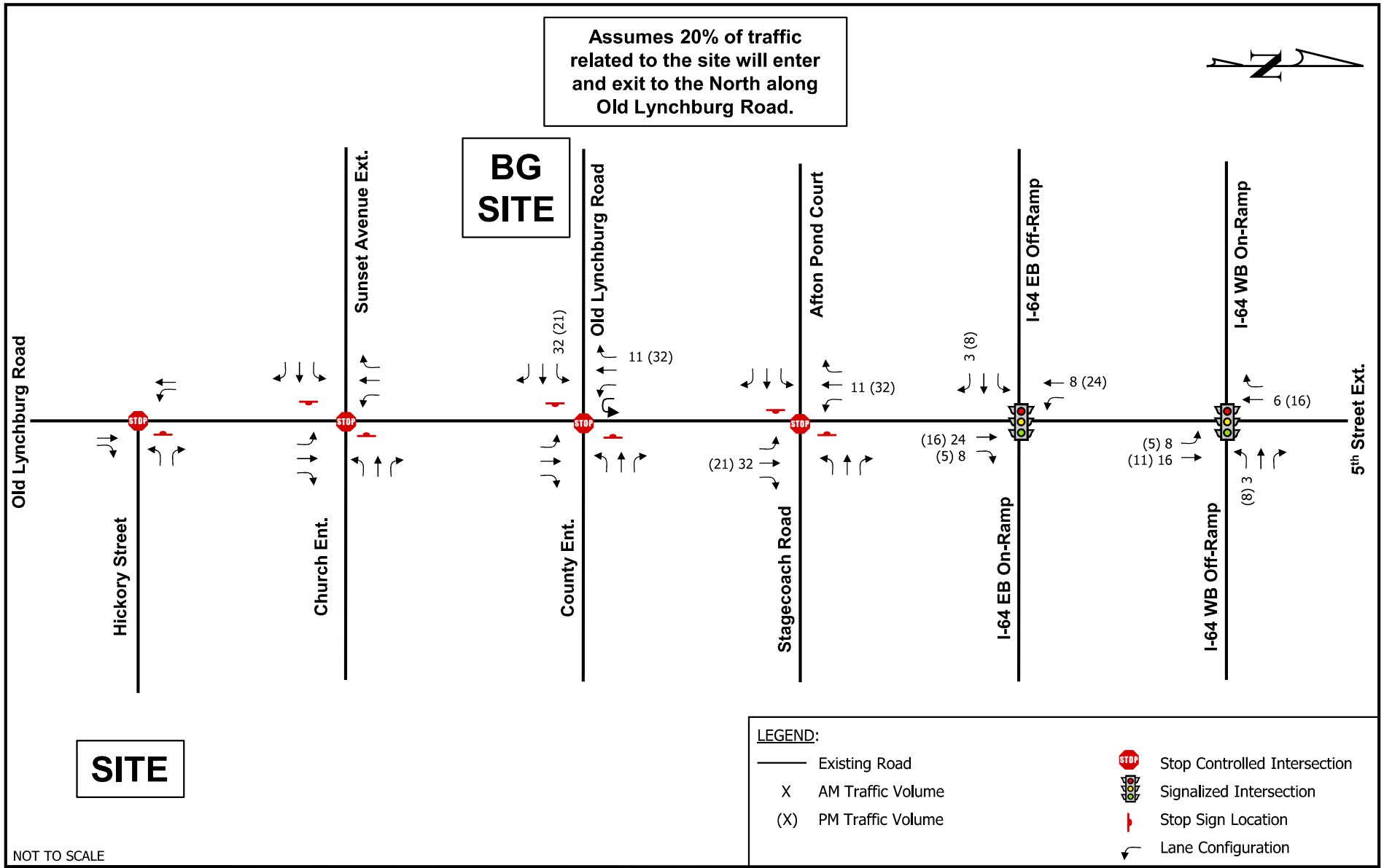
Figure
E-2




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
# Residential Site Trip Distributions – Albemarle Business Park

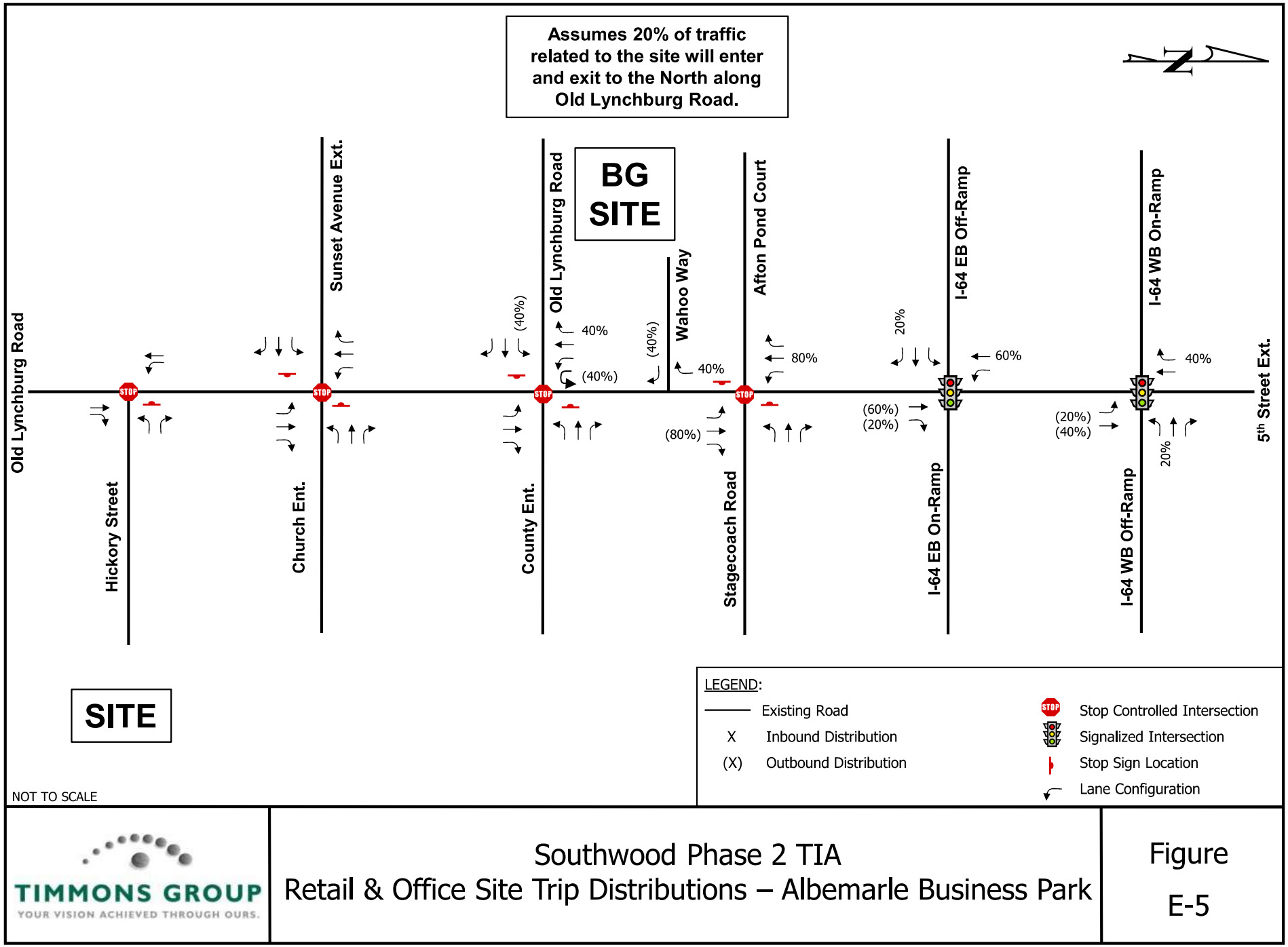
Figure
E-3




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
# Residential Site Trips – Albemarle Business Park

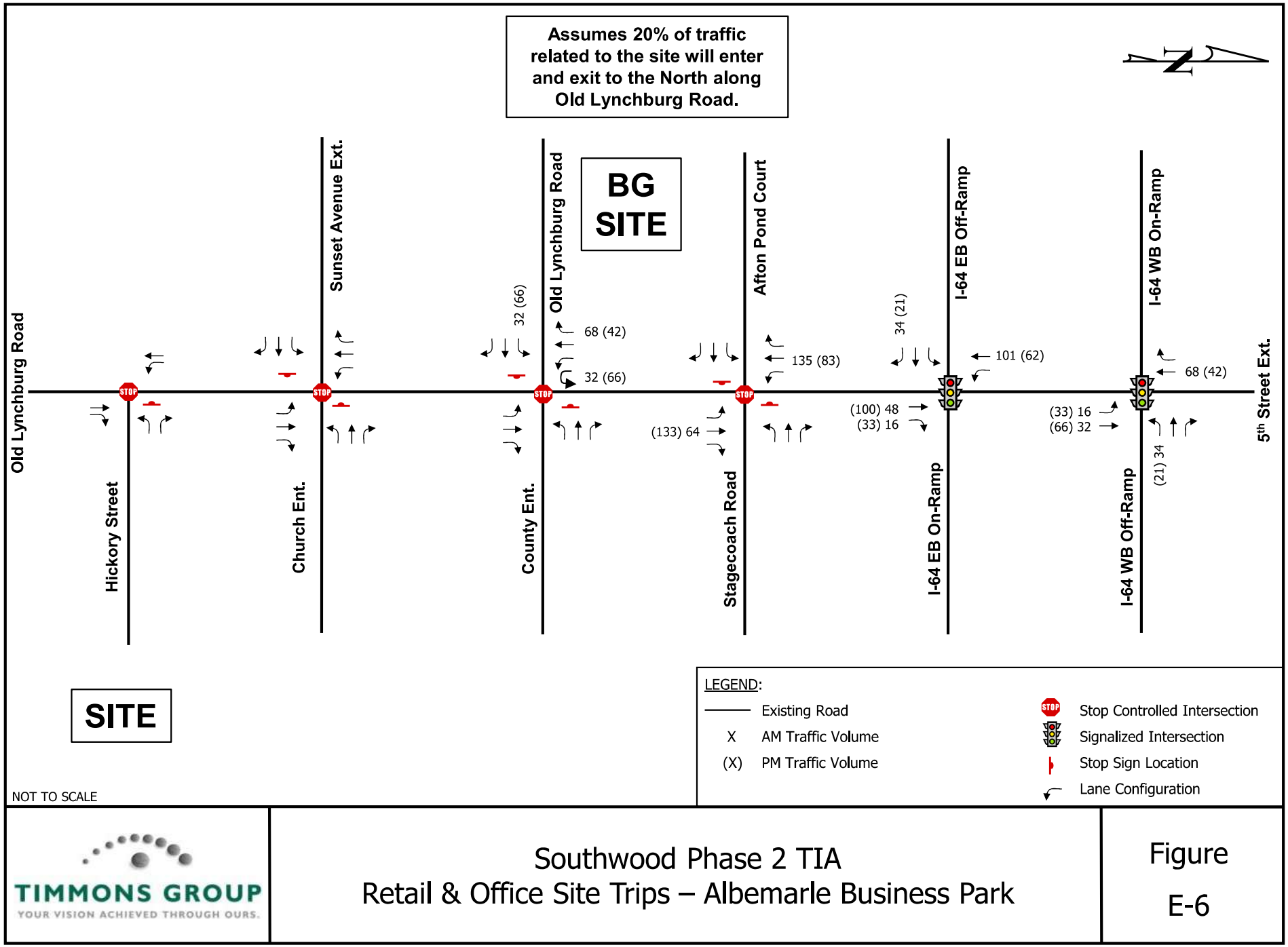
Figure
E-4




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
## Retail & Office Site Trip Distributions – Albemarle Business Park

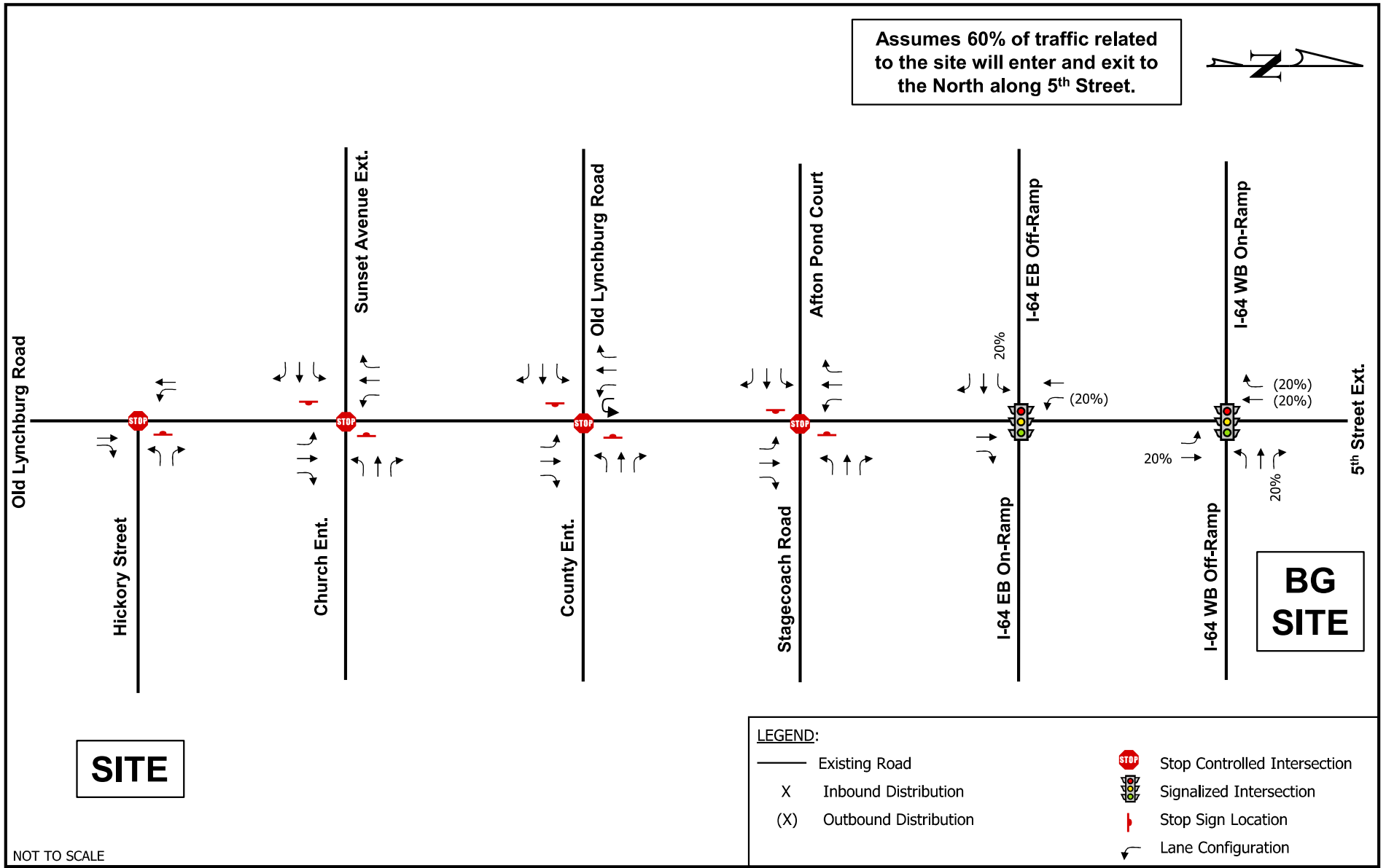
Figure
E-5




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
## Retail & Office Site Trips – Albemarle Business Park

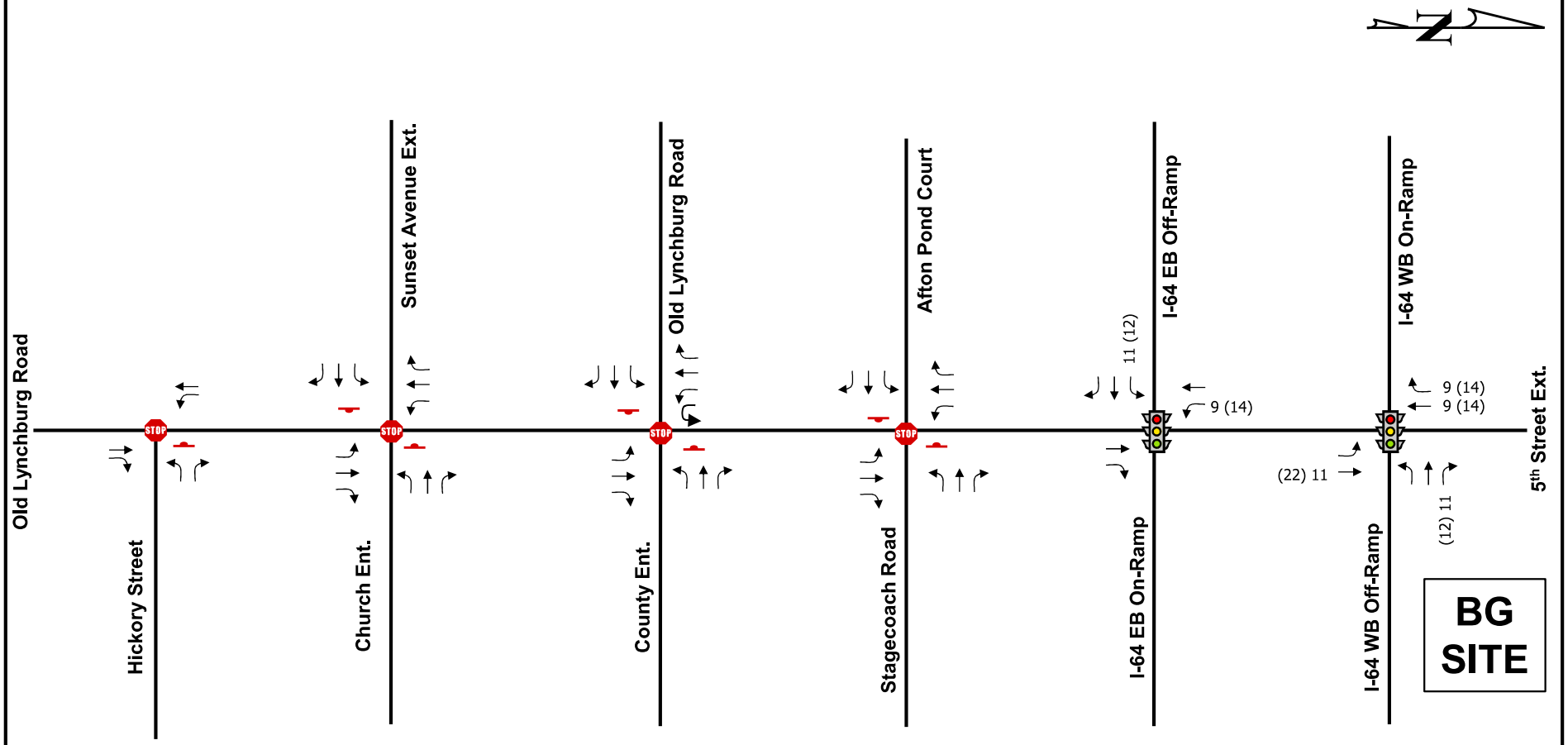
Figure
E-6




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
# Site Trip Distributions – 5th Street Landing

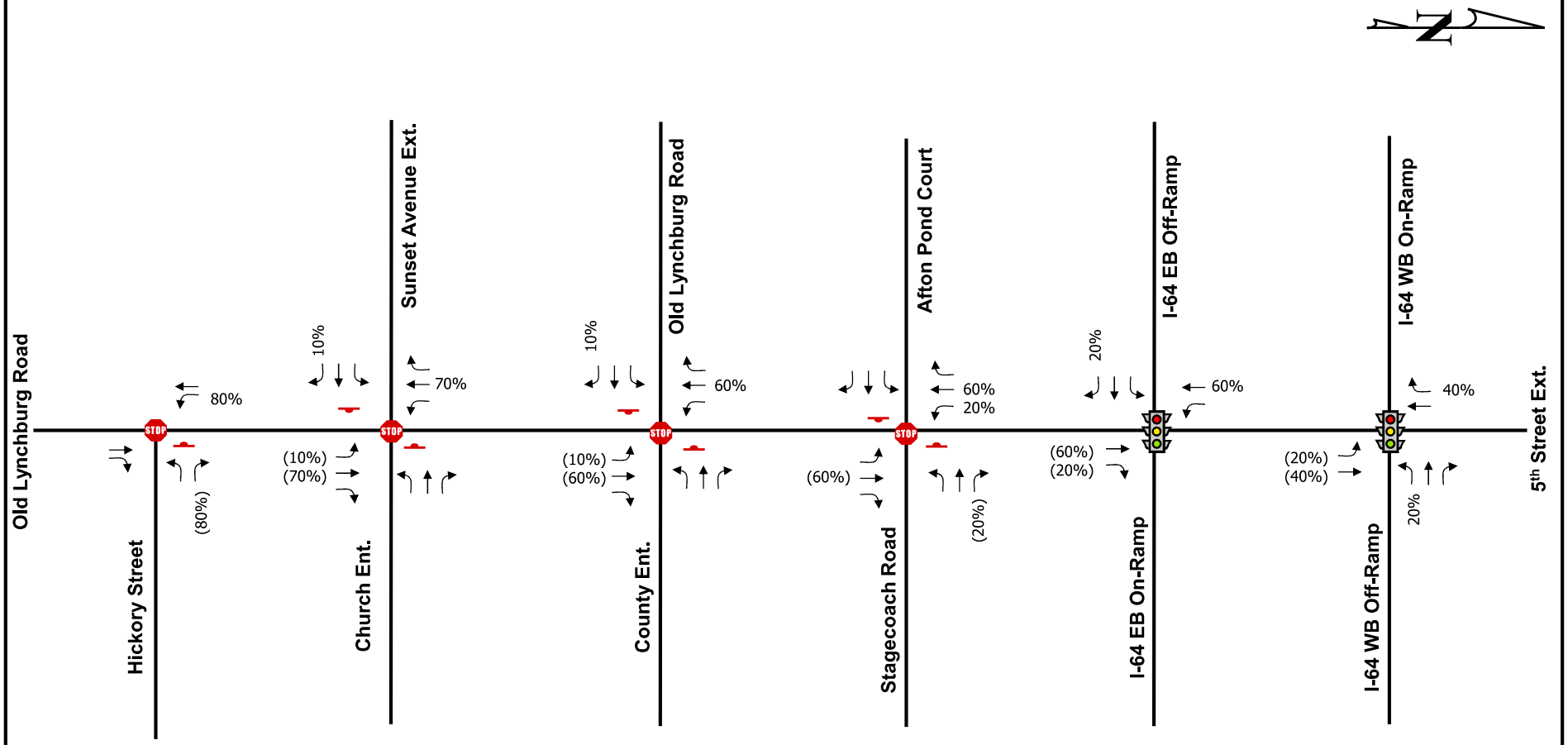
Figure
E-7




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
# Site Trips – 5th Street Landing

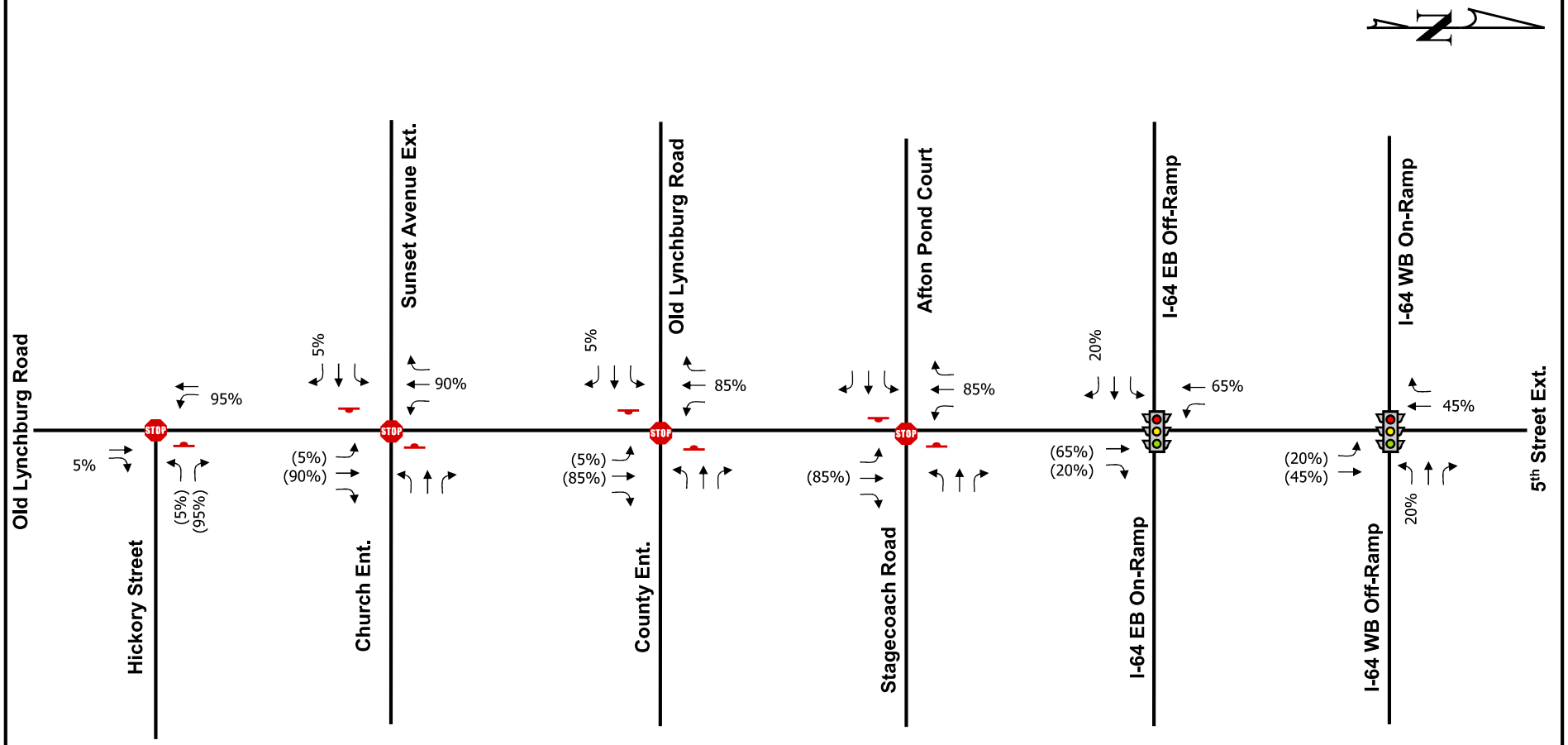
Figure
E-8




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
## Southwood Phase 1 Trip Distributions - Residential

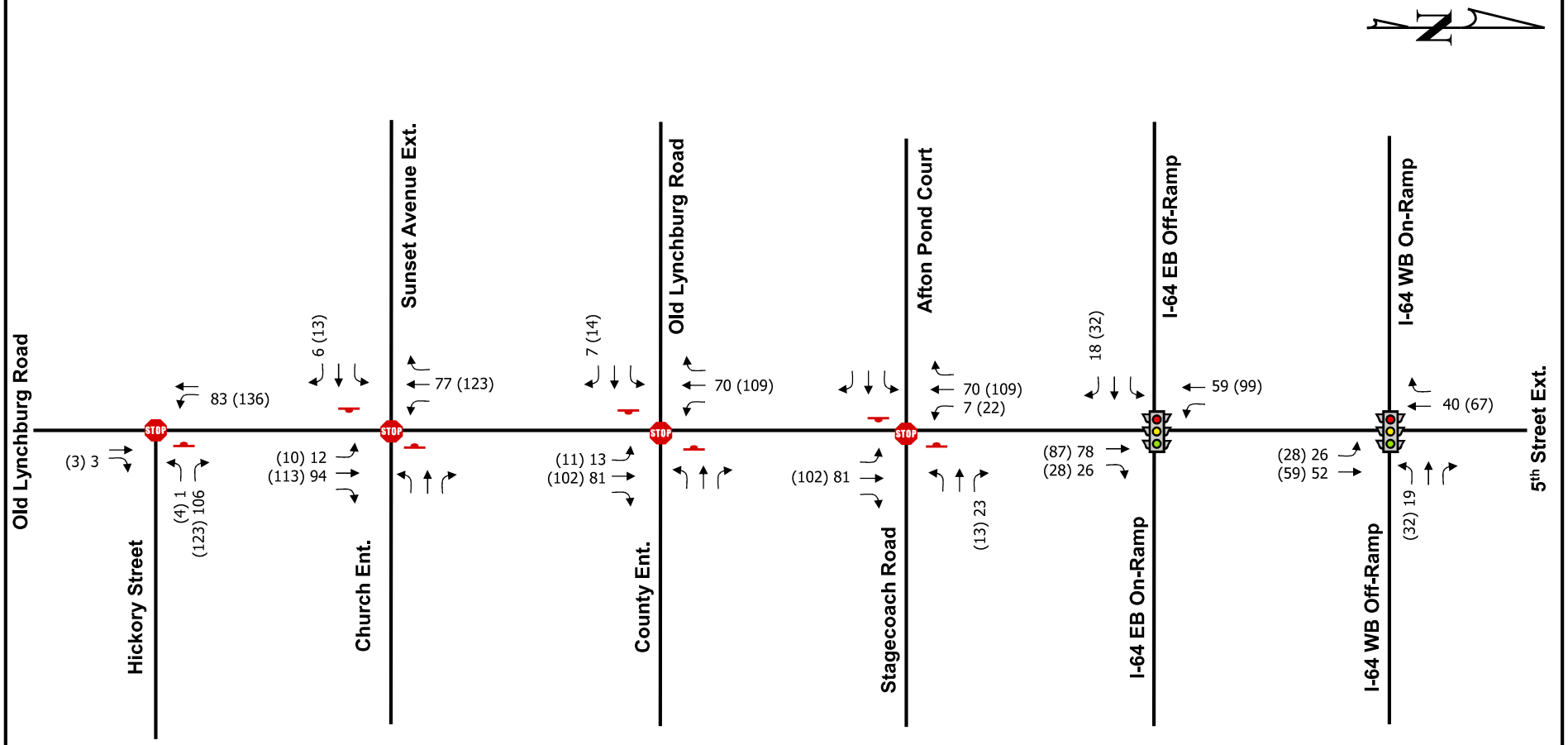
Figure
E-9




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
## Southwood Phase 1 Trip Distributions - Commercial

Figure
E-10




TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

# Southwood Phase 2 TIA
# Southwood Phase 1 Site Trips

Figure
E-11

# Appendix F
# Capacity Analysis Worksheets
# For 2030 Total Background Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 207 | 199 | 4 | 122 | 91 |
| Future Vol, veh/h | 4 | 207 | 199 | 4 | 122 | 91 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 7 | 4 | 0 | 13 | 8 |
| Mvmt Flow | 4 | 225 | 216 | 4 | 133 | 99 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 534 | 218 | 0 | 0 | 220 | 0 |
| Stage 1 | 218 | - | - | - | - | - |
| Stage 2 | 316 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.305 | - | - | 4.295 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3665 | - | - | 2.3235 | - |
| Pot Cap-1 Maneuver | 495 | 807 | - | - | 1278 | - |
| Stage 1 | 823 | - | - | - | - | - |
| Stage 2 | 718 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 444 | 807 | - | - | 1278 | - |
| Mov Cap-2 Maneuver | 444 | - | - | - | - | - |
| Stage 1 | 823 | - | - | - | - | - |
| Stage 2 | 643 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.4 | 0 | 4.7 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 795 | 1278 | - |
| HCM Lane V/C Ratio | - | - | 0.288 | 0.104 | - |
| HCM Control Delay (s) | - | - | 11.4 | 8.1 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 223 | 0 | 12 | 0 | 0 | 1 | 18 | 397 | 0 | 6 | 204 | 87 |
| Future Vol, veh/h | 223 | 0 | 12 | 0 | 0 | 1 | 18 | 397 | 0 | 6 | 204 | 87 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 6 |
| Mvmt Flow | 237 | 0 | 13 | 0 | 0 | 1 | 19 | 422 | 0 | 6 | 217 | 93 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 478 | 689 | 109 | 581 | 782 | 211 | 310 | 0 | 0 | 422 | 0 | 0 |
| Stage 1 | 229 | 229 | - | 460 | 460 | - | - | - | - | - | - | - |
| Stage 2 | 249 | 460 | - | 121 | 322 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.58 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.54 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 466 | 371 | 930 | 401 | 328 | 801 | 1262 | - | - | 1148 | - | - |
| Stage 1 | 747 | 718 | - | 556 | 569 | - | - | - | - | - | - | - |
| Stage 2 | 727 | 569 | - | 876 | 655 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 458 | 364 | 930 | 389 | 321 | 801 | 1262 | - | - | 1148 | - | - |
| Mov Cap-2 Maneuver | 458 | 364 | - | 389 | 321 | - | - | - | - | - | - | - |
| Stage 1 | 736 | 714 | - | 548 | 560 | - | - | - | - | - | - | - |
| Stage 2 | 715 | 560 | - | 859 | 652 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 21 | 9.5 | 0.3 | 0.2 |
| HCM LOS | C | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1262 | - | - | 470 | 801 | 1148 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | - | 0.532 | 0.001 | 0.006 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 21 | 9.5 | 8.2 | - | - |
| HCM Lane LOS | A | - | - | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.1 | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 53.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 283 | 2 | 29 | 0 | 1 | 4 | 65 | 584 | 1 | 57 | 45 | 276 | 243 |
| Future Vol, veh/h | 283 | 2 | 29 | 0 | 1 | 4 | 65 | 584 | 1 | 57 | 45 | 276 | 243 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 0 | 14 | 0 | 0 | 0 | 6 | 3 | 0 | 0 | 0 | 6 | 5 |
| Mvmt Flow | 286 | 2 | 29 | 0 | 1 | 4 | 66 | 590 | 1 | 58 | 45 | 279 | 245 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 913 | 1208 | 140 | 1069 | 1452 | 295 | 524 | 0 | 0 | 590 | 591 | 0 | 0 |
| Stage 1 | 485 | 485 | - | 722 | 722 | - | - | - | - | - | - | - | - |
| Stage 2 | 428 | 723 | - | 347 | 730 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.18 | 7.5 | 6.5 | 6.9 | 4.22 | - | - | 6.4 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.44 | 3.5 | 4 | 3.3 | 2.26 | - | - | 2.5 | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 228 | 185 | 846 | 178 | 132 | 707 | 1011 | - | - | 615 | 995 | - | - |
| Stage 1 | 532 | 555 | - | 389 | 434 | - | - | - | - | - | - | - | - |
| Stage 2 | 575 | 434 | - | 648 | 431 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 191 | 149 | 846 | 145 | 106 | 707 | 1011 | - | - | 737 | 737 | - | - |
| Mov Cap-2 Maneuver | ~ 191 | 149 | - | 145 | 106 | - | - | - | - | - | - | - | - |
| Stage 1 | 497 | 477 | - | 364 | 406 | - | - | - | - | - | - | - | - |
| Stage 2 | 533 | 406 | - | 536 | 371 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 266.3 | 15.9 | 0.9 | 1.8 |
| HCM LOS | F | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1011 | - | - | 191 | 650 | 106 | 707 | 737 | - | - |
| HCM Lane V/C Ratio | 0.065 | - | - | 1.497 | 0.048 | 0.01 | 0.006 | 0.14 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 294.3 | 10.8 | 39.3 | 10.1 | 10.7 | - | - |
| HCM Lane LOS | A | - | - | F | B | E | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 17.9 | 0.2 | 0 | 0 | 0.5 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 79 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 386 | 0 | 929 | 34 | 325 | 634 | 10 |
| Future Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 386 | 0 | 929 | 34 | 325 | 634 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 33 | 1 | 20 | 18 | 1 | 420 | 0 | 1010 | 37 | 353 | 689 | 11 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1901 | 2442 | 345 | 2061 | 2416 | 505 | 700 | 0 | 0 | 1047 | 0 | 0 |
| Stage 1 | 1395 | 1395 | - | 1010 | 1010 | - | - | - | - | - | - | - |
| Stage 2 | 506 | 1047 | - | 1051 | 1406 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 43 | 32 | 626 | 30 | 33 | 510 | 906 | - | - | 660 | - | - |
| Stage 1 | 151 | 210 | - | 250 | 320 | - | - | - | - | - | - | - |
| Stage 2 | 522 | 308 | - | 235 | 208 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 4 | 15 | 626 | ~ 16 | 15 | 510 | 906 | - | - | 660 | - | - |
| Mov Cap-2 Maneuver | ~ 4 | 15 | - | ~ 16 | 15 | - | - | - | - | - | - | - |
| Stage 1 | 151 | 98 | - | 250 | 320 | - | - | - | - | - | - | - |
| Stage 2 | 92 | 308 | - | 105 | 97 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 3208.8 | 63.7 | 0 | 5.6 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 906 | - | - | 4 | 626 | 16 | 510 | 660 | - | - |
| HCM Lane V/C Ratio | - | - | - | 8.424 | 0.031 | 1.223 | 0.823 | 0.535 | - | - |
| HCM Control Delay (s) | 0 | - | - | $ 5065.7 | 10.9 | $ 635.6 | 37 | 16.6 | - | - |
| HCM Lane LOS | A | - | - | F | B | F | E | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 5.9 | 0.1 | 2.9 | 8.1 | 3.2 | - | - |

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



| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 593 | 332 | 1445 | 202 | 752 |
| v/c Ratio | 1.25 | 0.58 | 1.27 | 0.44 | 0.36 |
| Control Delay | 158.4 | 14.8 | 156.2 | 18.3 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 158.4 | 14.8 | 156.2 | 18.3 | 4.9 |
| Queue Length 50th (ft) | ~424 | 54 | ~541 | 59 | 80 |
| Queue Length 95th (ft) | #625 | 140 | #677 | m83 | m77 |
| Internal Link Dist (ft) | 1069 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 476 | 577 | 1139 | 461 | 2062 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.25 | 0.58 | 1.27 | 0.44 | 0.36 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 546 | 0 | 305 | 0 | 0 | 0 | 0 | 972 | 357 | 186 | 692 | 0 |
| Future Volume (veh/h) | 546 | 0 | 305 | 0 | 0 | 0 | 0 | 972 | 357 | 186 | 692 | 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 | 1885 | 1900 | 1870 | | | | 0 | 1870 | 1885 | 1885 | 1826 | 0 |
| Adj Flow Rate, veh/h | 593 | 0 | 332 | | | | 0 | 1057 | 388 | 202 | 752 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 0 | 2 | | | | 0 | 2 | 1 | 1 | 5 | 0 |
| Cap, veh/h | 483 | 0 | 423 | | | | 0 | 824 | 298 | 459 | 2082 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.32 | 0.32 | 0.42 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1585 | | | | 0 | 2650 | 925 | 1795 | 3561 | 0 |
| Grp Volume(v), veh/h | 593 | 0 | 332 | | | | 0 | 730 | 715 | 202 | 752 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1585 | | | | 0 | 1777 | 1704 | 1795 | 1735 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 17.5 | | | | 0.0 | 29.0 | 29.0 | 2.4 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 17.5 | | | | 0.0 | 29.0 | 29.0 | 2.4 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.54 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 549 | 459 | 2082 | 0 |
| V/C Ratio(X) | 1.23 | 0.00 | 0.79 | | | | 0.00 | 1.28 | 1.30 | 0.44 | 0.36 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 549 | 459 | 2082 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.23 | 0.23 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 30.6 | | | | 0.0 | 30.5 | 30.5 | 20.7 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 120.2 | 0.0 | 9.4 | | | | 0.0 | 136.9 | 148.9 | 0.2 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 26.1 | 0.0 | 7.5 | | | | 0.0 | 33.1 | 33.5 | 2.4 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 153.2 | 0.0 | 40.0 | | | | 0.0 | 167.4 | 179.4 | 20.9 | 0.1 | 0.0 |
| LnGrp LOS | F | A | D | | | | A | F | F | C | A | A |
| Approach Vol, veh/h | | 925 | | | | | | 1445 | | | 954 | |
| Approach Delay, s/veh | | 112.6 | | | | | | 173.4 | | | 4.5 | |
| Approach LOS | | F | | | | | | F | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.0 | 35.0 | | 30.0 | | 60.0 | | | | | | |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 | | | | | | |
| Max Green Setting (Gmax), s | 19.0 | 29.0 | | 24.0 | | 54.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 4.4 | 31.0 | | 26.0 | | 2.0 | | | | | | |
| Green Ext Time (p_c), s | 0.4 | 0.0 | | 0.0 | | 6.8 | | | | | | |

| Intersection Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM 6th Ctrl Delay | | | 108.0 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 247 | 367 | 466 | 1189 | 1155 |
| v/c Ratio | 0.72 | 0.93 | 0.84 | 0.50 | 0.94 |
| Control Delay | 46.5 | 56.2 | 29.7 | 5.4 | 39.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.5 | 56.2 | 29.7 | 5.4 | 39.2 |
| Queue Length 50th (ft) | 130 | 147 | 240 | 146 | 282 |
| Queue Length 95th (ft) | #227 | #312 | m180 | m108 | #427 |
| Internal Link Dist (ft) | 742 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 359 | 410 | 554 | 2355 | 1232 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.69 | 0.90 | 0.84 | 0.50 | 0.94 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 237 | 0 | 352 | 447 | 1141 | 0 | 0 | 629 | 480 |
| Future Volume (veh/h) | 0 | 0 | 0 | 237 | 0 | 352 | 447 | 1141 | 0 | 0 | 629 | 480 |
| 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 | | | | 1811 | 1900 | 1826 | 1870 | 1870 | 0 | 0 | 1841 | 1856 |
| Adj Flow Rate, veh/h | | | | 247 | 0 | 367 | 466 | 1189 | 0 | 0 | 655 | 500 |
| Peak Hour Factor | | | | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | | | | 6 | 0 | 5 | 2 | 2 | 0 | 0 | 4 | 3 |
| Cap, veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 610 | 463 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.53 | 1.00 | 0.00 | 0.00 | 0.32 | 0.32 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1547 | 1781 | 3647 | 0 | 0 | 1985 | 1438 |
| Grp Volume(v), veh/h | | | | 247 | 0 | 367 | 466 | 1189 | 0 | 0 | 605 | 550 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1547 | 1781 | 1777 | 0 | 0 | 1749 | 1582 |
| Q Serve(g_s), s | | | | 11.2 | 0.0 | 19.0 | 14.6 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 |
| Cycle Q Clear(g_c), s | | | | 11.2 | 0.0 | 19.0 | 14.6 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.91 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 563 | 510 |
| V/C Ratio(X) | | | | 0.65 | 0.00 | 1.12 | 0.84 | 0.51 | 0.00 | 0.00 | 1.07 | 1.08 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 563 | 510 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 32.4 | 0.0 | 35.5 | 17.5 | 0.0 | 0.0 | 0.0 | 30.5 | 30.5 |
| Incr Delay (d2), s/veh | | | | 3.8 | 0.0 | 87.4 | 1.1 | 0.1 | 0.0 | 0.0 | 59.2 | 62.8 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 5.1 | 0.0 | 22.5 | 4.6 | 0.0 | 0.0 | 0.0 | 20.4 | 19.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 36.2 | 0.0 | 122.9 | 18.7 | 0.1 | 0.0 | 0.0 | 89.7 | 93.3 |
| LnGrp LOS | | | | D | A | F | B | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 614 | | | 1655 | | | 1155 | |
| Approach Delay, s/veh | | | | | 88.0 | | | 5.3 | | | 91.5 | |
| Approach LOS | | | | | F | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 30.0 | 35.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 24.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 21.0 | 16.6 | 31.0 |
| Green Ext Time (p_c), s | 13.4 | 0.0 | 0.9 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 49.2 |
| HCM 6th LOS | D |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LR | TR | L |
| Maximum Queue (ft) | 104 | 2 | 80 |
| Average Queue (ft) | 50 | 0 | 21 |
| 95th Queue (ft) | 81 | 2 | 60 |
| Link Distance (ft) | 461 | 108 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 295 |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | L | R |
| Maximum Queue (ft) | 155 | 18 | 17 | 18 | 2 |
| Average Queue (ft) | 67 | 1 | 2 | 1 | 0 |
| 95th Queue (ft) | 122 | 9 | 12 | 9 | 2 |
| Link Distance (ft) | 619 | 314 | | | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | | | 250 | 290 | 330 |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | T | UL | T | R |
| Maximum Queue (ft) | 250 | 685 | 10 | 20 | 67 | 8 | 11 | 79 | 2 | 30 |
| Average Queue (ft) | 232 | 481 | 0 | 3 | 21 | 0 | 1 | 32 | 0 | 2 |
| 95th Queue (ft) | 303 | 924 | 6 | 14 | 54 | 5 | 6 | 62 | 2 | 15 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | 1952 | | 1591 | |
| Upstream Blk Time (%) | | 44 | | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | | 290 | | 400 |
| Storage Blk Time (%) | 59 | 44 | | | | | | | | |
| Queuing Penalty (veh) | 18 | 124 | | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | T | T | R | L | T | T |
| Maximum Queue (ft) | 290 | 115 | 797 | 100 | 8 | 32 | 29 | 290 | 417 | 226 |
| Average Queue (ft) | 223 | 19 | 717 | 71 | 0 | 3 | 2 | 169 | 80 | 31 |
| 95th Queue (ft) | 356 | 86 | 949 | 145 | 5 | 22 | 14 | 305 | 405 | 246 |
| Link Distance (ft) | 265 | | 750 | | 1591 | 1591 | | | 1427 | 1427 |
| Upstream Blk Time (%) | 66 | | 83 | | | | | | | |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | | |
| Storage Bay Dist (ft) | | 115 | | 100 | | | 300 | 300 | | |
| Storage Blk Time (%) | 83 | 0 | 88 | 52 | | | | 10 | 6 | |
| Queuing Penalty (veh) | 15 | 0 | 339 | 10 | | | | 31 | 21 | |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 1101 | 500 | 738 | 757 | 186 | 63 | 51 |
| Average Queue (ft) | 832 | 385 | 383 | 404 | 85 | 27 | 13 |
| 95th Queue (ft) | 1363 | 690 | 842 | 867 | 150 | 55 | 37 |
| Link Distance (ft) | 1075 | | 1427 | 1427 | | 607 | 607 |
| Upstream Blk Time (%) | 38 | | 0 | 0 | | | |
| Queuing Penalty (veh) | 0 | | 0 | 1 | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 39 | 2 | | | | | |
| Queuing Penalty (veh) | 120 | 13 | | | | | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 244 | 349 | 139 | 411 | 383 | 505 | 580 |
| Average Queue (ft) | 125 | 165 | 131 | 180 | 80 | 270 | 319 |
| 95th Queue (ft) | 207 | 283 | 155 | 381 | 252 | 530 | 604 |
| Link Distance (ft) | 754 | | | 607 | 607 | 1340 | 1340 |
| Upstream Blk Time (%) | | | | | 0 | | |
| Queuing Penalty (veh) | | | | | 0 | | |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | | | 12 | 4 | | | |
| Queuing Penalty (veh) | | | 70 | 16 | | | |

## Network Summary

Network wide Queuing Penalty: 777

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 191 | 99 | 6 | 232 | 229 |
| Future Vol, veh/h | 5 | 191 | 99 | 6 | 232 | 229 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 3 | 2 | 0 | 1 | 1 |
| Mvmt Flow | 5 | 208 | 108 | 7 | 252 | 249 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 741 | 112 | 0 | 0 | 115 | 0 |
| Stage 1 | 112 | - | - | - | - | - |
| Stage 2 | 629 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.245 | - | - | 4.115 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3285 | - | - | 2.2095 | - |
| Pot Cap-1 Maneuver | 371 | 937 | - | - | 1480 | - |
| Stage 1 | 918 | - | - | - | - | - |
| Stage 2 | 499 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 308 | 937 | - | - | 1480 | - |
| Mov Cap-2 Maneuver | 308 | - | - | - | - | - |
| Stage 1 | 918 | - | - | - | - | - |
| Stage 2 | 414 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.3 | 0 | 4 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 891 | 1480 | - |
| HCM Lane V/C Ratio | - | - | 0.239 | 0.17 | - |
| HCM Control Delay (s) | - | - | 10.3 | 7.9 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 0.6 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 197 | 0 | 31 | 0 | 0 | 1 | 14 | 282 | 0 | 9 | 438 | 170 |
| Future Vol, veh/h | 197 | 0 | 31 | 0 | 0 | 1 | 14 | 282 | 0 | 9 | 438 | 170 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Mvmt Flow | 210 | 0 | 33 | 0 | 0 | 1 | 15 | 300 | 0 | 10 | 466 | 181 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 666 | 816 | 233 | 583 | 997 | 150 | 647 | 0 | 0 | 300 | 0 | 0 |
| Stage 1 | 486 | 486 | - | 330 | 330 | - | - | - | - | - | - | - |
| Stage 2 | 180 | 330 | - | 253 | 667 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.02 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.36 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 345 | 314 | 757 | 400 | 246 | 876 | 948 | - | - | 1273 | - | - |
| Stage 1 | 531 | 554 | - | 663 | 649 | - | - | - | - | - | - | - |
| Stage 2 | 804 | 649 | - | 735 | 460 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 338 | 306 | 757 | 376 | 240 | 876 | 948 | - | - | 1273 | - | - |
| Mov Cap-2 Maneuver | 338 | 306 | - | 376 | 240 | - | - | - | - | - | - | - |
| Stage 1 | 523 | 550 | - | 652 | 639 | - | - | - | - | - | - | - |
| Stage 2 | 790 | 639 | - | 697 | 456 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 32.2 | 9.1 | 0.4 | 0.1 |
| HCM LOS | D | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 948 | - | - | 366 | 876 | 1273 | - | - |
| HCM Lane V/C Ratio | 0.016 | - | - | 0.663 | 0.001 | 0.008 | - | - |
| HCM Control Delay (s) | 8.9 | - | - | 32.2 | 9.1 | 7.8 | - | - |
| HCM Lane LOS | A | - | - | D | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.6 | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 112.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 308 | 1 | 50 | 2 | 0 | 28 | 32 | 483 | 2 | 86 | 5 | 587 | 331 |
| Future Vol, veh/h | 308 | 1 | 50 | 2 | 0 | 28 | 32 | 483 | 2 | 86 | 5 | 587 | 331 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 |
| Mvmt Flow | 321 | 1 | 52 | 2 | 0 | 29 | 33 | 503 | 2 | 90 | 5 | 611 | 345 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1119 | 1372 | 306 | 1065 | 1715 | 252 | 956 | 0 | 0 | 503 | 505 | 0 | 0 |
| Stage 1 | 801 | 801 | - | 569 | 569 | - | - | - | - | - | - | - | - |
| Stage 2 | 318 | 571 | - | 496 | 1146 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.52 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 6.5 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.55 | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 163 | 147 | 696 | 180 | 91 | 754 | 727 | - | - | 677 | 1070 | - | - |
| Stage 1 | 346 | 400 | - | 479 | 509 | - | - | - | - | - | - | - | - |
| Stage 2 | 671 | 508 | - | 529 | 276 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 135 | 120 | 696 | 142 | 74 | 754 | 727 | - | - | 666 | 666 | - | - |
| Mov Cap-2 Maneuver | ~ 135 | 120 | - | 142 | 74 | - | - | - | - | - | - | - | - |
| Stage 1 | 330 | 343 | - | 457 | 486 | - | - | - | - | - | - | - | - |
| Stage 2 | 616 | 485 | - | 418 | 237 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 597.2 | 11.4 | 0.6 | 1 |
| HCM LOS | F | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 727 | - | - | 135 | 636 | 142 | 754 | 666 | - | - |
| HCM Lane V/C Ratio | 0.046 | - | - | 2.377 | 0.084 | 0.015 | 0.039 | 0.142 | - | - |
| HCM Control Delay (s) | 10.2 | - | - | $ 694.2 | 11.2 | 30.7 | 10 | 11.3 | - | - |
| HCM Lane LOS | B | - | - | F | B | D | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 27.6 | 0.3 | 0 | 0.1 | 0.5 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 163 | 8 | 887 | 30 | 199 | 994 | 29 |
| Future Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 163 | 8 | 887 | 30 | 199 | 994 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 26 | 1 | 4 | 15 | 1 | 168 | 8 | 914 | 31 | 205 | 1025 | 30 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1909 | 2396 | 513 | 1853 | 2395 | 457 | 1055 | 0 | 0 | 945 | 0 | 0 |
| Stage 1 | 1435 | 1435 | - | 930 | 930 | - | - | - | - | - | - | - |
| Stage 2 | 474 | 961 | - | 923 | 1465 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 42 | 34 | 483 | 44 | 34 | 548 | 668 | - | - | 722 | - | - |
| Stage 1 | 143 | 201 | - | 280 | 349 | - | - | - | - | - | - | - |
| Stage 2 | 545 | 337 | - | 282 | 194 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 22 | 24 | 483 | 33 | 24 | 548 | 668 | - | - | 722 | - | - |
| Mov Cap-2 Maneuver | ~ 22 | 24 | - | 33 | 24 | - | - | - | - | - | - | - |
| Stage 1 | 141 | 144 | - | 277 | 345 | - | - | - | - | - | - | - |
| Stage 2 | 372 | 333 | - | 199 | 139 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 453.5 | 31.3 | 0.1 | 1.9 |
| HCM LOS | F | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 668 | - | - | 22 | 483 | 32 | 548 | 722 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | - | 1.218 | 0.009 | 0.515 | 0.307 | 0.284 | - | - |
| HCM Control Delay (s) | 10.5 | - | - | $ 521.3 | 12.5 | 203.4 | 14.4 | 12 | - | - |
| HCM Lane LOS | B | - | - | F | B | F | B | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.5 | 0 | 1.7 | 1.3 | 1.2 | - | - |

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

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 530 | 351 | 1134 | 370 | 963 |
| v/c Ratio | 1.12 | 0.67 | 1.20 | 0.67 | 0.44 |
| Control Delay | 112.5 | 25.2 | 133.0 | 24.9 | 6.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 112.5 | 25.2 | 133.0 | 24.9 | 6.6 |
| Queue Length 50th (ft) | ~351 | 110 | ~410 | 176 | 85 |
| Queue Length 95th (ft) | #546 | 208 | #540 | m158 | m74 |
| Internal Link Dist (ft) | 1200 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 472 | 526 | 942 | 549 | 2166 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.12 | 0.67 | 1.20 | 0.67 | 0.44 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 514 | 0 | 340 | 0 | 0 | 0 | 0 | 842 | 258 | 359 | 934 | 0 |
| Future Volume (veh/h) | 514 | 0 | 340 | 0 | 0 | 0 | 0 | 842 | 258 | 359 | 934 | 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 | 1900 | 1900 | | | | 0 | 1870 | 1870 | 1856 | 1900 | 0 |
| Adj Flow Rate, veh/h | 530 | 0 | 351 | | | | 0 | 868 | 266 | 370 | 963 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 0 | 0 | | | | 0 | 2 | 2 | 3 | 0 | 0 |
| Cap, veh/h | 483 | 0 | 429 | | | | 0 | 715 | 219 | 551 | 2166 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.27 | 0.27 | 0.53 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1610 | | | | 0 | 2773 | 820 | 1767 | 3705 | 0 |
| Grp Volume(v), veh/h | 530 | 0 | 351 | | | | 0 | 575 | 559 | 370 | 963 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1610 | | | | 0 | 1777 | 1723 | 1767 | 1805 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 18.4 | | | | 0.0 | 24.0 | 24.0 | 8.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 18.4 | | | | 0.0 | 24.0 | 24.0 | 8.1 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.48 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 459 | 551 | 2166 | 0 |
| V/C Ratio(X) | 1.10 | 0.00 | 0.82 | | | | 0.00 | 1.21 | 1.22 | 0.67 | 0.44 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 459 | 551 | 2166 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 30.9 | | | | 0.0 | 33.0 | 33.0 | 16.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 70.4 | 0.0 | 11.7 | | | | 0.0 | 114.4 | 115.9 | 0.3 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 19.5 | 0.0 | 8.2 | | | | 0.0 | 24.6 | 24.0 | 3.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 103.4 | 0.0 | 42.7 | | | | 0.0 | 147.4 | 148.9 | 16.7 | 0.1 | 0.0 |
| LnGrp LOS | F | A | D | | | | A | F | F | B | A | A |
| Approach Vol, veh/h | | 881 | | | | | | 1134 | | | 1333 | |
| Approach Delay, s/veh | | 79.2 | | | | | | 148.1 | | | 4.7 | |
| Approach LOS | | E | | | | | | F | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 30.0 | 30.0 | | 30.0 | | 60.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 24.0 | 24.0 | | 24.0 | | 54.0 |
| Max Q Clear Time (g_c+I1), s | 10.1 | 26.0 | | 26.0 | | 2.0 |
| Green Ext Time (p_c), s | 0.9 | 0.0 | | 0.0 | | 7.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 72.9 |
| HCM 6th LOS | E |



| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 298 | 358 | 349 | 1060 | 1717 |
| v/c Ratio | 0.84 | 0.85 | 0.77 | 0.45 | 1.21 |
| Control Delay | 55.7 | 41.6 | 22.3 | 1.7 | 127.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 55.7 | 41.6 | 22.3 | 1.7 | 127.4 |
| Queue Length 50th (ft) | 162 | 127 | 167 | 45 | ~615 |
| Queue Length 95th (ft) | #289 | #273 | m136 | m34 | #754 |
| Internal Link Dist (ft) | 819 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 377 | 439 | 456 | 2361 | 1417 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.79 | 0.82 | 0.77 | 0.45 | 1.21 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 289 | 0 | 347 | 339 | 1028 | 0 | 0 | 1027 | 638 |
| Future Volume (veh/h) | 0 | 0 | 0 | 289 | 0 | 347 | 339 | 1028 | 0 | 0 | 1027 | 638 |
| 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 | | | | 1885 | 1900 | 1885 | 1870 | 1870 | 0 | 0 | 1885 | 1885 |
| Adj Flow Rate, veh/h | | | | 298 | 0 | 358 | 349 | 1060 | 0 | 0 | 1059 | 658 |
| Peak Hour Factor | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | | | | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 1 |
| Cap, veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 822 | 481 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.42 | 1.00 | 0.00 | 0.00 | 0.38 | 0.38 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1598 | 1781 | 3647 | 0 | 0 | 2269 | 1272 |
| Grp Volume(v), veh/h | | | | 298 | 0 | 358 | 349 | 1060 | 0 | 0 | 860 | 857 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1598 | 1781 | 1777 | 0 | 0 | 1791 | 1656 |
| Q Serve(g_s), s | | | | 14.0 | 0.0 | 19.0 | 10.1 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Cycle Q Clear(g_c), s | | | | 14.0 | 0.0 | 19.0 | 10.1 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.77 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 626 |
| V/C Ratio(X) | | | | 0.78 | 0.00 | 1.06 | 0.77 | 0.46 | 0.00 | 0.00 | 1.27 | 1.37 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 626 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 33.5 | 0.0 | 35.5 | 22.3 | 0.0 | 0.0 | 0.0 | 28.0 | 28.0 |
| Incr Delay (d2), s/veh | | | | 10.0 | 0.0 | 66.2 | 0.7 | 0.1 | 0.0 | 0.0 | 133.7 | 176.1 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 7.0 | 0.0 | 21.3 | 4.2 | 0.0 | 0.0 | 0.0 | 38.2 | 42.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 43.5 | 0.0 | 101.7 | 23.0 | 0.1 | 0.0 | 0.0 | 161.7 | 204.1 |
| LnGrp LOS | | | | D | A | F | C | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 656 | | | 1409 | | | 1717 | |
| Approach Delay, s/veh | | | | | 75.2 | | | 5.7 | | | 182.9 | |
| Approach LOS | | | | | E | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 25.0 | 40.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 19.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 21.0 | 12.1 | 36.0 |
| Green Ext Time (p_c), s | 11.2 | 0.0 | 0.6 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 98.2 |
| HCM 6th LOS | F |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | L |
| Maximum Queue (ft) | 81 | 62 |
| Average Queue (ft) | 42 | 18 |
| 95th Queue (ft) | 68 | 50 |
| Link Distance (ft) | 461 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 295 |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | L | R |
| Maximum Queue (ft) | 146 | 14 | 21 | 22 | 5 |
| Average Queue (ft) | 67 | 1 | 3 | 2 | 0 |
| 95th Queue (ft) | 121 | 6 | 14 | 12 | 5 |
| Link Distance (ft) | 619 | 314 | | | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | | | 250 | 290 | 330 |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | T | UL | R |
| Maximum Queue (ft) | 250 | 718 | 22 | 39 | 45 | 5 | 6 | 66 | 33 |
| Average Queue (ft) | 247 | 642 | 2 | 15 | 14 | 0 | 0 | 29 | 2 |
| 95th Queue (ft) | 275 | 864 | 12 | 34 | 38 | 4 | 5 | 60 | 16 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | 1952 | | |
| Upstream Blk Time (%) | | 80 | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | | 290 | 400 |
| Storage Blk Time (%) | 77 | 52 | | | | | | | |
| Queuing Penalty (veh) | 39 | 160 | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | L | T | T | R | L | T | R |
| Maximum Queue (ft) | 140 | 56 | 338 | 100 | 33 | 11 | 25 | 26 | 140 | 2 | 5 |
| Average Queue (ft) | 49 | 6 | 126 | 56 | 5 | 3 | 5 | 2 | 63 | 0 | 0 |
| 95th Queue (ft) | 134 | 32 | 465 | 109 | 22 | 29 | 35 | 14 | 112 | 2 | 4 |
| Link Distance (ft) | 265 | | 685 | | | 1592 | 1592 | | | 1427 | |
| Upstream Blk Time (%) | 2 | | 5 | | | | | | | | |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | | | |
| Storage Bay Dist (ft) | | 115 | | 100 | 265 | | | 300 | 300 | | 290 |
| Storage Blk Time (%) | 10 | 0 | 19 | 11 | | | | | | | |
| Queuing Penalty (veh) | 0 | 0 | 31 | 2 | | | | | | | |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 772 | 497 | 1123 | 1146 | 239 | 194 | 117 |
| Average Queue (ft) | 401 | 191 | 743 | 762 | 142 | 56 | 48 |
| 95th Queue (ft) | 775 | 464 | 1294 | 1312 | 224 | 120 | 92 |
| Link Distance (ft) | 1206 | | 1427 | 1427 | | 603 | 603 |
| Upstream Blk Time (%) | 1 | | 1 | 1 | | | |
| Queuing Penalty (veh) | 0 | | 5 | 8 | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 7 | 1 | | | 0 | 0 | |
| Queuing Penalty (veh) | 24 | 4 | | | 1 | 0 | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 292 | 284 | 139 | 298 | 207 | 1383 | 1388 |
| Average Queue (ft) | 155 | 148 | 116 | 72 | 16 | 1320 | 1329 |
| 95th Queue (ft) | 260 | 247 | 159 | 246 | 110 | 1523 | 1505 |
| Link Distance (ft) | 832 | | | 603 | 603 | 1342 | 1342 |
| Upstream Blk Time (%) | | | | | | 60 | 73 |
| Queuing Penalty (veh) | | | | | | 0 | 0 |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | 0 | 0 | 4 | 1 | | | |
| Queuing Penalty (veh) | 0 | 0 | 22 | 4 | | | |

## Network Summary

Network wide Queuing Penalty: 300

# MOVEMENT SUMMARY

## Site: 101 [5th Street @ Old Lynchburg Road - 2030 Background AM (Site Folder: General)]

Southwood Phase 2
2030 Background Conditions
Site Category: (None)
Roundabout
Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 120.0 %

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Old Lynchburg Road | | | | | | | | | | | | | | |
| 3 | L2 | 65 | 0.0 | 66 | 0.0 | 0.424 | 10.4 | LOS B | 2.8 | 71.7 | 0.71 | 0.62 | 0.71 | 30.8 |
| 8 | T1 | 584 | 6.0 | 590 | 6.0 | 0.424 | 10.1 | LOS B | 2.9 | 75.1 | 0.70 | 0.61 | 0.70 | 31.1 |
| 18 | R2 | 1 | 3.0 | 1 | 3.0 | 0.424 | 9.5 | LOS A | 2.9 | 75.1 | 0.70 | 0.59 | 0.70 | 26.6 |
| Approach | | 650 | 5.4 | 657 | 5.4 | 0.424 | 10.2 | LOS B | 2.9 | 75.1 | 0.70 | 0.61 | 0.70 | 31.0 |
| East: County Complex | | | | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 1 | 0.0 | 0.015 | 9.0 | LOS A | 0.1 | 1.4 | 0.65 | 0.56 | 0.65 | 27.2 |
| 6 | T1 | 1 | 0.0 | 1 | 0.0 | 0.015 | 9.0 | LOS A | 0.1 | 1.4 | 0.65 | 0.56 | 0.65 | 26.1 |
| 16 | R2 | 4 | 0.0 | 4 | 0.0 | 0.015 | 9.0 | LOS A | 0.1 | 1.4 | 0.65 | 0.56 | 0.65 | 25.5 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.015 | 9.0 | LOS A | 0.1 | 1.4 | 0.65 | 0.56 | 0.65 | 25.9 |
| North: 5th Street | | | | | | | | | | | | | | |
| 7u | U | 57 | 0.0 | 58 | 0.0 | 0.389 | 7.8 | LOS A | 2.5 | 64.8 | 0.30 | 0.15 | 0.30 | 31.1 |
| 7 | L2 | 45 | 0.0 | 45 | 0.0 | 0.389 | 7.8 | LOS A | 2.5 | 64.8 | 0.30 | 0.15 | 0.30 | 27.0 |
| 4 | T1 | 276 | 6.0 | 279 | 6.0 | 0.389 | 8.0 | LOS A | 2.5 | 64.8 | 0.30 | 0.15 | 0.30 | 31.3 |
| 14 | R2 | 243 | 5.0 | 245 | 5.0 | 0.277 | 7.0 | LOS A | 1.5 | 39.8 | 0.28 | 0.14 | 0.28 | 30.1 |
| Approach | | 621 | 4.6 | 627 | 4.6 | 0.389 | 7.6 | LOS A | 2.5 | 64.8 | 0.29 | 0.15 | 0.29 | 30.5 |
| West: Old Lynchburg Road | | | | | | | | | | | | | | |
| 5 | L2 | 283 | 2.0 | 286 | 2.0 | 0.459 | 11.8 | LOS B | 3.2 | 82.7 | 0.71 | 0.68 | 0.79 | 27.8 |
| 2 | T1 | 2 | 0.0 | 2 | 0.0 | 0.459 | 11.6 | LOS B | 3.2 | 82.7 | 0.71 | 0.68 | 0.79 | 24.5 |
| 12 | R2 | 29 | 14.0 | 29 | 14.0 | 0.459 | 12.6 | LOS B | 3.2 | 82.7 | 0.71 | 0.68 | 0.79 | 27.8 |
| Approach | | 314 | 3.1 | 317 | 3.1 | 0.459 | 11.8 | LOS B | 3.2 | 82.7 | 0.71 | 0.68 | 0.79 | 27.7 |
| All Vehicles | | 1591 | 4.6 | 1607 | 4.6 | 0.459 | 9.5 | LOS A | 3.2 | 82.7 | 0.54 | 0.44 | 0.56 | 30.1 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [5th Street @ Old Lynchburg Road - 2030 Background PM (Site Folder: General)]

Southwood Phase 2
2030 Background Conditions
Site Category: (None)
Roundabout
Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 120.0 %

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Old Lynchburg Road | | | | | | | | | | | | | | |
| 3 | L2 | 32 | 0.0 | 33 | 0.0 | 0.344 | 9.2 | LOS A | 2.2 | 55.6 | 0.70 | 0.61 | 0.70 | 31.6 |
| 8 | T1 | 483 | 1.0 | 503 | 1.0 | 0.344 | 8.7 | LOS A | 2.3 | 58.2 | 0.69 | 0.59 | 0.69 | 31.8 |
| 18 | R2 | 2 | 0.0 | 2 | 0.0 | 0.344 | 8.2 | LOS A | 2.3 | 58.2 | 0.69 | 0.58 | 0.69 | 27.1 |
| Approach | | 517 | 0.9 | 539 | 0.9 | 0.344 | 8.7 | LOS A | 2.3 | 58.2 | 0.69 | 0.59 | 0.69 | 31.8 |
| East: County Complex | | | | | | | | | | | | | | |
| 1 | L2 | 2 | 0.0 | 2 | 0.0 | 0.073 | 9.3 | LOS A | 0.3 | 7.1 | 0.65 | 0.64 | 0.65 | 27.2 |
| 6 | T1 | 1 | 0.0 | 1 | 0.0 | 0.073 | 9.3 | LOS A | 0.3 | 7.1 | 0.65 | 0.64 | 0.65 | 26.2 |
| 16 | R2 | 28 | 0.0 | 29 | 0.0 | 0.073 | 9.3 | LOS A | 0.3 | 7.1 | 0.65 | 0.64 | 0.65 | 25.6 |
| Approach | | 31 | 0.0 | 32 | 0.0 | 0.073 | 9.3 | LOS A | 0.3 | 7.1 | 0.65 | 0.64 | 0.65 | 25.7 |
| North: 5th Street | | | | | | | | | | | | | | |
| 7u | U | 86 | 5.0 | 90 | 5.0 | 0.655 | 13.0 | LOS B | 6.9 | 174.5 | 0.34 | 0.14 | 0.34 | 29.4 |
| 7 | L2 | 5 | 0.0 | 5 | 0.0 | 0.655 | 12.9 | LOS B | 6.9 | 174.5 | 0.34 | 0.14 | 0.34 | 25.7 |
| 4 | T1 | 573 | 0.0 | 597 | 0.0 | 0.655 | 12.9 | LOS B | 6.9 | 174.5 | 0.34 | 0.14 | 0.34 | 29.8 |
| 14 | R2 | 331 | 0.0 | 345 | 0.0 | 0.384 | 8.4 | LOS A | 2.5 | 61.3 | 0.23 | 0.10 | 0.23 | 29.5 |
| Approach | | 995 | 0.4 | 1036 | 0.4 | 0.655 | 11.4 | LOS B | 6.9 | 174.5 | 0.30 | 0.13 | 0.30 | 29.6 |
| West: Old Lynchburg Road | | | | | | | | | | | | | | |
| 5 | L2 | 308 | 1.0 | 321 | 1.0 | 0.702 | 24.6 | LOS C | 8.1 | 204.9 | 0.94 | 1.23 | 1.65 | 24.2 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.702 | 24.5 | LOS C | 8.1 | 204.9 | 0.94 | 1.23 | 1.65 | 21.6 |
| 12 | R2 | 51 | 0.0 | 53 | 0.0 | 0.702 | 24.5 | LOS C | 8.1 | 204.9 | 0.94 | 1.23 | 1.65 | 24.3 |
| Approach | | 360 | 0.9 | 375 | 0.9 | 0.702 | 24.6 | LOS C | 8.1 | 204.9 | 0.94 | 1.23 | 1.65 | 24.2 |
| All Vehicles | | 1903 | 0.6 | 1982 | 0.6 | 0.702 | 13.1 | LOS B | 8.1 | 204.9 | 0.54 | 0.47 | 0.67 | 28.8 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# Appendix G
# Capacity Analysis Worksheets
# For 2030 Total Future Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 353 | 199 | 6 | 217 | 91 |
| Future Vol, veh/h | 5 | 353 | 199 | 6 | 217 | 91 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 7 | 4 | 0 | 13 | 8 |
| Mvmt Flow | 5 | 384 | 216 | 7 | 236 | 99 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 742 | 220 | 0 | 0 | 223 | 0 |
| Stage 1 | 220 | - | - | - | - | - |
| Stage 2 | 522 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.305 | - | - | 4.295 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3665 | - | - | 2.3235 | - |
| Pot Cap-1 Maneuver | 370 | 805 | - | - | 1275 | - |
| Stage 1 | 821 | - | - | - | - | - |
| Stage 2 | 566 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 302 | 805 | - | - | 1275 | - |
| Mov Cap-2 Maneuver | 302 | - | - | - | - | - |
| Stage 1 | 821 | - | - | - | - | - |
| Stage 2 | 461 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14 | 0 | 6 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 787 | 1275 | - |
| HCM Lane V/C Ratio | - | - | 0.494 | 0.185 | - |
| HCM Control Delay (s) | - | - | 14 | 8.5 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 2.8 | 0.7 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 223 | 0 | 21 | 0 | 0 | 1 | 35 | 526 | 0 | 6 | 290 | 87 |
| Future Vol, veh/h | 223 | 0 | 21 | 0 | 0 | 1 | 35 | 526 | 0 | 6 | 290 | 87 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 6 |
| Mvmt Flow | 237 | 0 | 22 | 0 | 0 | 1 | 37 | 560 | 0 | 6 | 309 | 93 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 675 | 955 | 155 | 801 | 1048 | 280 | 402 | 0 | 0 | 560 | 0 | 0 |
| Stage 1 | 321 | 321 | - | 634 | 634 | - | - | - | - | - | - | - |
| Stage 2 | 354 | 634 | - | 167 | 414 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.58 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.54 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 336 | 260 | 869 | 279 | 230 | 723 | 1168 | - | - | 1021 | - | - |
| Stage 1 | 660 | 655 | - | 439 | 476 | - | - | - | - | - | - | - |
| Stage 2 | 631 | 476 | - | 824 | 597 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 326 | 250 | 869 | 264 | 221 | 723 | 1168 | - | - | 1021 | - | - |
| Mov Cap-2 Maneuver | 326 | 250 | - | 264 | 221 | - | - | - | - | - | - | - |
| Stage 1 | 639 | 651 | - | 425 | 461 | - | - | - | - | - | - | - |
| Stage 2 | 610 | 461 | - | 798 | 593 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 41.2 | 10 | 0.5 | 0.1 |
| HCM LOS | E | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1168 | - | - | 345 | 723 | 1021 | - | - |
| HCM Lane V/C Ratio | 0.032 | - | - | 0.752 | 0.001 | 0.006 | - | - |
| HCM Control Delay (s) | 8.2 | - | - | 41.2 | 10 | 8.5 | - | - |
| HCM Lane LOS | A | - | - | E | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 5.9 | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 88 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 283 | 2 | 39 | 0 | 1 | 4 | 82 | 696 | 1 | 57 | 45 | 352 | 243 |
| Future Vol, veh/h | 283 | 2 | 39 | 0 | 1 | 4 | 82 | 696 | 1 | 57 | 45 | 352 | 243 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 0 | 14 | 0 | 0 | 0 | 6 | 3 | 0 | 0 | 0 | 6 | 5 |
| Mvmt Flow | 286 | 2 | 39 | 0 | 1 | 4 | 83 | 703 | 1 | 58 | 45 | 356 | 245 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1080 | 1432 | 178 | 1254 | 1676 | 352 | 601 | 0 | 0 | 703 | 704 | 0 | 0 |
| Stage 1 | 562 | 562 | - | 869 | 869 | - | - | - | - | - | - | - | - |
| Stage 2 | 518 | 870 | - | 385 | 807 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.18 | 7.5 | 6.5 | 6.9 | 4.22 | - | - | 6.4 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.44 | 3.5 | 4 | 3.3 | 2.26 | - | - | 2.5 | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 172 | 136 | 798 | 131 | 96 | 650 | 945 | - | - | 522 | 903 | - | - |
| Stage 1 | 479 | 513 | - | 317 | 372 | - | - | - | - | - | - | - | - |
| Stage 2 | 509 | 372 | - | 615 | 397 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 139 | 104 | 798 | 100 | 73 | 650 | 945 | - | - | 639 | 639 | - | - |
| Mov Cap-2 Maneuver | ~ 139 | 104 | - | 100 | 73 | - | - | - | - | - | - | - | - |
| Stage 1 | 437 | 430 | - | 289 | 339 | - | - | - | - | - | - | - | - |
| Stage 2 | 460 | 339 | - | 488 | 333 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 483.9 | 19.5 | 1 | 1.7 |
| HCM LOS | F | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 945 | - | - | 139 | 602 | 73 | 650 | 639 | - | - |
| HCM Lane V/C Ratio | 0.088 | - | - | 2.057 | 0.069 | 0.014 | 0.006 | 0.161 | - | - |
| HCM Control Delay (s) | 9.2 | - | - | $ 552.3 | 11.4 | 55 | 10.6 | 11.7 | - | - |
| HCM Lane LOS | A | - | - | F | B | F | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 23 | 0.2 | 0 | 0 | 0.6 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 50.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 418 | 0 | 1041 | 34 | 340 | 710 | 10 |
| Future Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 418 | 0 | 1041 | 34 | 340 | 710 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 33 | 1 | 20 | 18 | 1 | 454 | 0 | 1132 | 37 | 370 | 772 | 11 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2079 | 2681 | 386 | 2259 | 2655 | 566 | 783 | 0 | 0 | 1169 | 0 | 0 |
| Stage 1 | 1512 | 1512 | - | 1132 | 1132 | - | - | - | - | - | - | - |
| Stage 2 | 567 | 1169 | - | 1127 | 1523 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 32 | 22 | 587 | 21 | 23 | 465 | 844 | - | - | 593 | - | - |
| Stage 1 | 128 | 184 | - | 210 | 281 | - | - | - | - | - | - | - |
| Stage 2 | 481 | 269 | - | 211 | 182 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 0 | 8 | 587 | ~ 9 | 9 | 465 | 844 | - | - | 593 | - | - |
| Mov Cap-2 Maneuver | 0 | 8 | - | ~ 9 | 9 | - | - | - | - | - | - | - |
| Stage 1 | 128 | 69 | - | 210 | 281 | - | - | - | - | - | - | - |
| Stage 2 | ~ 11 | 269 | - | 75 | 68 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 1491.1 | 119.1 | 0 | 6.6 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 844 | - | - | 8 | 587 | 9 | 465 | 593 | - | - |
| HCM Lane V/C Ratio | - | - | - | 4.212 | 0.033 | 2.174 | 0.977 | 0.623 | - | - |
| HCM Control Delay (s) | 0 | - | - | $ 2350.4 | 11.3 | $ 1348.2 | 66.2 | 20.6 | - | - |
| HCM Lane LOS | A | - | - | F | B | F | F | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 5.5 | 0.1 | 3.4 | 12.4 | 4.3 | - | - |

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

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 593 | 355 | 1601 | 202 | 827 |
| v/c Ratio | 1.25 | 0.64 | 1.41 | 0.44 | 0.40 |
| Control Delay | 158.4 | 20.1 | 215.1 | 17.7 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 158.4 | 20.1 | 215.1 | 17.7 | 4.9 |
| Queue Length 50th (ft) | ~424 | 85 | ~642 | 55 | 88 |
| Queue Length 95th (ft) | #625 | 182 | #779 | m75 | m85 |
| Internal Link Dist (ft) | 1069 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 476 | 553 | 1139 | 461 | 2062 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.25 | 0.64 | 1.41 | 0.44 | 0.40 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 546 | 0 | 327 | 0 | 0 | 0 | 0 | 1080 | 393 | 186 | 761 | 0 |
| Future Volume (veh/h) | 546 | 0 | 327 | 0 | 0 | 0 | 0 | 1080 | 393 | 186 | 761 | 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 | 1885 | 1900 | 1870 | | | | 0 | 1870 | 1885 | 1885 | 1826 | 0 |
| Adj Flow Rate, veh/h | 593 | 0 | 355 | | | | 0 | 1174 | 427 | 202 | 827 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 0 | 2 | | | | 0 | 2 | 1 | 1 | 5 | 0 |
| Cap, veh/h | 483 | 0 | 423 | | | | 0 | 829 | 294 | 459 | 2082 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.32 | 0.32 | 0.42 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1585 | | | | 0 | 2665 | 912 | 1795 | 3561 | 0 |
| Grp Volume(v), veh/h | 593 | 0 | 355 | | | | 0 | 802 | 799 | 202 | 827 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1585 | | | | 0 | 1777 | 1706 | 1795 | 1735 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 19.0 | | | | 0.0 | 29.0 | 29.0 | 2.4 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 19.0 | | | | 0.0 | 29.0 | 29.0 | 2.4 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.53 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 550 | 459 | 2082 | 0 |
| V/C Ratio(X) | 1.23 | 0.00 | 0.84 | | | | 0.00 | 1.40 | 1.45 | 0.44 | 0.40 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 550 | 459 | 2082 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.13 | 0.13 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 31.2 | | | | 0.0 | 30.5 | 30.5 | 20.7 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 120.2 | 0.0 | 14.0 | | | | 0.0 | 190.6 | 214.1 | 0.1 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 26.1 | 0.0 | 8.6 | | | | 0.0 | 41.6 | 43.6 | 2.4 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 153.2 | 0.0 | 45.2 | | | | 0.0 | 221.1 | 244.6 | 20.8 | 0.1 | 0.0 |
| LnGrp LOS | F | A | D | | | | A | F | F | C | A | A |
| Approach Vol, veh/h | | 948 | | | | | | 1601 | | | 1029 | |
| Approach Delay, s/veh | | 112.7 | | | | | | 232.8 | | | 4.1 | |
| Approach LOS | | F | | | | | | F | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.0 | 35.0 | | 30.0 | | 60.0 | | | | | | |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 | | | | | | |
| Max Green Setting (Gmax), s | 19.0 | 29.0 | | 24.0 | | 54.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 4.4 | 31.0 | | 26.0 | | 2.0 | | | | | | |
| Green Ext Time (p_c), s | 0.4 | 0.0 | | 0.0 | | 7.7 | | | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 135.2 |
| HCM 6th LOS | F |



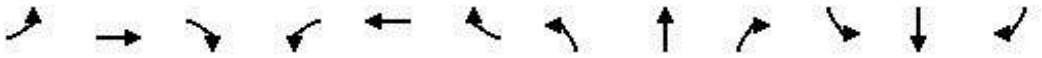
| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 270 | 367 | 503 | 1264 | 1204 |
| v/c Ratio | 0.79 | 0.93 | 0.91 | 0.54 | 0.98 |
| Control Delay | 51.6 | 56.2 | 31.6 | 5.2 | 47.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.6 | 56.2 | 31.6 | 5.2 | 47.9 |
| Queue Length 50th (ft) | 145 | 147 | 263 | 145 | ~313 |
| Queue Length 95th (ft) | #260 | #312 | m182 | m96 | #466 |
| Internal Link Dist (ft) | 742 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 359 | 410 | 554 | 2355 | 1226 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.75 | 0.90 | 0.91 | 0.54 | 0.98 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 259 | 0 | 352 | 483 | 1213 | 0 | 0 | 676 | 480 |
| Future Volume (veh/h) | 0 | 0 | 0 | 259 | 0 | 352 | 483 | 1213 | 0 | 0 | 676 | 480 |
| 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 | | | | 1811 | 1900 | 1826 | 1870 | 1870 | 0 | 0 | 1841 | 1856 |
| Adj Flow Rate, veh/h | | | | 270 | 0 | 367 | 503 | 1264 | 0 | 0 | 704 | 500 |
| Peak Hour Factor | | | | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | | | | 6 | 0 | 5 | 2 | 2 | 0 | 0 | 4 | 3 |
| Cap, veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 631 | 445 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.53 | 1.00 | 0.00 | 0.00 | 0.32 | 0.32 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1547 | 1781 | 3647 | 0 | 0 | 2051 | 1382 |
| Grp Volume(v), veh/h | | | | 270 | 0 | 367 | 503 | 1264 | 0 | 0 | 628 | 576 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1547 | 1781 | 1777 | 0 | 0 | 1749 | 1592 |
| Q Serve(g_s), s | | | | 12.5 | 0.0 | 19.0 | 18.0 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 |
| Cycle Q Clear(g_c), s | | | | 12.5 | 0.0 | 19.0 | 18.0 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.87 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 563 | 513 |
| V/C Ratio(X) | | | | 0.71 | 0.00 | 1.12 | 0.91 | 0.54 | 0.00 | 0.00 | 1.11 | 1.12 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 563 | 513 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 32.9 | 0.0 | 35.5 | 18.2 | 0.0 | 0.0 | 0.0 | 30.5 | 30.5 |
| Incr Delay (d2), s/veh | | | | 5.9 | 0.0 | 87.4 | 2.3 | 0.1 | 0.0 | 0.0 | 73.3 | 78.1 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 5.9 | 0.0 | 22.5 | 5.2 | 0.0 | 0.0 | 0.0 | 22.6 | 21.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 38.8 | 0.0 | 122.9 | 20.4 | 0.1 | 0.0 | 0.0 | 103.8 | 108.6 |
| LnGrp LOS | | | | D | A | F | C | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 637 | | | 1767 | | | 1204 | |
| Approach Delay, s/veh | | | | | 87.3 | | | 5.9 | | | 106.1 | |
| Approach LOS | | | | | F | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 30.0 | 35.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 24.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 21.0 | 20.0 | 31.0 |
| Green Ext Time (p_c), s | 14.9 | 0.0 | 0.7 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 53.7 |
| HCM 6th LOS | D |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LR | TR | L |
| Maximum Queue (ft) | 132 | 2 | 93 |
| Average Queue (ft) | 65 | 0 | 31 |
| 95th Queue (ft) | 104 | 0 | 74 |
| Link Distance (ft) | 461 | 108 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 295 |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | TR | L | T | R |
| Maximum Queue (ft) | 182 | 16 | 24 | 5 | 20 | 2 | 4 |
| Average Queue (ft) | 76 | 1 | 5 | 0 | 2 | 0 | 0 |
| 95th Queue (ft) | 137 | 6 | 18 | 3 | 11 | 2 | 3 |
| Link Distance (ft) | 619 | 314 | | 733 | | 1952 | |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | | 250 | | 290 | | 330 |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | T | UL | T | T | R |
| Maximum Queue (ft) | 250 | 730 | 15 | 20 | 80 | 2 | 13 | 80 | 2 | 2 | 30 |
| Average Queue (ft) | 249 | 678 | 1 | 3 | 26 | 0 | 1 | 34 | 0 | 0 | 4 |
| 95th Queue (ft) | 254 | 793 | 6 | 15 | 63 | 2 | 7 | 65 | 2 | 3 | 18 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | 1952 | | 1591 | 1591 | |
| Upstream Blk Time (%) | | 89 | | | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | | 290 | | | 400 |
| Storage Blk Time (%) | 80 | 55 | | | | | | | | | |
| Queuing Penalty (veh) | 33 | 155 | | | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | T | T | R | L | T | T |
| Maximum Queue (ft) | 280 | 103 | 787 | 100 | 16 | 20 | 31 | 300 | 709 | 563 |
| Average Queue (ft) | 260 | 11 | 727 | 43 | 1 | 3 | 2 | 212 | 254 | 179 |
| 95th Queue (ft) | 310 | 66 | 921 | 124 | 18 | 23 | 15 | 350 | 937 | 810 |
| Link Distance (ft) | 265 | | 750 | | 1591 | 1591 | | | 1427 | 1427 |
| Upstream Blk Time (%) | 89 | | 91 | | | | | | 2 | 1 |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | 9 | 3 |
| Storage Bay Dist (ft) | | 115 | | 100 | | | 300 | 300 | | |
| Storage Blk Time (%) | 98 | 0 | 93 | 31 | | | | 23 | 16 | |
| Queuing Penalty (veh) | 17 | 0 | 388 | 6 | | | | 82 | 54 | |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 1088 | 500 | 968 | 985 | 172 | 116 | 94 |
| Average Queue (ft) | 844 | 400 | 532 | 549 | 85 | 36 | 21 |
| 95th Queue (ft) | 1419 | 687 | 1157 | 1180 | 149 | 129 | 108 |
| Link Distance (ft) | 1075 | | 1427 | 1427 | | 607 | 607 |
| Upstream Blk Time (%) | 42 | | 0 | 0 | | | |
| Queuing Penalty (veh) | 0 | | 1 | 3 | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 39 | 3 | | | 0 | 1 | |
| Queuing Penalty (veh) | 129 | 14 | | | 0 | 1 | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 299 | 303 | 139 | 390 | 333 | 630 | 716 |
| Average Queue (ft) | 149 | 161 | 131 | 198 | 81 | 343 | 388 |
| 95th Queue (ft) | 254 | 273 | 159 | 381 | 246 | 629 | 704 |
| Link Distance (ft) | 754 | | | 607 | 607 | 1340 | 1340 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | 0 | 0 | 13 | 4 | | | |
| Queuing Penalty (veh) | 0 | 0 | 79 | 19 | | | |

## Network Summary

Network wide Queuing Penalty: 994

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 346 | 99 | 8 | 418 | 229 |
| Future Vol, veh/h | 8 | 346 | 99 | 8 | 418 | 229 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 3 | 2 | 0 | 1 | 1 |
| Mvmt Flow | 9 | 376 | 108 | 9 | 454 | 249 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1146 | 113 | 0 | 0 | 117 | 0 |
| Stage 1 | 113 | - | - | - | - | - |
| Stage 2 | 1033 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.245 | - | - | 4.115 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3285 | - | - | 2.2095 | - |
| Pot Cap-1 Maneuver | 209 | 936 | - | - | 1477 | - |
| Stage 1 | 917 | - | - | - | - | - |
| Stage 2 | 309 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 145 | 936 | - | - | 1477 | - |
| Mov Cap-2 Maneuver | 145 | - | - | - | - | - |
| Stage 1 | 917 | - | - | - | - | - |
| Stage 2 | 214 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13 | 0 | 5.5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 833 | 1477 | - |
| HCM Lane V/C Ratio | - | - | 0.462 | 0.308 | - |
| HCM Control Delay (s) | - | - | 13 | 8.5 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 2.5 | 1.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 21.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 197 | 0 | 51 | 0 | 0 | 1 | 29 | 422 | 0 | 9 | 604 | 170 |
| Future Vol, veh/h | 197 | 0 | 51 | 0 | 0 | 1 | 29 | 422 | 0 | 9 | 604 | 170 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Mvmt Flow | 210 | 0 | 54 | 0 | 0 | 1 | 31 | 449 | 0 | 10 | 643 | 181 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 950 | 1174 | 322 | 853 | 1355 | 225 | 824 | 0 | 0 | 449 | 0 | 0 |
| Stage 1 | 663 | 663 | - | 511 | 511 | - | - | - | - | - | - | - |
| Stage 2 | 287 | 511 | - | 342 | 844 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.02 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.36 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 215 | 193 | 662 | 256 | 151 | 784 | 815 | - | - | 1122 | - | - |
| Stage 1 | 417 | 462 | - | 519 | 540 | - | - | - | - | - | - | - |
| Stage 2 | 696 | 540 | - | 652 | 382 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 207 | 184 | 662 | 227 | 144 | 784 | 815 | - | - | 1122 | - | - |
| Mov Cap-2 Maneuver | ~ 207 | 184 | - | 227 | 144 | - | - | - | - | - | - | - |
| Stage 1 | 401 | 458 | - | 499 | 519 | - | - | - | - | - | - | - |
| Stage 2 | 669 | 519 | - | 593 | 379 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 129.6 | 9.6 | 0.6 | 0.1 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 815 | - | - | 241 | 784 | 1122 | - | - |
| HCM Lane V/C Ratio | 0.038 | - | - | 1.095 | 0.001 | 0.009 | - | - |
| HCM Control Delay (s) | 9.6 | - | - | 129.6 | 9.6 | 8.2 | - | - |
| HCM Lane LOS | A | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 11.5 | 0 | 0 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 189.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 308 | 1 | 71 | 2 | 0 | 28 | 47 | 608 | 2 | 86 | 5 | 719 | 331 |
| Future Vol, veh/h | 308 | 1 | 71 | 2 | 0 | 28 | 47 | 608 | 2 | 86 | 5 | 719 | 331 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 |
| Mvmt Flow | 321 | 1 | 74 | 2 | 0 | 29 | 49 | 633 | 2 | 90 | 5 | 749 | 345 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1354 | 1672 | 375 | 1296 | 2015 | 317 | 1094 | 0 | 0 | 633 | 635 | 0 | 0 |
| Stage 1 | 939 | 939 | - | 731 | 731 | - | - | - | - | - | - | - | - |
| Stage 2 | 415 | 733 | - | 565 | 1284 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.52 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 6.5 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.55 | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 109 | 97 | 628 | 122 | 59 | 685 | 645 | - | - | 559 | 958 | - | - |
| Stage 1 | ~ 286 | 345 | - | 384 | 430 | - | - | - | - | - | - | - | - |
| Stage 2 | 588 | 429 | - | 482 | 238 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 85 | 74 | 628 | 87 | 45 | 685 | 645 | - | - | 549 | 549 | - | - |
| Mov Cap-2 Maneuver | ~ 85 | 74 | - | 87 | 45 | - | - | - | - | - | - | - | - |
| Stage 1 | ~ 264 | 285 | - | 355 | 397 | - | - | - | - | - | - | - | - |
| Stage 2 | 520 | 396 | - | 350 | 197 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 1097.4 | 13 | 0.8 | 1 |
| HCM LOS | F | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 645 | - | - | 85 | 569 | 87 | 685 | 549 | - | - |
| HCM Lane V/C Ratio | 0.076 | - | - | 3.775 | 0.132 | 0.024 | 0.043 | 0.173 | - | - |
| HCM Control Delay (s) | 11 | - | - | $ 1351.1 | 12.3 | 47.4 | 10.5 | 12.9 | - | - |
| HCM Lane LOS | B | - | - | F | B | E | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 33.1 | 0.5 | 0.1 | 0.1 | 0.6 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 20 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 187 | 8 | 1012 | 30 | 236 | 1140 | 29 |
| Future Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 187 | 8 | 1012 | 30 | 236 | 1140 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 26 | 1 | 4 | 15 | 1 | 193 | 8 | 1043 | 31 | 243 | 1175 | 30 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2199 | 2751 | 588 | 2133 | 2750 | 522 | 1205 | 0 | 0 | 1074 | 0 | 0 |
| Stage 1 | 1661 | 1661 | - | 1059 | 1059 | - | - | - | - | - | - | - |
| Stage 2 | 538 | 1090 | - | 1074 | 1691 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 26 | 20 | 430 | 27 | 20 | 497 | 586 | - | - | 645 | - | - |
| Stage 1 | 103 | 156 | - | 233 | 304 | - | - | - | - | - | - | - |
| Stage 2 | 500 | 294 | - | 228 | 151 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 10 | 12 | 430 | 18 | 12 | 497 | 586 | - | - | 645 | - | - |
| Mov Cap-2 Maneuver | ~ 10 | 12 | - | 18 | 12 | - | - | - | - | - | - | - |
| Stage 1 | 102 | 97 | - | 230 | 300 | - | - | - | - | - | - | - |
| Stage 2 | 301 | 290 | - | 139 | 94 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 1304.2 | 56 | 0.1 | 2.3 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 586 | - | - | 10 | 430 | 17 | 497 | 645 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | - | 2.68 | 0.01 | 0.97 | 0.388 | 0.377 | - | - |
| HCM Control Delay (s) | 11.2 | - | - | $ 1502.8 | 13.5 | $ 514.2 | 16.8 | 13.9 | - | - |
| HCM Lane LOS | B | - | - | F | B | F | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.4 | 0 | 2.5 | 1.8 | 1.8 | - | - |

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

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 530 | 397 | 1288 | 370 | 1105 |
| v/c Ratio | 1.12 | 0.78 | 1.37 | 0.67 | 0.51 |
| Control Delay | 112.5 | 34.1 | 201.2 | 24.6 | 7.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 112.5 | 34.1 | 201.2 | 24.6 | 7.2 |
| Queue Length 50th (ft) | ~351 | 153 | ~509 | 177 | 117 |
| Queue Length 95th (ft) | #546 | #296 | #642 | m139 | m81 |
| Internal Link Dist (ft) | 1200 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 472 | 510 | 942 | 549 | 2166 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.12 | 0.78 | 1.37 | 0.67 | 0.51 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 514 | 0 | 385 | 0 | 0 | 0 | 0 | 955 | 294 | 359 | 1072 | 0 |
| Future Volume (veh/h) | 514 | 0 | 385 | 0 | 0 | 0 | 0 | 955 | 294 | 359 | 1072 | 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 | 1900 | 1900 | | | | 0 | 1870 | 1870 | 1856 | 1900 | 0 |
| Adj Flow Rate, veh/h | 530 | 0 | 397 | | | | 0 | 985 | 303 | 370 | 1105 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 0 | 0 | | | | 0 | 2 | 2 | 3 | 0 | 0 |
| Cap, veh/h | 483 | 0 | 429 | | | | 0 | 715 | 219 | 551 | 2166 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.27 | 0.27 | 0.53 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1610 | | | | 0 | 2773 | 820 | 1767 | 3705 | 0 |
| Grp Volume(v), veh/h | 530 | 0 | 397 | | | | 0 | 651 | 637 | 370 | 1105 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1610 | | | | 0 | 1777 | 1723 | 1767 | 1805 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 21.6 | | | | 0.0 | 24.0 | 24.0 | 8.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 21.6 | | | | 0.0 | 24.0 | 24.0 | 8.1 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.48 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 459 | 551 | 2166 | 0 |
| V/C Ratio(X) | 1.10 | 0.00 | 0.92 | | | | 0.00 | 1.37 | 1.39 | 0.67 | 0.51 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 459 | 551 | 2166 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 32.1 | | | | 0.0 | 33.0 | 33.0 | 16.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 70.4 | 0.0 | 25.8 | | | | 0.0 | 181.5 | 186.8 | 0.3 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 19.5 | 0.0 | 11.1 | | | | 0.0 | 33.4 | 33.1 | 3.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 103.4 | 0.0 | 57.9 | | | | 0.0 | 214.5 | 219.8 | 16.7 | 0.1 | 0.0 |
| LnGrp LOS | F | A | E | | | | A | F | F | B | A | A |
| Approach Vol, veh/h | | 927 | | | | | | 1288 | | | 1475 | |
| Approach Delay, s/veh | | 83.9 | | | | | | 217.1 | | | 4.2 | |
| Approach LOS | | F | | | | | | F | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 30.0 | 30.0 | | 30.0 | | 60.0 | | | | | | |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 | | | | | | |
| Max Green Setting (Gmax), s | 24.0 | 24.0 | | 24.0 | | 54.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 10.1 | 26.0 | | 26.0 | | 2.0 | | | | | | |
| Green Ext Time (p_c), s | 0.9 | 0.0 | | 0.0 | | 9.4 | | | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 98.6 |
| HCM 6th LOS | F |



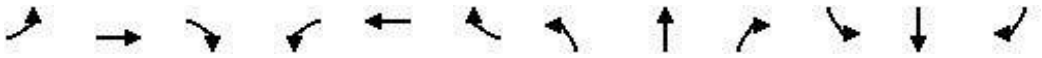
| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 344 | 358 | 387 | 1139 | 1813 |
| v/c Ratio | 0.92 | 0.85 | 0.85 | 0.49 | 1.32 |
| Control Delay | 67.6 | 44.4 | 24.0 | 1.7 | 174.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 67.6 | 44.4 | 24.0 | 1.7 | 174.1 |
| Queue Length 50th (ft) | 192 | 139 | 190 | 45 | ~687 |
| Queue Length 95th (ft) | #352 | #293 | m139 | m31 | #827 |
| Internal Link Dist (ft) | 819 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 377 | 423 | 456 | 2329 | 1375 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.91 | 0.85 | 0.85 | 0.49 | 1.32 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 334 | 0 | 347 | 375 | 1105 | 0 | 0 | 1120 | 638 |
| Future Volume (veh/h) | 0 | 0 | 0 | 334 | 0 | 347 | 375 | 1105 | 0 | 0 | 1120 | 638 |
| 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 | | | | 1885 | 1900 | 1885 | 1870 | 1870 | 0 | 0 | 1885 | 1885 |
| Adj Flow Rate, veh/h | | | | 344 | 0 | 358 | 387 | 1139 | 0 | 0 | 1155 | 658 |
| Peak Hour Factor | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | | | | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 1 |
| Cap, veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 854 | 453 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.42 | 1.00 | 0.00 | 0.00 | 0.38 | 0.38 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1598 | 1781 | 3647 | 0 | 0 | 2354 | 1200 |
| Grp Volume(v), veh/h | | | | 344 | 0 | 358 | 387 | 1139 | 0 | 0 | 898 | 915 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1598 | 1781 | 1777 | 0 | 0 | 1791 | 1669 |
| Q Serve(g_s), s | | | | 16.7 | 0.0 | 19.0 | 12.8 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Cycle Q Clear(g_c), s | | | | 16.7 | 0.0 | 19.0 | 12.8 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.72 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 631 |
| V/C Ratio(X) | | | | 0.90 | 0.00 | 1.06 | 0.85 | 0.49 | 0.00 | 0.00 | 1.33 | 1.45 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 631 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 34.6 | 0.0 | 35.5 | 22.9 | 0.0 | 0.0 | 0.0 | 28.0 | 28.0 |
| Incr Delay (d2), s/veh | | | | 23.6 | 0.0 | 66.2 | 1.5 | 0.1 | 0.0 | 0.0 | 157.3 | 211.8 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 9.6 | 0.0 | 21.3 | 4.9 | 0.0 | 0.0 | 0.0 | 42.6 | 49.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 58.2 | 0.0 | 101.7 | 24.4 | 0.1 | 0.0 | 0.0 | 185.3 | 239.8 |
| LnGrp LOS | | | | E | A | F | C | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 702 | | | 1526 | | | 1813 | |
| Approach Delay, s/veh | | | | | 80.3 | | | 6.2 | | | 212.8 | |
| Approach LOS | | | | | F | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 25.0 | 40.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 19.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 21.0 | 14.8 | 36.0 |
| Green Ext Time (p_c), s | 12.5 | 0.0 | 0.5 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 111.8 |
| HCM 6th LOS | F |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LR | TR | L |
| Maximum Queue (ft) | 176 | 4 | 86 |
| Average Queue (ft) | 65 | 0 | 28 |
| 95th Queue (ft) | 120 | 3 | 67 |
| Link Distance (ft) | 461 | 108 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 295 |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | TR | L | R |
| Maximum Queue (ft) | 230 | 14 | 26 | 4 | 23 | 4 |
| Average Queue (ft) | 96 | 1 | 6 | 0 | 2 | 0 |
| 95th Queue (ft) | 188 | 7 | 21 | 3 | 12 | 3 |
| Link Distance (ft) | 619 | 314 | | 733 | | |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | | 250 | | 290 | 330 |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | T | UL | R |
| Maximum Queue (ft) | 250 | 704 | 17 | 48 | 59 | 2 | 10 | 78 | 22 |
| Average Queue (ft) | 249 | 685 | 1 | 15 | 21 | 0 | 1 | 31 | 2 |
| 95th Queue (ft) | 252 | 738 | 9 | 36 | 49 | 2 | 7 | 63 | 13 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | 1952 | | |
| Upstream Blk Time (%) | | 98 | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | | 290 | 400 |
| Storage Blk Time (%) | 80 | 50 | | | | | | | |
| Queuing Penalty (veh) | 57 | 155 | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 243 | 68 | 682 | 100 | 36 | 153 | 172 | 28 | 205 | 24 |
| Average Queue (ft) | 123 | 5 | 308 | 68 | 6 | 29 | 34 | 1 | 84 | 1 |
| 95th Queue (ft) | 281 | 35 | 784 | 129 | 26 | 117 | 132 | 13 | 166 | 24 |
| Link Distance (ft) | 265 | | 685 | | | 1592 | 1592 | | | 1427 |
| Upstream Blk Time (%) | 16 | | 27 | | | | | | | |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | | |
| Storage Bay Dist (ft) | | 115 | | 100 | 265 | | | 300 | 300 | |
| Storage Blk Time (%) | 48 | 0 | 49 | 33 | | 0 | 0 | | | |
| Queuing Penalty (veh) | 2 | 0 | 91 | 5 | | 0 | 0 | | | |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 898 | 500 | 1449 | 1455 | 240 | 228 | 118 |
| Average Queue (ft) | 550 | 266 | 1109 | 1124 | 141 | 62 | 52 |
| 95th Queue (ft) | 1175 | 562 | 1646 | 1653 | 225 | 142 | 95 |
| Link Distance (ft) | 1206 | | 1427 | 1427 | | 603 | 603 |
| Upstream Blk Time (%) | 13 | | 7 | 9 | | | |
| Queuing Penalty (veh) | 0 | | 40 | 56 | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 15 | 1 | | | 0 | 0 | |
| Queuing Penalty (veh) | 57 | 6 | | | 2 | 0 | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 320 | 238 | 139 | 279 | 155 | 1386 | 1391 |
| Average Queue (ft) | 175 | 128 | 115 | 73 | 12 | 1360 | 1360 |
| 95th Queue (ft) | 277 | 214 | 162 | 247 | 95 | 1372 | 1376 |
| Link Distance (ft) | 832 | | | 603 | 603 | 1342 | 1342 |
| Upstream Blk Time (%) | | | | | | 72 | 85 |
| Queuing Penalty (veh) | | | | | | 0 | 0 |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | 0 | | 5 | 1 | | | |
| Queuing Penalty (veh) | 0 | | 27 | 5 | | | |

## Network Summary

Network wide Queuing Penalty: 505

# MOVEMENT SUMMARY

## Site: 101 [5th St @ Old Lynchburg Rd 2030 Total - AM (Site Folder: General)]

Southwood Phase 2
2030 Future Conditions
Site Category: (None)
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Old Lynchburg Road | | | | | | | | | | | | | | |
| 3 | L2 | 82 | 0.0 | 83 | 0.0 | 0.399 | 8.2 | LOS A | 2.7 | 70.8 | 0.67 | 0.55 | 0.67 | 33.0 |
| 8 | T1 | 696 | 6.0 | 703 | 6.0 | 0.399 | 8.0 | LOS A | 2.8 | 74.2 | 0.67 | 0.54 | 0.67 | 33.4 |
| 18 | R2 | 1 | 3.0 | 1 | 3.0 | 0.399 | 7.6 | LOS A | 2.8 | 74.2 | 0.66 | 0.53 | 0.66 | 32.8 |
| Approach | | 779 | 5.4 | 787 | 5.4 | 0.399 | 8.0 | LOS A | 2.8 | 74.2 | 0.67 | 0.54 | 0.67 | 33.3 |
| East: County Complex | | | | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 1 | 0.0 | 0.012 | 7.2 | LOS A | 0.0 | 1.2 | 0.67 | 0.54 | 0.67 | 33.7 |
| 6 | T1 | 1 | 0.0 | 1 | 0.0 | 0.012 | 7.2 | LOS A | 0.0 | 1.2 | 0.67 | 0.54 | 0.67 | 33.6 |
| 16 | R2 | 4 | 0.0 | 4 | 0.0 | 0.012 | 7.2 | LOS A | 0.0 | 1.2 | 0.67 | 0.54 | 0.67 | 32.6 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.012 | 7.2 | LOS A | 0.0 | 1.2 | 0.67 | 0.54 | 0.67 | 32.9 |
| North: 5th Street | | | | | | | | | | | | | | |
| 7u | U | 57 | 0.0 | 58 | 0.0 | 0.392 | 6.9 | LOS A | 2.6 | 66.6 | 0.32 | 0.16 | 0.32 | 34.3 |
| 7 | L2 | 45 | 0.0 | 45 | 0.0 | 0.392 | 6.9 | LOS A | 2.6 | 66.6 | 0.32 | 0.16 | 0.32 | 33.5 |
| 4 | T1 | 352 | 6.0 | 356 | 6.0 | 0.392 | 7.0 | LOS A | 2.6 | 66.6 | 0.32 | 0.16 | 0.32 | 33.3 |
| 14 | R2 | 243 | 5.0 | 245 | 5.0 | 0.245 | 6.0 | LOS A | 1.3 | 34.3 | 0.28 | 0.15 | 0.28 | 33.3 |
| Approach | | 697 | 4.8 | 704 | 4.8 | 0.392 | 6.6 | LOS A | 2.6 | 66.6 | 0.30 | 0.16 | 0.30 | 33.4 |
| West: Old Lynchburg Road | | | | | | | | | | | | | | |
| 5 | L2 | 283 | 2.0 | 286 | 2.0 | 0.398 | 9.2 | LOS A | 2.6 | 66.0 | 0.70 | 0.62 | 0.70 | 31.0 |
| 2 | T1 | 2 | 0.0 | 2 | 0.0 | 0.398 | 9.0 | LOS A | 2.6 | 66.0 | 0.70 | 0.62 | 0.70 | 30.9 |
| 12 | R2 | 39 | 14.0 | 39 | 14.0 | 0.398 | 9.9 | LOS A | 2.6 | 66.0 | 0.70 | 0.62 | 0.70 | 29.9 |
| Approach | | 324 | 3.4 | 327 | 3.4 | 0.398 | 9.2 | LOS A | 2.6 | 66.0 | 0.70 | 0.62 | 0.70 | 30.8 |
| All Vehicles | | 1806 | 4.8 | 1824 | 4.8 | 0.399 | 7.7 | LOS A | 2.8 | 74.2 | 0.53 | 0.40 | 0.53 | 32.9 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [5th St @ Old Lynchburg Rd 2030 Total - PM (Site Folder: General)]

Southwood Phase 2
2030 Future Conditions
Site Category: (None)
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Old Lynchburg Road | | | | | | | | | | | | | | |
| 3 | L2 | 47 | 0.0 | 49 | 0.0 | 0.345 | 7.7 | LOS A | 2.4 | 60.4 | 0.69 | 0.56 | 0.69 | 33.6 |
| 8 | T1 | 608 | 1.0 | 633 | 1.0 | 0.345 | 7.2 | LOS A | 2.5 | 63.4 | 0.68 | 0.54 | 0.68 | 33.9 |
| 18 | R2 | 2 | 0.0 | 2 | 0.0 | 0.345 | 6.9 | LOS A | 2.5 | 63.4 | 0.68 | 0.53 | 0.68 | 33.3 |
| Approach | | 657 | 0.9 | 684 | 0.9 | 0.345 | 7.3 | LOS A | 2.5 | 63.4 | 0.68 | 0.55 | 0.68 | 33.9 |
| East: County Complex | | | | | | | | | | | | | | |
| 1 | L2 | 2 | 0.0 | 2 | 0.0 | 0.060 | 7.5 | LOS A | 0.3 | 6.3 | 0.66 | 0.62 | 0.66 | 33.8 |
| 6 | T1 | 1 | 0.0 | 1 | 0.0 | 0.060 | 7.5 | LOS A | 0.3 | 6.3 | 0.66 | 0.62 | 0.66 | 33.7 |
| 16 | R2 | 28 | 0.0 | 29 | 0.0 | 0.060 | 7.5 | LOS A | 0.3 | 6.3 | 0.66 | 0.62 | 0.66 | 32.7 |
| Approach | | 31 | 0.0 | 32 | 0.0 | 0.060 | 7.5 | LOS A | 0.3 | 6.3 | 0.66 | 0.62 | 0.66 | 32.8 |
| North: 5th Street | | | | | | | | | | | | | | |
| 7u | U | 86 | 5.0 | 90 | 5.0 | 0.670 | 11.9 | LOS B | 7.3 | 183.8 | 0.38 | 0.17 | 0.38 | 32.2 |
| 7 | L2 | 5 | 0.0 | 5 | 0.0 | 0.670 | 11.8 | LOS B | 7.3 | 183.8 | 0.38 | 0.17 | 0.38 | 31.7 |
| 4 | T1 | 719 | 0.0 | 749 | 0.0 | 0.670 | 11.8 | LOS B | 7.3 | 183.8 | 0.38 | 0.17 | 0.38 | 31.6 |
| 14 | R2 | 331 | 0.0 | 345 | 0.0 | 0.347 | 7.3 | LOS A | 2.1 | 53.1 | 0.25 | 0.11 | 0.25 | 32.8 |
| Approach | | 1141 | 0.4 | 1189 | 0.4 | 0.670 | 10.5 | LOS B | 7.3 | 183.8 | 0.35 | 0.15 | 0.35 | 32.0 |
| West: Old Lynchburg Road | | | | | | | | | | | | | | |
| 5 | L2 | 308 | 1.0 | 321 | 1.0 | 0.670 | 21.0 | LOS C | 7.7 | 194.6 | 0.98 | 1.20 | 1.58 | 26.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.670 | 20.9 | LOS C | 7.7 | 194.6 | 0.98 | 1.20 | 1.58 | 26.8 |
| 12 | R2 | 71 | 0.0 | 74 | 0.0 | 0.670 | 20.9 | LOS C | 7.7 | 194.6 | 0.98 | 1.20 | 1.58 | 26.3 |
| Approach | | 380 | 0.8 | 396 | 0.8 | 0.670 | 21.0 | LOS C | 7.7 | 194.6 | 0.98 | 1.20 | 1.58 | 26.8 |
| All Vehicles | | 2209 | 0.6 | 2301 | 0.6 | 0.670 | 11.3 | LOS B | 7.7 | 194.6 | 0.56 | 0.46 | 0.66 | 31.4 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# Appendix H
# Capacity Analysis Worksheets
# For 2036 Total Background Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 207 | 210 | 4 | 122 | 97 |
| Future Vol, veh/h | 4 | 207 | 210 | 4 | 122 | 97 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 7 | 4 | 0 | 13 | 8 |
| Mvmt Flow | 4 | 225 | 228 | 4 | 133 | 105 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 549 | 230 | 0 | 0 | 232 | 0 |
| Stage 1 | 230 | - | - | - | - | - |
| Stage 2 | 319 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.305 | - | - | 4.295 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3665 | - | - | 2.3235 | - |
| Pot Cap-1 Maneuver | 485 | 794 | - | - | 1265 | - |
| Stage 1 | 813 | - | - | - | - | - |
| Stage 2 | 716 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 434 | 794 | - | - | 1265 | - |
| Mov Cap-2 Maneuver | 434 | - | - | - | - | - |
| Stage 1 | 813 | - | - | - | - | - |
| Stage 2 | 641 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.5 | 0 | 4.6 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 782 | 1265 | - |
| HCM Lane V/C Ratio | - | - | 0.293 | 0.105 | - |
| HCM Control Delay (s) | - | - | 11.5 | 8.2 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 223 | 0 | 12 | 0 | 0 | 1 | 18 | 414 | 0 | 6 | 212 | 87 |
| Future Vol, veh/h | 223 | 0 | 12 | 0 | 0 | 1 | 18 | 414 | 0 | 6 | 212 | 87 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 6 |
| Mvmt Flow | 237 | 0 | 13 | 0 | 0 | 1 | 19 | 440 | 0 | 6 | 226 | 93 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 496 | 716 | 113 | 603 | 809 | 220 | 319 | 0 | 0 | 440 | 0 | 0 |
| Stage 1 | 238 | 238 | - | 478 | 478 | - | - | - | - | - | - | - |
| Stage 2 | 258 | 478 | - | 125 | 331 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.58 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.54 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 452 | 358 | 925 | 387 | 317 | 790 | 1252 | - | - | 1131 | - | - |
| Stage 1 | 738 | 712 | - | 543 | 559 | - | - | - | - | - | - | - |
| Stage 2 | 718 | 559 | - | 872 | 649 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 444 | 351 | 925 | 376 | 311 | 790 | 1252 | - | - | 1131 | - | - |
| Mov Cap-2 Maneuver | 444 | 351 | - | 376 | 311 | - | - | - | - | - | - | - |
| Stage 1 | 727 | 708 | - | 535 | 551 | - | - | - | - | - | - | - |
| Stage 2 | 706 | 551 | - | 855 | 646 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 22.1 | 9.6 | 0.3 | 0.2 |
| HCM LOS | C | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1252 | - | - | 456 | 790 | 1131 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | - | 0.548 | 0.001 | 0.006 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 22.1 | 9.6 | 8.2 | - | - |
| HCM Lane LOS | A | - | - | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.2 | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 58.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 283 | 2 | 29 | 0 | 1 | 4 | 65 | 614 | 1 | 57 | 45 | 289 | 243 |
| Future Vol, veh/h | 283 | 2 | 29 | 0 | 1 | 4 | 65 | 614 | 1 | 57 | 45 | 289 | 243 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 0 | 14 | 0 | 0 | 0 | 6 | 3 | 0 | 0 | 0 | 6 | 5 |
| Mvmt Flow | 286 | 2 | 29 | 0 | 1 | 4 | 66 | 620 | 1 | 58 | 45 | 292 | 245 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 941 | 1251 | 146 | 1105 | 1495 | 310 | 537 | 0 | 0 | 620 | 621 | 0 | 0 |
| Stage 1 | 498 | 498 | - | 752 | 752 | - | - | - | - | - | - | - | - |
| Stage 2 | 443 | 753 | - | 353 | 743 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.18 | 7.5 | 6.5 | 6.9 | 4.22 | - | - | 6.4 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.44 | 3.5 | 4 | 3.3 | 2.26 | - | - | 2.5 | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 218 | 174 | 838 | 168 | 124 | 692 | 1000 | - | - | 589 | 969 | - | - |
| Stage 1 | 523 | 548 | - | 373 | 421 | - | - | - | - | - | - | - | - |
| Stage 2 | 564 | 420 | - | 642 | 425 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 182 | 139 | 838 | 136 | 99 | 692 | 1000 | - | - | 710 | 710 | - | - |
| Mov Cap-2 Maneuver | ~ 182 | 139 | - | 136 | 99 | - | - | - | - | - | - | - | - |
| Stage 1 | 488 | 469 | - | 348 | 393 | - | - | - | - | - | - | - | - |
| Stage 2 | 522 | 392 | - | 527 | 363 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 296.4 | 16.5 | 0.8 | 1.8 |
| HCM LOS | F | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1000 | - | - | 182 | 633 | 99 | 692 | 710 | - | - |
| HCM Lane V/C Ratio | 0.066 | - | - | 1.571 | 0.049 | 0.01 | 0.006 | 0.145 | - | - |
| HCM Control Delay (s) | 8.9 | - | - | $ 327.7 | 11 | 41.7 | 10.2 | 10.9 | - | - |
| HCM Lane LOS | A | - | - | F | B | E | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 18.7 | 0.2 | 0 | 0 | 0.5 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 101.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 386 | 0 | 975 | 34 | 325 | 660 | 10 |
| Future Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 386 | 0 | 975 | 34 | 325 | 660 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 33 | 1 | 20 | 18 | 1 | 420 | 0 | 1060 | 37 | 353 | 717 | 11 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1954 | 2520 | 359 | 2125 | 2494 | 530 | 728 | 0 | 0 | 1097 | 0 | 0 |
| Stage 1 | 1423 | 1423 | - | 1060 | 1060 | - | - | - | - | - | - | - |
| Stage 2 | 531 | 1097 | - | 1065 | 1434 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 39 | 28 | 612 | 27 | 29 | 491 | 885 | - | - | 632 | - | - |
| Stage 1 | 145 | 204 | - | 232 | 303 | - | - | - | - | - | - | - |
| Stage 2 | 505 | 291 | - | 231 | 201 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 3 | 12 | 612 | ~ 14 | 13 | 491 | 885 | - | - | 632 | - | - |
| Mov Cap-2 Maneuver | ~ 3 | 12 | - | ~ 14 | 13 | - | - | - | - | - | - | - |
| Stage 1 | 145 | 90 | - | 232 | 303 | - | - | - | - | - | - | - |
| Stage 2 | 73 | 291 | - | 98 | 89 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 4355.7 | 74.1 | 0 | 5.8 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 885 | - | - | 3 | 612 | 14 | 491 | 632 | - | - |
| HCM Lane V/C Ratio | - | - | - | 11.232 | 0.032 | 1.398 | 0.855 | 0.559 | - | - |
| HCM Control Delay (s) | 0 | - | - | $ 6878.4 | 11.1 | $ 763.5 | 42 | 17.7 | - | - |
| HCM Lane LOS | A | - | - | F | B | F | E | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 6 | 0.1 | 3.1 | 8.8 | 3.5 | - | - |

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

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 629 | 349 | 1519 | 214 | 786 |
| v/c Ratio | 1.32 | 0.62 | 1.33 | 0.46 | 0.38 |
| Control Delay | 188.9 | 17.7 | 184.0 | 18.5 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 188.9 | 17.7 | 184.0 | 18.5 | 4.9 |
| Queue Length 50th (ft) | ~467 | 71 | ~588 | 63 | 83 |
| Queue Length 95th (ft) | #673 | 165 | #725 | m83 | m77 |
| Internal Link Dist (ft) | 1069 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 476 | 565 | 1139 | 461 | 2062 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.32 | 0.62 | 1.33 | 0.46 | 0.38 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 579 | 0 | 321 | 0 | 0 | 0 | 0 | 1021 | 376 | 197 | 723 | 0 |
| Future Volume (veh/h) | 579 | 0 | 321 | 0 | 0 | 0 | 0 | 1021 | 376 | 197 | 723 | 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 | 1885 | 1900 | 1870 | | | | 0 | 1870 | 1885 | 1885 | 1826 | 0 |
| Adj Flow Rate, veh/h | 629 | 0 | 349 | | | | 0 | 1110 | 409 | 214 | 786 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 0 | 2 | | | | 0 | 2 | 1 | 1 | 5 | 0 |
| Cap, veh/h | 483 | 0 | 423 | | | | 0 | 824 | 298 | 459 | 2082 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.32 | 0.32 | 0.42 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1585 | | | | 0 | 2651 | 924 | 1795 | 3561 | 0 |
| Grp Volume(v), veh/h | 629 | 0 | 349 | | | | 0 | 765 | 754 | 214 | 786 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1585 | | | | 0 | 1777 | 1704 | 1795 | 1735 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 18.6 | | | | 0.0 | 29.0 | 29.0 | 2.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 18.6 | | | | 0.0 | 29.0 | 29.0 | 2.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.54 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 549 | 459 | 2082 | 0 |
| V/C Ratio(X) | 1.30 | 0.00 | 0.83 | | | | 0.00 | 1.34 | 1.37 | 0.47 | 0.38 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 549 | 459 | 2082 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 31.0 | | | | 0.0 | 30.5 | 30.5 | 20.8 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 151.1 | 0.0 | 12.6 | | | | 0.0 | 162.6 | 179.6 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 30.3 | 0.0 | 8.3 | | | | 0.0 | 37.1 | 38.2 | 2.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 184.1 | 0.0 | 43.7 | | | | 0.0 | 193.1 | 210.1 | 20.9 | 0.0 | 0.0 |
| LnGrp LOS | F | A | D | | | | A | F | F | C | A | A |
| Approach Vol, veh/h | | 978 | | | | | | 1519 | | | 1000 | |
| Approach Delay, s/veh | | 134.0 | | | | | | 201.5 | | | 4.5 | |
| Approach LOS | | F | | | | | | F | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.0 | 35.0 | | 30.0 | | 60.0 | | | | | | |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 | | | | | | |
| Max Green Setting (Gmax), s | 19.0 | 29.0 | | 24.0 | | 54.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 4.9 | 31.0 | | 26.0 | | 2.0 | | | | | | |
| Green Ext Time (p_c), s | 0.5 | 0.0 | | 0.0 | | 7.2 | | | | | | |

| Intersection Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM 6th Ctrl Delay | | | 126.3 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 259 | 389 | 491 | 1254 | 1218 |
| v/c Ratio | 0.73 | 0.96 | 0.88 | 0.54 | 1.01 |
| Control Delay | 46.7 | 62.2 | 31.4 | 6.0 | 53.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.7 | 62.2 | 31.4 | 6.0 | 53.2 |
| Queue Length 50th (ft) | 138 | 163 | 255 | 155 | ~317 |
| Queue Length 95th (ft) | #243 | #344 | m179 | m109 | #468 |
| Internal Link Dist (ft) | 742 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 359 | 410 | 555 | 2329 | 1211 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.72 | 0.95 | 0.88 | 0.54 | 1.01 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 249 | 0 | 373 | 471 | 1204 | 0 | 0 | 660 | 509 |
| Future Volume (veh/h) | 0 | 0 | 0 | 249 | 0 | 373 | 471 | 1204 | 0 | 0 | 660 | 509 |
| 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 | | | | 1811 | 1900 | 1826 | 1870 | 1870 | 0 | 0 | 1841 | 1856 |
| Adj Flow Rate, veh/h | | | | 259 | 0 | 389 | 491 | 1254 | 0 | 0 | 688 | 530 |
| Peak Hour Factor | | | | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | | | | 6 | 0 | 5 | 2 | 2 | 0 | 0 | 4 | 3 |
| Cap, veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 608 | 465 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.53 | 1.00 | 0.00 | 0.00 | 0.32 | 0.32 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1547 | 1781 | 3647 | 0 | 0 | 1980 | 1442 |
| Grp Volume(v), veh/h | | | | 259 | 0 | 389 | 491 | 1254 | 0 | 0 | 637 | 581 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1547 | 1781 | 1777 | 0 | 0 | 1749 | 1581 |
| Q Serve(g_s), s | | | | 11.9 | 0.0 | 19.0 | 16.8 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 |
| Cycle Q Clear(g_c), s | | | | 11.9 | 0.0 | 19.0 | 16.8 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.91 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 563 | 509 |
| V/C Ratio(X) | | | | 0.68 | 0.00 | 1.19 | 0.88 | 0.54 | 0.00 | 0.00 | 1.13 | 1.14 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 563 | 509 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 32.7 | 0.0 | 35.5 | 18.0 | 0.0 | 0.0 | 0.0 | 30.5 | 30.5 |
| Incr Delay (d2), s/veh | | | | 4.8 | 0.0 | 112.2 | 1.8 | 0.1 | 0.0 | 0.0 | 79.2 | 84.7 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 5.5 | 0.0 | 24.8 | 5.0 | 0.0 | 0.0 | 0.0 | 23.5 | 22.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 37.4 | 0.0 | 147.7 | 19.7 | 0.1 | 0.0 | 0.0 | 109.7 | 115.2 |
| LnGrp LOS | | | | D | A | F | B | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 648 | | | 1745 | | | 1218 | |
| Approach Delay, s/veh | | | | | 103.6 | | | 5.6 | | | 112.3 | |
| Approach LOS | | | | | F | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 30.0 | 35.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 24.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 21.0 | 18.8 | 31.0 |
| Green Ext Time (p_c), s | 14.7 | 0.0 | 0.8 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 59.2 |
| HCM 6th LOS | E |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | L |
| Maximum Queue (ft) | 88 | 73 |
| Average Queue (ft) | 46 | 21 |
| 95th Queue (ft) | 75 | 57 |
| Link Distance (ft) | 461 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 295 |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | L | R |
| Maximum Queue (ft) | 179 | 14 | 20 | 20 | 2 |
| Average Queue (ft) | 72 | 0 | 3 | 1 | 0 |
| 95th Queue (ft) | 136 | 6 | 13 | 10 | 2 |
| Link Distance (ft) | 619 | 314 | | | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | | | 250 | 290 | 330 |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | UL | T | R |
| Maximum Queue (ft) | 250 | 683 | 12 | 20 | 68 | 4 | 67 | 4 | 25 |
| Average Queue (ft) | 228 | 505 | 0 | 3 | 19 | 0 | 33 | 0 | 2 |
| 95th Queue (ft) | 309 | 961 | 6 | 14 | 52 | 3 | 60 | 2 | 12 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | | 1591 | |
| Upstream Blk Time (%) | | 57 | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | 290 | | 400 |
| Storage Blk Time (%) | 62 | 38 | | | | | | | |
| Queuing Penalty (veh) | 19 | 109 | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | T | T | R | L | T | T |
| Maximum Queue (ft) | 289 | 115 | 792 | 100 | 12 | 36 | 23 | 299 | 486 | 356 |
| Average Queue (ft) | 222 | 20 | 736 | 64 | 1 | 4 | 2 | 183 | 153 | 103 |
| 95th Queue (ft) | 348 | 88 | 883 | 142 | 13 | 23 | 12 | 329 | 702 | 610 |
| Link Distance (ft) | 265 | | 750 | | 1591 | 1591 | | | 1427 | 1427 |
| Upstream Blk Time (%) | 65 | | 85 | | | | | | 2 | 1 |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | 9 | 5 |
| Storage Bay Dist (ft) | | 115 | | 100 | | | 300 | 300 | | |
| Storage Blk Time (%) | 82 | 0 | 91 | 49 | | | | 15 | 10 | 0 |
| Queuing Penalty (veh) | 15 | 0 | 351 | 9 | | | | 50 | 34 | 0 |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 1127 | 500 | 998 | 1027 | 192 | 96 | 94 |
| Average Queue (ft) | 1008 | 464 | 631 | 653 | 91 | 33 | 18 |
| 95th Queue (ft) | 1351 | 649 | 1187 | 1210 | 162 | 102 | 87 |
| Link Distance (ft) | 1075 | | 1427 | 1427 | | 607 | 607 |
| Upstream Blk Time (%) | 62 | | 0 | 0 | | | |
| Queuing Penalty (veh) | 0 | | 1 | 2 | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 52 | 4 | | | 0 | 0 | |
| Queuing Penalty (veh) | 166 | 21 | | | 0 | 1 | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 286 | 339 | 140 | 398 | 336 | 597 | 670 |
| Average Queue (ft) | 142 | 176 | 134 | 201 | 81 | 363 | 419 |
| 95th Queue (ft) | 234 | 289 | 153 | 387 | 255 | 627 | 720 |
| Link Distance (ft) | 754 | | | 607 | 607 | 1340 | 1340 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | | | 13 | 4 | | | |
| Queuing Penalty (veh) | | | 80 | 18 | | | |

## Network Summary

Network wide Queuing Penalty: 890

| Intersection | |
|---|---|
| Int Delay, s/veh | 5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 191 | 104 | 6 | 232 | 242 |
| Future Vol, veh/h | 5 | 191 | 104 | 6 | 232 | 242 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 3 | 2 | 0 | 1 | 1 |
| Mvmt Flow | 5 | 208 | 113 | 7 | 252 | 263 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 753 | 117 | 0 | 0 | 120 | 0 |
| Stage 1 | 117 | - | - | - | - | - |
| Stage 2 | 636 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.245 | - | - | 4.115 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3285 | - | - | 2.2095 | - |
| Pot Cap-1 Maneuver | 365 | 932 | - | - | 1473 | - |
| Stage 1 | 913 | - | - | - | - | - |
| Stage 2 | 495 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 303 | 932 | - | - | 1473 | - |
| Mov Cap-2 Maneuver | 303 | - | - | - | - | - |
| Stage 1 | 913 | - | - | - | - | - |
| Stage 2 | 410 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.4 | 0 | 3.9 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 885 | 1473 | - |
| HCM Lane V/C Ratio | - | - | 0.241 | 0.171 | - |
| HCM Control Delay (s) | - | - | 10.4 | 7.9 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 0.6 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 197 | 0 | 31 | 0 | 0 | 1 | 14 | 291 | 0 | 9 | 456 | 170 |
| Future Vol, veh/h | 197 | 0 | 31 | 0 | 0 | 1 | 14 | 291 | 0 | 9 | 456 | 170 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Mvmt Flow | 210 | 0 | 33 | 0 | 0 | 1 | 15 | 310 | 0 | 10 | 485 | 181 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 690 | 845 | 243 | 603 | 1026 | 155 | 666 | 0 | 0 | 310 | 0 | 0 |
| Stage 1 | 505 | 505 | - | 340 | 340 | - | - | - | - | - | - | - |
| Stage 2 | 185 | 340 | - | 263 | 686 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.02 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.36 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 331 | 302 | 746 | 387 | 237 | 869 | 933 | - | - | 1262 | - | - |
| Stage 1 | 518 | 544 | - | 654 | 643 | - | - | - | - | - | - | - |
| Stage 2 | 799 | 643 | - | 725 | 451 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 325 | 295 | 746 | 363 | 231 | 869 | 933 | - | - | 1262 | - | - |
| Mov Cap-2 Maneuver | 325 | 295 | - | 363 | 231 | - | - | - | - | - | - | - |
| Stage 1 | 510 | 540 | - | 644 | 633 | - | - | - | - | - | - | - |
| Stage 2 | 785 | 633 | - | 687 | 447 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 35.1 | 9.1 | 0.4 | 0.1 |
| HCM LOS | E | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 933 | - | - | 352 | 869 | 1262 | - | - |
| HCM Lane V/C Ratio | 0.016 | - | - | 0.689 | 0.001 | 0.008 | - | - |
| HCM Control Delay (s) | 8.9 | - | - | 35.1 | 9.1 | 7.9 | - | - |
| HCM Lane LOS | A | - | - | E | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.9 | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 123.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 308 | 1 | 50 | 2 | 0 | 28 | 32 | 506 | 2 | 86 | 5 | 614 | 331 |
| Future Vol, veh/h | 308 | 1 | 50 | 2 | 0 | 28 | 32 | 506 | 2 | 86 | 5 | 614 | 331 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 |
| Mvmt Flow | 321 | 1 | 52 | 2 | 0 | 29 | 33 | 527 | 2 | 90 | 5 | 640 | 345 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1160 | 1425 | 320 | 1104 | 1768 | 264 | 985 | 0 | 0 | 527 | 529 | 0 | 0 |
| Stage 1 | 830 | 830 | - | 593 | 593 | - | - | - | - | - | - | - | - |
| Stage 2 | 330 | 595 | - | 511 | 1175 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.52 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 6.5 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.55 | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 152 | 137 | 682 | 168 | 84 | 741 | 709 | - | - | 653 | 1048 | - | - |
| Stage 1 | 333 | 388 | - | 464 | 497 | - | - | - | - | - | - | - | - |
| Stage 2 | 660 | 496 | - | 519 | 268 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 125 | 111 | 682 | 132 | 68 | 741 | 709 | - | - | 642 | 642 | - | - |
| Mov Cap-2 Maneuver | ~ 125 | 111 | - | 132 | 68 | - | - | - | - | - | - | - | - |
| Stage 1 | ~ 317 | 331 | - | 442 | 474 | - | - | - | - | - | - | - | - |
| Stage 2 | 605 | 473 | - | 407 | 228 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 673.6 | 11.6 | 0.6 | 1 |
| HCM LOS | F | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 709 | - | - | 125 | 620 | 132 | 741 | 642 | - | - |
| HCM Lane V/C Ratio | 0.047 | - | - | 2.567 | 0.086 | 0.016 | 0.039 | 0.148 | - | - |
| HCM Control Delay (s) | 10.3 | - | - | $ 783.2 | 11.4 | 32.7 | 10.1 | 11.6 | - | - |
| HCM Lane LOS | B | - | - | F | B | D | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 28.7 | 0.3 | 0 | 0.1 | 0.5 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 10.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 163 | 8 | 926 | 30 | 199 | 1040 | 29 |
| Future Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 163 | 8 | 926 | 30 | 199 | 1040 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 26 | 1 | 4 | 15 | 1 | 168 | 8 | 955 | 31 | 205 | 1072 | 30 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1976 | 2484 | 536 | 1918 | 2483 | 478 | 1102 | 0 | 0 | 986 | 0 | 0 |
| Stage 1 | 1482 | 1482 | - | 971 | 971 | - | - | - | - | - | - | - |
| Stage 2 | 494 | 1002 | - | 947 | 1512 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 38 | 30 | 466 | 39 | 30 | 531 | 641 | - | - | 696 | - | - |
| Stage 1 | 134 | 191 | - | 264 | 334 | - | - | - | - | - | - | - |
| Stage 2 | 531 | 323 | - | 273 | 184 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 19 | 21 | 466 | 29 | 21 | 531 | 641 | - | - | 696 | - | - |
| Mov Cap-2 Maneuver | ~ 19 | 21 | - | 29 | 21 | - | - | - | - | - | - | - |
| Stage 1 | 132 | 135 | - | 261 | 330 | - | - | - | - | - | - | - |
| Stage 2 | 357 | 319 | - | 189 | 130 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 561.4 | 35.7 | 0.1 | 1.9 |
| HCM LOS | F | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 641 | - | - | 19 | 466 | 28 | 531 | 696 | - | - |
| HCM Lane V/C Ratio | 0.013 | - | - | 1.411 | 0.009 | 0.589 | 0.316 | 0.295 | - | - |
| HCM Control Delay (s) | 10.7 | - | - | $ 645.8 | 12.8 | 247.6 | 14.9 | 12.3 | - | - |
| HCM Lane LOS | B | - | - | F | B | F | B | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.7 | 0 | 1.9 | 1.3 | 1.2 | - | - |

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

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 562 | 368 | 1186 | 392 | 1010 |
| v/c Ratio | 1.19 | 0.71 | 1.26 | 0.71 | 0.47 |
| Control Delay | 137.1 | 28.8 | 155.6 | 25.6 | 6.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 137.1 | 28.8 | 155.6 | 25.6 | 6.7 |
| Queue Length 50th (ft) | ~390 | 129 | ~443 | 190 | 94 |
| Queue Length 95th (ft) | #588 | 232 | #574 | m159 | m74 |
| Internal Link Dist (ft) | 1200 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 472 | 517 | 942 | 549 | 2166 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.19 | 0.71 | 1.26 | 0.71 | 0.47 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 545 | 0 | 357 | 0 | 0 | 0 | 0 | 881 | 270 | 380 | 980 | 0 |
| Future Volume (veh/h) | 545 | 0 | 357 | 0 | 0 | 0 | 0 | 881 | 270 | 380 | 980 | 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 | 1900 | 1900 | | | | 0 | 1870 | 1870 | 1856 | 1900 | 0 |
| Adj Flow Rate, veh/h | 562 | 0 | 368 | | | | 0 | 908 | 278 | 392 | 1010 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 0 | 0 | | | | 0 | 2 | 2 | 3 | 0 | 0 |
| Cap, veh/h | 483 | 0 | 429 | | | | 0 | 715 | 218 | 551 | 2166 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.27 | 0.27 | 0.53 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1610 | | | | 0 | 2775 | 819 | 1767 | 3705 | 0 |
| Grp Volume(v), veh/h | 562 | 0 | 368 | | | | 0 | 601 | 585 | 392 | 1010 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1610 | | | | 0 | 1777 | 1723 | 1767 | 1805 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 19.6 | | | | 0.0 | 24.0 | 24.0 | 9.4 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 19.6 | | | | 0.0 | 24.0 | 24.0 | 9.4 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.48 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 459 | 551 | 2166 | 0 |
| V/C Ratio(X) | 1.16 | 0.00 | 0.86 | | | | 0.00 | 1.27 | 1.27 | 0.71 | 0.47 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 459 | 551 | 2166 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 31.4 | | | | 0.0 | 33.0 | 33.0 | 16.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 94.7 | 0.0 | 15.7 | | | | 0.0 | 136.7 | 139.1 | 0.4 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 22.7 | 0.0 | 9.1 | | | | 0.0 | 27.5 | 27.0 | 3.8 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 127.7 | 0.0 | 47.0 | | | | 0.0 | 169.7 | 172.1 | 17.0 | 0.1 | 0.0 |
| LnGrp LOS | F | A | D | | | | A | F | F | B | A | A |
| Approach Vol, veh/h | | 930 | | | | | | 1186 | | | 1402 | |
| Approach Delay, s/veh | | 95.8 | | | | | | 170.9 | | | 4.8 | |
| Approach LOS | | F | | | | | | F | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 30.0 | 30.0 | | 30.0 | | 60.0 | | | | | | |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 | | | | | | |
| Max Green Setting (Gmax), s | 24.0 | 24.0 | | 24.0 | | 54.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 11.4 | 26.0 | | 26.0 | | 2.0 | | | | | | |
| Green Ext Time (p_c), s | 1.0 | 0.0 | | 0.0 | | 8.2 | | | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 84.8 |
| HCM 6th LOS | F |



| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 312 | 378 | 367 | 1115 | 1812 |
| v/c Ratio | 0.86 | 0.91 | 0.80 | 0.47 | 1.29 |
| Control Delay | 59.0 | 52.5 | 23.5 | 1.8 | 159.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 59.0 | 52.5 | 23.5 | 1.8 | 159.2 |
| Queue Length 50th (ft) | 171 | 149 | 178 | 50 | ~675 |
| Queue Length 95th (ft) | #308 | #314 | m136 | m35 | #816 |
| Internal Link Dist (ft) | 819 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 377 | 428 | 456 | 2352 | 1409 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.83 | 0.88 | 0.80 | 0.47 | 1.29 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 303 | 0 | 367 | 356 | 1082 | 0 | 0 | 1081 | 677 |
| Future Volume (veh/h) | 0 | 0 | 0 | 303 | 0 | 367 | 356 | 1082 | 0 | 0 | 1081 | 677 |
| 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 | | | | 1885 | 1900 | 1885 | 1870 | 1870 | 0 | 0 | 1885 | 1885 |
| Adj Flow Rate, veh/h | | | | 312 | 0 | 378 | 367 | 1115 | 0 | 0 | 1114 | 698 |
| Peak Hour Factor | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | | | | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 1 |
| Cap, veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 824 | 478 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.42 | 1.00 | 0.00 | 0.00 | 0.38 | 0.38 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1598 | 1781 | 3647 | 0 | 0 | 2276 | 1266 |
| Grp Volume(v), veh/h | | | | 312 | 0 | 378 | 367 | 1115 | 0 | 0 | 898 | 914 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1598 | 1781 | 1777 | 0 | 0 | 1791 | 1657 |
| Q Serve(g_s), s | | | | 14.8 | 0.0 | 19.0 | 11.3 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Cycle Q Clear(g_c), s | | | | 14.8 | 0.0 | 19.0 | 11.3 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.76 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 626 |
| V/C Ratio(X) | | | | 0.82 | 0.00 | 1.12 | 0.80 | 0.48 | 0.00 | 0.00 | 1.33 | 1.46 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 626 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 33.8 | 0.0 | 35.5 | 22.6 | 0.0 | 0.0 | 0.0 | 28.0 | 28.0 |
| Incr Delay (d2), s/veh | | | | 12.9 | 0.0 | 85.7 | 1.0 | 0.1 | 0.0 | 0.0 | 157.7 | 215.4 |
| 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(50%),veh/ln | | | | 7.6 | 0.0 | 23.1 | 4.5 | 0.0 | 0.0 | 0.0 | 42.7 | 49.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 46.8 | 0.0 | 121.2 | 23.6 | 0.1 | 0.0 | 0.0 | 185.7 | 243.4 |
| LnGrp LOS | | | | D | A | F | C | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 690 | | | 1482 | | | 1812 | |
| Approach Delay, s/veh | | | | | 87.6 | | | 5.9 | | | 214.8 | |
| Approach LOS | | | | | F | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 25.0 | 40.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 19.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 21.0 | 13.3 | 36.0 |
| Green Ext Time (p_c), s | 12.1 | 0.0 | 0.6 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 115.0 |
| HCM 6th LOS | F |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | L |
| Maximum Queue (ft) | 85 | 62 |
| Average Queue (ft) | 43 | 18 |
| 95th Queue (ft) | 71 | 50 |
| Link Distance (ft) | 461 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 295 |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | TR | L | R |
| Maximum Queue (ft) | 172 | 12 | 21 | 2 | 23 | 10 |
| Average Queue (ft) | 70 | 1 | 3 | 0 | 2 | 0 |
| 95th Queue (ft) | 131 | 6 | 14 | 2 | 12 | 5 |
| Link Distance (ft) | 619 | 314 | | 733 | | |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | | 250 | | 290 | 330 |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | UL | R |
| Maximum Queue (ft) | 250 | 716 | 20 | 42 | 41 | 8 | 82 | 26 |
| Average Queue (ft) | 248 | 662 | 1 | 14 | 13 | 0 | 31 | 2 |
| 95th Queue (ft) | 271 | 821 | 11 | 34 | 37 | 5 | 64 | 13 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | | |
| Upstream Blk Time (%) | | 84 | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | 290 | 400 |
| Storage Blk Time (%) | 78 | 54 | | | | | | |
| Queuing Penalty (veh) | 40 | 168 | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | L | T | T | R | L | R |
| Maximum Queue (ft) | 151 | 79 | 508 | 100 | 31 | 62 | 79 | 19 | 152 | 6 |
| Average Queue (ft) | 57 | 6 | 192 | 61 | 4 | 11 | 14 | 1 | 67 | 0 |
| 95th Queue (ft) | 150 | 36 | 632 | 115 | 21 | 57 | 68 | 11 | 127 | 4 |
| Link Distance (ft) | 265 | | 685 | | | 1592 | 1592 | | | |
| Upstream Blk Time (%) | 0 | | 14 | | | | | | | |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | | |
| Storage Bay Dist (ft) | | 115 | | 100 | 265 | | | 300 | 300 | 290 |
| Storage Blk Time (%) | 16 | 0 | 23 | 22 | | | | | | |
| Queuing Penalty (veh) | 1 | 0 | 37 | 3 | | | | | | |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 1096 | 475 | 1372 | 1383 | 241 | 199 | 98 |
| Average Queue (ft) | 733 | 346 | 991 | 1011 | 150 | 54 | 48 |
| 95th Queue (ft) | 1386 | 655 | 1593 | 1604 | 230 | 124 | 88 |
| Link Distance (ft) | 1206 | | 1427 | 1427 | | 603 | 603 |
| Upstream Blk Time (%) | 25 | | 3 | 5 | | | |
| Queuing Penalty (veh) | 0 | | 17 | 27 | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 27 | 2 | | | 0 | 0 | |
| Queuing Penalty (veh) | 96 | 10 | | | 2 | 0 | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 280 | 277 | 139 | 296 | 219 | 1384 | 1388 |
| Average Queue (ft) | 153 | 152 | 116 | 77 | 14 | 1353 | 1356 |
| 95th Queue (ft) | 241 | 251 | 159 | 254 | 107 | 1421 | 1404 |
| Link Distance (ft) | 832 | | | 603 | 603 | 1342 | 1342 |
| Upstream Blk Time (%) | | | | | | 67 | 81 |
| Queuing Penalty (veh) | | | | | | 0 | 0 |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | | | 5 | 1 | | | |
| Queuing Penalty (veh) | | | 26 | 5 | | | |

## Network Summary

Network wide Queuing Penalty: 432

# MOVEMENT SUMMARY

## Site: 101 [5th Street @ Old Lynchburg Road - 2036 Background AM (Site Folder: General)]

Southwood Phase 2
2036 Background Conditions
Site Category: (None)
Roundabout
Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 120.0 %

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Old Lynchburg Road | | | | | | | | | | | | | | |
| 3 | L2 | 65 | 0.0 | 66 | 0.0 | 0.444 | 10.8 | LOS B | 3.1 | 79.3 | 0.72 | 0.65 | 0.75 | 30.6 |
| 8 | T1 | 614 | 6.0 | 620 | 6.0 | 0.444 | 10.5 | LOS B | 3.1 | 79.3 | 0.71 | 0.62 | 0.72 | 30.9 |
| 18 | R2 | 1 | 3.0 | 1 | 3.0 | 0.444 | 9.9 | LOS A | 3.1 | 80.0 | 0.71 | 0.61 | 0.71 | 26.5 |
| Approach | | 680 | 5.4 | 687 | 5.4 | 0.444 | 10.6 | LOS B | 3.1 | 80.0 | 0.71 | 0.63 | 0.73 | 30.9 |
| East: County Complex | | | | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 1 | 0.0 | 0.015 | 9.3 | LOS A | 0.1 | 1.4 | 0.66 | 0.57 | 0.66 | 27.1 |
| 6 | T1 | 1 | 0.0 | 1 | 0.0 | 0.015 | 9.3 | LOS A | 0.1 | 1.4 | 0.66 | 0.57 | 0.66 | 26.1 |
| 16 | R2 | 4 | 0.0 | 4 | 0.0 | 0.015 | 9.3 | LOS A | 0.1 | 1.4 | 0.66 | 0.57 | 0.66 | 25.5 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.015 | 9.3 | LOS A | 0.1 | 1.4 | 0.66 | 0.57 | 0.66 | 25.8 |
| North: 5th Street | | | | | | | | | | | | | | |
| 7u | U | 57 | 0.0 | 58 | 0.0 | 0.403 | 8.0 | LOS A | 2.6 | 68.5 | 0.31 | 0.16 | 0.31 | 31.0 |
| 7 | L2 | 45 | 0.0 | 45 | 0.0 | 0.403 | 8.0 | LOS A | 2.6 | 68.5 | 0.31 | 0.16 | 0.31 | 26.9 |
| 4 | T1 | 289 | 6.0 | 292 | 6.0 | 0.403 | 8.2 | LOS A | 2.6 | 68.5 | 0.31 | 0.16 | 0.31 | 31.3 |
| 14 | R2 | 243 | 5.0 | 245 | 5.0 | 0.280 | 7.1 | LOS A | 1.6 | 40.3 | 0.28 | 0.14 | 0.28 | 30.0 |
| Approach | | 634 | 4.7 | 640 | 4.7 | 0.403 | 7.7 | LOS A | 2.6 | 68.5 | 0.30 | 0.15 | 0.30 | 30.4 |
| West: Old Lynchburg Road | | | | | | | | | | | | | | |
| 5 | L2 | 283 | 2.0 | 286 | 2.0 | 0.465 | 12.0 | LOS B | 3.4 | 86.0 | 0.72 | 0.71 | 0.82 | 27.7 |
| 2 | T1 | 2 | 0.0 | 2 | 0.0 | 0.465 | 11.9 | LOS B | 3.4 | 86.0 | 0.72 | 0.71 | 0.82 | 24.4 |
| 12 | R2 | 29 | 14.0 | 29 | 14.0 | 0.465 | 12.9 | LOS B | 3.4 | 86.0 | 0.72 | 0.71 | 0.82 | 27.7 |
| Approach | | 314 | 3.1 | 317 | 3.1 | 0.465 | 12.1 | LOS B | 3.4 | 86.0 | 0.72 | 0.71 | 0.82 | 27.7 |
| All Vehicles | | 1634 | 4.7 | 1651 | 4.7 | 0.465 | 9.8 | LOS A | 3.4 | 86.0 | 0.55 | 0.46 | 0.58 | 30.0 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [5th Street @ Old Lynchburg Road - 2036 Background PM (Site Folder: General)]

Southwood Phase 2
2036 Background Conditions
Site Category: (None)
Roundabout
Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 120.0 %

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Old Lynchburg Road | | | | | | | | | | | | | | |
| 3 | L2 | 32 | 0.0 | 33 | 0.0 | 0.360 | 9.5 | LOS A | 2.3 | 59.0 | 0.71 | 0.62 | 0.71 | 31.5 |
| 8 | T1 | 506 | 1.0 | 527 | 1.0 | 0.360 | 9.0 | LOS A | 2.5 | 61.7 | 0.70 | 0.60 | 0.70 | 31.7 |
| 18 | R2 | 2 | 0.0 | 2 | 0.0 | 0.360 | 8.4 | LOS A | 2.5 | 61.7 | 0.70 | 0.59 | 0.70 | 27.0 |
| Approach | | 540 | 0.9 | 563 | 0.9 | 0.360 | 9.0 | LOS A | 2.5 | 61.7 | 0.70 | 0.60 | 0.70 | 31.7 |
| East: County Complex | | | | | | | | | | | | | | |
| 1 | L2 | 2 | 0.0 | 2 | 0.0 | 0.075 | 9.5 | LOS A | 0.3 | 7.3 | 0.65 | 0.65 | 0.65 | 27.2 |
| 6 | T1 | 1 | 0.0 | 1 | 0.0 | 0.075 | 9.5 | LOS A | 0.3 | 7.3 | 0.65 | 0.65 | 0.65 | 26.1 |
| 16 | R2 | 28 | 0.0 | 29 | 0.0 | 0.075 | 9.5 | LOS A | 0.3 | 7.3 | 0.65 | 0.65 | 0.65 | 25.5 |
| Approach | | 31 | 0.0 | 32 | 0.0 | 0.075 | 9.5 | LOS A | 0.3 | 7.3 | 0.65 | 0.65 | 0.65 | 25.6 |
| North: 5th Street | | | | | | | | | | | | | | |
| 7u | U | 86 | 5.0 | 90 | 5.0 | 0.681 | 13.9 | LOS B | 7.7 | 194.1 | 0.37 | 0.15 | 0.37 | 29.1 |
| 7 | L2 | 5 | 0.0 | 5 | 0.0 | 0.681 | 13.7 | LOS B | 7.7 | 194.1 | 0.37 | 0.15 | 0.37 | 25.5 |
| 4 | T1 | 600 | 0.0 | 625 | 0.0 | 0.681 | 13.7 | LOS B | 7.7 | 194.1 | 0.37 | 0.15 | 0.37 | 29.4 |
| 14 | R2 | 331 | 0.0 | 345 | 0.0 | 0.389 | 8.6 | LOS A | 2.5 | 62.6 | 0.23 | 0.10 | 0.23 | 29.5 |
| Approach | | 1022 | 0.4 | 1065 | 0.4 | 0.681 | 12.1 | LOS B | 7.7 | 194.1 | 0.32 | 0.13 | 0.32 | 29.4 |
| West: Old Lynchburg Road | | | | | | | | | | | | | | |
| 5 | L2 | 308 | 1.0 | 321 | 1.0 | 0.726 | 27.0 | LOS D | 8.8 | 220.7 | 0.96 | 1.28 | 1.75 | 23.6 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.726 | 26.9 | LOS D | 8.8 | 220.7 | 0.96 | 1.28 | 1.75 | 21.1 |
| 12 | R2 | 51 | 0.0 | 53 | 0.0 | 0.726 | 26.9 | LOS D | 8.8 | 220.7 | 0.96 | 1.28 | 1.75 | 23.7 |
| Approach | | 360 | 0.9 | 375 | 0.9 | 0.726 | 27.0 | LOS D | 8.8 | 220.7 | 0.96 | 1.28 | 1.75 | 23.6 |
| All Vehicles | | 1953 | 0.6 | 2034 | 0.6 | 0.726 | 13.9 | LOS B | 8.8 | 220.7 | 0.55 | 0.48 | 0.70 | 28.6 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# Appendix I
# Capacity Analysis Worksheets
# For 2036 Total Future Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 353 | 210 | 6 | 217 | 97 |
| Future Vol, veh/h | 5 | 353 | 210 | 6 | 217 | 97 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 7 | 4 | 0 | 13 | 8 |
| Mvmt Flow | 5 | 384 | 228 | 7 | 236 | 105 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 757 | 232 | 0 | 0 | 235 | 0 |
| Stage 1 | 232 | - | - | - | - | - |
| Stage 2 | 525 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.305 | - | - | 4.295 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3665 | - | - | 2.3235 | - |
| Pot Cap-1 Maneuver | 363 | 792 | - | - | 1262 | - |
| Stage 1 | 811 | - | - | - | - | - |
| Stage 2 | 564 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 295 | 792 | - | - | 1262 | - |
| Mov Cap-2 Maneuver | 295 | - | - | - | - | - |
| Stage 1 | 811 | - | - | - | - | - |
| Stage 2 | 459 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14.3 | 0 | 5.9 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 774 | 1262 | - |
| HCM Lane V/C Ratio | - | - | 0.503 | 0.187 | - |
| HCM Control Delay (s) | - | - | 14.3 | 8.5 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 2.9 | 0.7 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 223 | 0 | 21 | 0 | 0 | 1 | 35 | 543 | 0 | 6 | 298 | 87 |
| Future Vol, veh/h | 223 | 0 | 21 | 0 | 0 | 1 | 35 | 543 | 0 | 6 | 298 | 87 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 6 |
| Mvmt Flow | 237 | 0 | 22 | 0 | 0 | 1 | 37 | 578 | 0 | 6 | 317 | 93 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 692 | 981 | 159 | 823 | 1074 | 289 | 410 | 0 | 0 | 578 | 0 | 0 |
| Stage 1 | 329 | 329 | - | 652 | 652 | - | - | - | - | - | - | - |
| Stage 2 | 363 | 652 | - | 171 | 422 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.58 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.58 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.54 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 327 | 251 | 864 | 269 | 222 | 714 | 1160 | - | - | 1006 | - | - |
| Stage 1 | 652 | 650 | - | 428 | 467 | - | - | - | - | - | - | - |
| Stage 2 | 623 | 467 | - | 820 | 592 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 317 | 241 | 864 | 254 | 214 | 714 | 1160 | - | - | 1006 | - | - |
| Mov Cap-2 Maneuver | 317 | 241 | - | 254 | 214 | - | - | - | - | - | - | - |
| Stage 1 | 631 | 646 | - | 414 | 452 | - | - | - | - | - | - | - |
| Stage 2 | 602 | 452 | - | 794 | 588 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 44.5 | 10.1 | 0.5 | 0.1 |
| HCM LOS | E | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1160 | - | - | 335 | 714 | 1006 | - | - |
| HCM Lane V/C Ratio | 0.032 | - | - | 0.775 | 0.001 | 0.006 | - | - |
| HCM Control Delay (s) | 8.2 | - | - | 44.5 | 10.1 | 8.6 | - | - |
| HCM Lane LOS | A | - | - | E | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 6.2 | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 94.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 283 | 2 | 39 | 0 | 1 | 4 | 82 | 726 | 1 | 57 | 45 | 365 | 243 |
| Future Vol, veh/h | 283 | 2 | 39 | 0 | 1 | 4 | 82 | 726 | 1 | 57 | 45 | 365 | 243 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 0 | 14 | 0 | 0 | 0 | 6 | 3 | 0 | 0 | 0 | 6 | 5 |
| Mvmt Flow | 286 | 2 | 39 | 0 | 1 | 4 | 83 | 733 | 1 | 58 | 45 | 369 | 245 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1108 | 1475 | 185 | 1291 | 1719 | 367 | 614 | 0 | 0 | 733 | 734 | 0 | 0 |
| Stage 1 | 575 | 575 | - | 899 | 899 | - | - | - | - | - | - | - | - |
| Stage 2 | 533 | 900 | - | 392 | 820 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.18 | 7.5 | 6.5 | 6.9 | 4.22 | - | - | 6.4 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.44 | 3.5 | 4 | 3.3 | 2.26 | - | - | 2.5 | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 164 | 128 | 789 | 123 | 91 | 636 | 935 | - | - | 499 | 880 | - | - |
| Stage 1 | 470 | 506 | - | 304 | 360 | - | - | - | - | - | - | - | - |
| Stage 2 | 498 | 360 | - | 610 | 392 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 131 | 97 | 789 | 94 | 69 | 636 | 935 | - | - | 614 | 614 | - | - |
| Mov Cap-2 Maneuver | ~ 131 | 97 | - | 94 | 69 | - | - | - | - | - | - | - | - |
| Stage 1 | 428 | 421 | - | 277 | 328 | - | - | - | - | - | - | - | - |
| Stage 2 | 450 | 328 | - | 480 | 326 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 535.2 | 20.1 | 0.9 | 1.7 |
| HCM LOS | F | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 935 | - | - | 131 | 585 | 69 | 636 | 614 | - | - |
| HCM Lane V/C Ratio | 0.089 | - | - | 2.182 | 0.071 | 0.015 | 0.006 | 0.168 | - | - |
| HCM Control Delay (s) | 9.2 | - | - | $ 611.1 | 11.6 | 57.9 | 10.7 | 12 | - | - |
| HCM Lane LOS | A | - | - | F | B | F | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 23.9 | 0.2 | 0 | 0 | 0.6 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 25.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 418 | 0 | 1087 | 34 | 340 | 736 | 10 |
| Future Vol, veh/h | 30 | 1 | 18 | 17 | 1 | 418 | 0 | 1087 | 34 | 340 | 736 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 33 | 1 | 20 | 18 | 1 | 454 | 0 | 1182 | 37 | 370 | 800 | 11 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2132 | 2759 | 400 | 2323 | 2733 | 591 | 811 | 0 | 0 | 1219 | 0 | 0 |
| Stage 1 | 1540 | 1540 | - | 1182 | 1182 | - | - | - | - | - | - | - |
| Stage 2 | 592 | 1219 | - | 1141 | 1551 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 29 | 20 | 575 | 19 | 21 | ~ 448 | 824 | - | - | 568 | - | - |
| Stage 1 | 123 | 179 | - | 195 | 266 | - | - | - | - | - | - | - |
| Stage 2 | 465 | 255 | - | 207 | 177 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | 7 | 575 | ~ 8 | 7 | ~ 448 | 824 | - | - | 568 | - | - |
| Mov Cap-2 Maneuver | - | 7 | - | ~ 8 | 7 | - | - | - | - | - | - | - |
| Stage 1 | 123 | 62 | - | 195 | 266 | - | - | - | - | - | - | - |
| Stage 2 | - | 255 | - | 68 | 62 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | 137.9 | 0 | 7 |
| HCM LOS | - | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 824 | - | - | - | 575 | 8 | 448 | 568 | - | - |
| HCM Lane V/C Ratio | - | - | - | - | 0.034 | 2.446 | 1.014 | 0.651 | - | - |
| HCM Control Delay (s) | 0 | - | - | - | 11.$ | 1555.5 | 76.9 | 22.4 | - | - |
| HCM Lane LOS | A | - | - | - | B | F | F | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 | 3.5 | 13.5 | 4.7 | - | - |

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

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 629 | 373 | 1675 | 214 | 861 |
| v/c Ratio | 1.32 | 0.69 | 1.47 | 0.46 | 0.42 |
| Control Delay | 188.9 | 23.6 | 243.3 | 18.0 | 4.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 188.9 | 23.6 | 243.3 | 18.0 | 4.8 |
| Queue Length 50th (ft) | ~467 | 105 | ~689 | 63 | 93 |
| Queue Length 95th (ft) | #673 | 208 | #828 | m74 | m85 |
| Internal Link Dist (ft) | 1069 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 476 | 543 | 1139 | 461 | 2062 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.32 | 0.69 | 1.47 | 0.46 | 0.42 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 579 | 0 | 343 | 0 | 0 | 0 | 0 | 1129 | 412 | 197 | 792 | 0 |
| Future Volume (veh/h) | 579 | 0 | 343 | 0 | 0 | 0 | 0 | 1129 | 412 | 197 | 792 | 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 | 1885 | 1900 | 1870 | | | | 0 | 1870 | 1885 | 1885 | 1826 | 0 |
| Adj Flow Rate, veh/h | 629 | 0 | 373 | | | | 0 | 1227 | 448 | 214 | 861 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 0 | 2 | | | | 0 | 2 | 1 | 1 | 5 | 0 |
| Cap, veh/h | 483 | 0 | 423 | | | | 0 | 829 | 293 | 459 | 2082 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.32 | 0.32 | 0.42 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1585 | | | | 0 | 2667 | 910 | 1795 | 3561 | 0 |
| Grp Volume(v), veh/h | 629 | 0 | 373 | | | | 0 | 835 | 840 | 214 | 861 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1585 | | | | 0 | 1777 | 1707 | 1795 | 1735 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 20.3 | | | | 0.0 | 29.0 | 29.0 | 2.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 20.3 | | | | 0.0 | 29.0 | 29.0 | 2.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.53 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 550 | 459 | 2082 | 0 |
| V/C Ratio(X) | 1.30 | 0.00 | 0.88 | | | | 0.00 | 1.46 | 1.53 | 0.47 | 0.41 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 423 | | | | 0 | 573 | 550 | 459 | 2082 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 31.6 | | | | 0.0 | 30.5 | 30.5 | 20.8 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 151.1 | 0.0 | 19.1 | | | | 0.0 | 215.7 | 246.6 | 0.1 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 30.3 | 0.0 | 9.7 | | | | 0.0 | 45.6 | 48.5 | 2.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 184.1 | 0.0 | 50.8 | | | | 0.0 | 246.2 | 277.1 | 20.9 | 0.1 | 0.0 |
| LnGrp LOS | F | A | D | | | | A | F | F | C | A | A |
| Approach Vol, veh/h | | 1002 | | | | | | 1675 | | | 1075 | |
| Approach Delay, s/veh | | 134.5 | | | | | | 261.7 | | | 4.2 | |
| Approach LOS | | F | | | | | | F | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.0 | 35.0 | | 30.0 | | 60.0 | | | | | | |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 | | | | | | |
| Max Green Setting (Gmax), s | 19.0 | 29.0 | | 24.0 | | 54.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 4.9 | 31.0 | | 26.0 | | 2.0 | | | | | | |
| Green Ext Time (p_c), s | 0.5 | 0.0 | | 0.0 | | 8.2 | | | | | | |

| Intersection Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM 6th Ctrl Delay | | | 154.0 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 282 | 389 | 528 | 1329 | 1266 |
| v/c Ratio | 0.79 | 0.96 | 0.95 | 0.57 | 1.05 |
| Control Delay | 51.7 | 62.2 | 34.7 | 5.9 | 67.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.7 | 62.2 | 34.7 | 5.9 | 67.0 |
| Queue Length 50th (ft) | 152 | 163 | 278 | 154 | ~373 |
| Queue Length 95th (ft) | #276 | #344 | m180 | m97 | #505 |
| Internal Link Dist (ft) | 742 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 359 | 410 | 555 | 2329 | 1204 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.79 | 0.95 | 0.95 | 0.57 | 1.05 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 271 | 0 | 373 | 507 | 1276 | 0 | 0 | 707 | 509 |
| Future Volume (veh/h) | 0 | 0 | 0 | 271 | 0 | 373 | 507 | 1276 | 0 | 0 | 707 | 509 |
| 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 | | | | 1811 | 1900 | 1826 | 1870 | 1870 | 0 | 0 | 1841 | 1856 |
| Adj Flow Rate, veh/h | | | | 282 | 0 | 389 | 528 | 1329 | 0 | 0 | 736 | 530 |
| Peak Hour Factor | | | | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | | | | 6 | 0 | 5 | 2 | 2 | 0 | 0 | 4 | 3 |
| Cap, veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 628 | 448 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.53 | 1.00 | 0.00 | 0.00 | 0.32 | 0.32 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1547 | 1781 | 3647 | 0 | 0 | 2042 | 1389 |
| Grp Volume(v), veh/h | | | | 282 | 0 | 389 | 528 | 1329 | 0 | 0 | 659 | 607 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1547 | 1781 | 1777 | 0 | 0 | 1749 | 1591 |
| Q Serve(g_s), s | | | | 13.1 | 0.0 | 19.0 | 20.6 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 |
| Cycle Q Clear(g_c), s | | | | 13.1 | 0.0 | 19.0 | 20.6 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.87 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 563 | 513 |
| V/C Ratio(X) | | | | 0.74 | 0.00 | 1.19 | 0.95 | 0.57 | 0.00 | 0.00 | 1.17 | 1.18 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 327 | 555 | 2330 | 0 | 0 | 563 | 513 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 33.2 | 0.0 | 35.5 | 18.7 | 0.0 | 0.0 | 0.0 | 30.5 | 30.5 |
| Incr Delay (d2), s/veh | | | | 7.4 | 0.0 | 112.2 | 4.4 | 0.1 | 0.0 | 0.0 | 94.2 | 101.4 |
| 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(50%),veh/ln | | | | 6.3 | 0.0 | 24.8 | 5.9 | 0.0 | 0.0 | 0.0 | 25.9 | 24.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 40.5 | 0.0 | 147.7 | 23.0 | 0.1 | 0.0 | 0.0 | 124.7 | 131.9 |
| LnGrp LOS | | | | D | A | F | C | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 671 | | | 1857 | | | 1266 | |
| Approach Delay, s/veh | | | | | 102.7 | | | 6.6 | | | 128.1 | |
| Approach LOS | | | | | F | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 30.0 | 35.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 24.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 21.0 | 22.6 | 31.0 |
| Green Ext Time (p_c), s | 16.2 | 0.0 | 0.3 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 64.1 |
| HCM 6th LOS | E |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 30 | 1 | 18 | 17 | 1 | 418 | 0 | 1087 | 34 | 340 | 736 | 10 |
| Future Volume (Veh/h) | 30 | 1 | 18 | 17 | 1 | 418 | 0 | 1087 | 34 | 340 | 736 | 10 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 33 | 1 | 20 | 18 | 1 | 454 | 0 | 1182 | 37 | 370 | 800 | 11 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | 5 | | | 4 | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2132 | 2759 | 400 | 2322 | 2733 | 591 | 811 | | | 1219 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2132 | 2759 | 400 | 2322 | 2733 | 591 | 811 | | | 1219 | | |
| tC, single (s) | 7.5 | 6.5 | 7.1 | 7.6 | 6.5 | 7.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.6 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 0 | 86 | 97 | 0 | 86 | 0 | 100 | | | 35 | | |
| cM capacity (veh/h) | 0 | 7 | 575 | 8 | 7 | 448 | 824 | | | 568 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 54 | 473 | 0 | 591 | 591 | 37 | 370 | 400 | 400 | 11 |
| Volume Left | 33 | 18 | 0 | 0 | 0 | 0 | 370 | 0 | 0 | 0 |
| Volume Right | 20 | 454 | 0 | 0 | 0 | 37 | 0 | 0 | 0 | 11 |
| cSH | 0 | 163 | 1700 | 1700 | 1700 | 1700 | 568 | 1700 | 1700 | 1700 |
| Volume to Capacity | 3174.33 | 2.90 | 0.00 | 0.35 | 0.35 | 0.02 | 0.65 | 0.24 | 0.24 | 0.01 |
| Queue Length 95th (ft) | Err | 1072 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 0 |
| Control Delay (s) | Err | 914.8 | 0.0 | 0.0 | 0.0 | 0.0 | 22.4 | 0.0 | 0.0 | 0.0 |
| Lane LOS | F | F | | | | | C | | | |
| Approach Delay (s) | Err | 914.8 | 0.0 | | | | 7.0 | | | |
| Approach LOS | F | F | | | | | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 335.1 | | | |
| Intersection Capacity Utilization | 69.3% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LR | TR | L |
| Maximum Queue (ft) | 135 | 2 | 104 |
| Average Queue (ft) | 66 | 0 | 33 |
| 95th Queue (ft) | 107 | 2 | 78 |
| Link Distance (ft) | 461 | 108 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 295 |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | TR | L | R |
| Maximum Queue (ft) | 224 | 20 | 27 | 2 | 17 | 8 |
| Average Queue (ft) | 94 | 1 | 7 | 0 | 1 | 0 |
| 95th Queue (ft) | 180 | 9 | 22 | 2 | 9 | 5 |
| Link Distance (ft) | 619 | 314 | | 733 | | |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | | 250 | | 290 | 330 |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | T | UL | T | R |
| Maximum Queue (ft) | 250 | 723 | 12 | 22 | 85 | 6 | 8 | 75 | 2 | 37 |
| Average Queue (ft) | 249 | 679 | 1 | 2 | 26 | 0 | 0 | 32 | 0 | 3 |
| 95th Queue (ft) | 255 | 793 | 7 | 14 | 62 | 4 | 5 | 62 | 2 | 19 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | 1952 | | 1591 | |
| Upstream Blk Time (%) | | 90 | | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | | 290 | | 400 |
| Storage Blk Time (%) | 80 | 52 | | | | | | | | |
| Queuing Penalty (veh) | 33 | 148 | | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | T | T | R | L | T | T |
| Maximum Queue (ft) | 293 | 92 | 786 | 100 | 54 | 68 | 31 | 297 | 757 | 636 |
| Average Queue (ft) | 251 | 7 | 737 | 48 | 12 | 13 | 2 | 220 | 306 | 242 |
| 95th Queue (ft) | 331 | 51 | 877 | 129 | 86 | 89 | 16 | 357 | 1044 | 960 |
| Link Distance (ft) | 265 | | 750 | | 1591 | 1591 | | | 1427 | 1427 |
| Upstream Blk Time (%) | 84 | | 87 | | | | | | 3 | 1 |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | 14 | 5 |
| Storage Bay Dist (ft) | | 115 | | 100 | | | 300 | 300 | | |
| Storage Blk Time (%) | 95 | 0 | 94 | 39 | 0 | 0 | | 29 | 21 | |
| Queuing Penalty (veh) | 17 | 0 | 393 | 7 | 0 | 0 | | 108 | 72 | |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 1128 | 500 | 1138 | 1154 | 187 | 132 | 112 |
| Average Queue (ft) | 996 | 473 | 687 | 704 | 85 | 38 | 25 |
| 95th Queue (ft) | 1344 | 639 | 1394 | 1408 | 155 | 139 | 124 |
| Link Distance (ft) | 1075 | | 1427 | 1427 | | 607 | 607 |
| Upstream Blk Time (%) | 54 | | 1 | 2 | | | |
| Queuing Penalty (veh) | 0 | | 10 | 14 | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 50 | 3 | | | 0 | 1 | |
| Queuing Penalty (veh) | 173 | 19 | | | 0 | 2 | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 347 | 381 | 140 | 459 | 409 | 847 | 915 |
| Average Queue (ft) | 157 | 190 | 134 | 233 | 114 | 535 | 600 |
| 95th Queue (ft) | 280 | 330 | 156 | 431 | 331 | 932 | 1015 |
| Link Distance (ft) | 754 | | | 607 | 607 | 1340 | 1340 |
| Upstream Blk Time (%) | | | | | 0 | 0 | 0 |
| Queuing Penalty (veh) | | | | | 0 | 0 | 0 |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | 0 | 0 | 17 | 7 | | | |
| Queuing Penalty (veh) | 1 | 0 | 110 | 36 | | | |

## Network Summary

Network wide Queuing Penalty: 1162

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 346 | 104 | 8 | 418 | 242 |
| Future Vol, veh/h | 8 | 346 | 104 | 8 | 418 | 242 |
| 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 | - | - | - | 295 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 3 | 2 | 0 | 1 | 1 |
| Mvmt Flow | 9 | 376 | 113 | 9 | 454 | 263 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1158 | 118 | 0 | 0 | 122 | 0 |
| Stage 1 | 118 | - | - | - | - | - |
| Stage 2 | 1040 | - | - | - | - | - |
| Critical Hdwy | 6.6 | 6.245 | - | - | 4.115 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3285 | - | - | 2.2095 | - |
| Pot Cap-1 Maneuver | 205 | 930 | - | - | 1471 | - |
| Stage 1 | 912 | - | - | - | - | - |
| Stage 2 | 306 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 142 | 930 | - | - | 1471 | - |
| Mov Cap-2 Maneuver | 142 | - | - | - | - | - |
| Stage 1 | 912 | - | - | - | - | - |
| Stage 2 | 211 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.1 | 0 | 5.4 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 826 | 1471 | - |
| HCM Lane V/C Ratio | - | - | 0.466 | 0.309 | - |
| HCM Control Delay (s) | - | - | 13.1 | 8.5 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 2.5 | 1.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 24.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 197 | 0 | 51 | 0 | 0 | 1 | 29 | 431 | 0 | 9 | 622 | 170 |
| Future Vol, veh/h | 197 | 0 | 51 | 0 | 0 | 1 | 29 | 431 | 0 | 9 | 622 | 170 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 250 | - | - | 290 | - | 330 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Mvmt Flow | 210 | 0 | 54 | 0 | 0 | 1 | 31 | 459 | 0 | 10 | 662 | 181 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 974 | 1203 | 331 | 872 | 1384 | 230 | 843 | 0 | 0 | 459 | 0 | 0 |
| Stage 1 | 682 | 682 | - | 521 | 521 | - | - | - | - | - | - | - |
| Stage 2 | 292 | 521 | - | 351 | 863 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.5 | 7.02 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4 | 3.36 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 206 | 186 | 653 | 248 | 145 | 779 | 802 | - | - | 1113 | - | - |
| Stage 1 | 406 | 453 | - | 512 | 535 | - | - | - | - | - | - | - |
| Stage 2 | 692 | 535 | - | 644 | 374 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 198 | 177 | 653 | 219 | 138 | 779 | 802 | - | - | 1113 | - | - |
| Mov Cap-2 Maneuver | ~ 198 | 177 | - | 219 | 138 | - | - | - | - | - | - | - |
| Stage 1 | 390 | 449 | - | 492 | 514 | - | - | - | - | - | - | - |
| Stage 2 | 664 | 514 | - | 585 | 371 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 147.6 | 9.6 | 0.6 | 0.1 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 802 | - | - | 231 | 779 | 1113 | - | - |
| HCM Lane V/C Ratio | 0.038 | - | - | 1.142 | 0.001 | 0.009 | - | - |
| HCM Control Delay (s) | 9.7 | - | - | 147.6 | 9.6 | 8.3 | - | - |
| HCM Lane LOS | A | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 12.2 | 0 | 0 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 204 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 308 | 1 | 71 | 2 | 0 | 28 | 47 | 631 | 2 | 86 | 5 | 746 | 331 |
| Future Vol, veh/h | 308 | 1 | 71 | 2 | 0 | 28 | 47 | 631 | 2 | 86 | 5 | 746 | 331 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | - | None |
| Storage Length | 250 | - | - | - | - | 170 | 290 | - | 105 | - | 290 | - | 400 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 |
| Mvmt Flow | 321 | 1 | 74 | 2 | 0 | 29 | 49 | 657 | 2 | 90 | 5 | 777 | 345 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1394 | 1724 | 389 | 1334 | 2067 | 329 | 1122 | 0 | 0 | 657 | 659 | 0 | 0 |
| Stage 1 | 967 | 967 | - | 755 | 755 | - | - | - | - | - | - | - | - |
| Stage 2 | 427 | 757 | - | 579 | 1312 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.52 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 6.5 | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.52 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.55 | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 102 | 90 | 615 | 114 | 55 | 673 | 630 | - | - | 539 | 939 | - | - |
| Stage 1 | ~ 275 | 335 | - | 371 | 420 | - | - | - | - | - | - | - | - |
| Stage 2 | 579 | 419 | - | 473 | 230 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 79 | 68 | 615 | 81 | 42 | 673 | 630 | - | - | 530 | 530 | - | - |
| Mov Cap-2 Maneuver | ~ 79 | 68 | - | 81 | 42 | - | - | - | - | - | - | - | - |
| Stage 1 | ~ 254 | 275 | - | 342 | 387 | - | - | - | - | - | - | - | - |
| Stage 2 | 511 | 386 | - | 340 | 189 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 1206.9 | 13.3 | 0.8 | 1 |
| HCM LOS | F | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 630 | - | - | 79 | 553 | 81 | 673 | 530 | - | - |
| HCM Lane V/C Ratio | 0.078 | - | - | 4.061 | 0.136 | 0.026 | 0.043 | 0.179 | - | - |
| HCM Control Delay (s) | 11.2 | - | - | $ 1486.1 | 12.5 | 50.6 | 10.6 | 13.3 | - | - |
| HCM Lane LOS | B | - | - | F | B | F | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 33.8 | 0.5 | 0.1 | 0.1 | 0.6 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 22 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 187 | 8 | 1051 | 30 | 236 | 1186 | 29 |
| Future Vol, veh/h | 25 | 1 | 4 | 15 | 1 | 187 | 8 | 1051 | 30 | 236 | 1186 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 115 | - | - | 100 | 265 | - | 300 | 300 | - | 290 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 11 | 6 | 0 | 3 | 0 | 1 | 15 | 2 | 5 | 20 |
| Mvmt Flow | 26 | 1 | 4 | 15 | 1 | 193 | 8 | 1084 | 31 | 243 | 1223 | 30 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2268 | 2840 | 612 | 2198 | 2839 | 542 | 1253 | 0 | 0 | 1115 | 0 | 0 |
| Stage 1 | 1709 | 1709 | - | 1100 | 1100 | - | - | - | - | - | - | - |
| Stage 2 | 559 | 1131 | - | 1098 | 1739 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.62 | 6.5 | 6.96 | 4.1 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.62 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.56 | 4 | 3.33 | 2.2 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 23 | 18 | 415 | 24 | 18 | 482 | 562 | - | - | 622 | - | - |
| Stage 1 | 96 | 148 | - | 219 | 290 | - | - | - | - | - | - | - |
| Stage 2 | 486 | 281 | - | 220 | 143 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 9 | 11 | 415 | ~ 15 | 11 | 482 | 562 | - | - | 622 | - | - |
| Mov Cap-2 Maneuver | ~ 9 | 11 | - | ~ 15 | 11 | - | - | - | - | - | - | - |
| Stage 1 | 95 | 90 | - | 216 | 286 | - | - | - | - | - | - | - |
| Stage 2 | 286 | 277 | - | 131 | 87 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 1481.2 | 64.3 | 0.1 | 2.4 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 562 | - | - | 9 | 415 | 15 | 482 | 622 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | - | 2.978 | 0.01 | 1.1 | 0.4 | 0.391 | - | - |
| HCM Control Delay (s) | 11.5 | - | - | $ 1707 | 13.8 | $ 612.8 | 17.4 | 14.5 | - | - |
| HCM Lane LOS | B | - | - | F | B | F | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.5 | 0 | 2.6 | 1.9 | 1.9 | - | - |

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

| Lane Group | EBT | EBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 562 | 414 | 1340 | 392 | 1153 |
| v/c Ratio | 1.19 | 0.81 | 1.42 | 0.71 | 0.53 |
| Control Delay | 137.1 | 36.9 | 224.8 | 25.4 | 7.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 137.1 | 36.9 | 224.8 | 25.4 | 7.5 |
| Queue Length 50th (ft) | ~390 | 165 | ~543 | 191 | 132 |
| Queue Length 95th (ft) | #588 | #319 | #676 | m140 | m79 |
| Internal Link Dist (ft) | 1200 | | 1442 | | 577 |
| Turn Bay Length (ft) | | 500 | | 245 | |
| Base Capacity (vph) | 472 | 510 | 942 | 549 | 2166 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.19 | 0.81 | 1.42 | 0.71 | 0.53 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 545 | 0 | 402 | 0 | 0 | 0 | 0 | 994 | 306 | 380 | 1118 | 0 |
| Future Volume (veh/h) | 545 | 0 | 402 | 0 | 0 | 0 | 0 | 994 | 306 | 380 | 1118 | 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 | 1900 | 1900 | | | | 0 | 1870 | 1870 | 1856 | 1900 | 0 |
| Adj Flow Rate, veh/h | 562 | 0 | 414 | | | | 0 | 1025 | 315 | 392 | 1153 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 0 | 0 | | | | 0 | 2 | 2 | 3 | 0 | 0 |
| Cap, veh/h | 483 | 0 | 429 | | | | 0 | 715 | 218 | 551 | 2166 | 0 |
| Arrive On Green | 0.27 | 0.00 | 0.27 | | | | 0.00 | 0.27 | 0.27 | 0.53 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1810 | 0 | 1610 | | | | 0 | 2775 | 818 | 1767 | 3705 | 0 |
| Grp Volume(v), veh/h | 562 | 0 | 414 | | | | 0 | 677 | 663 | 392 | 1153 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 0 | 1610 | | | | 0 | 1777 | 1723 | 1767 | 1805 | 0 |
| Q Serve(g_s), s | 24.0 | 0.0 | 22.8 | | | | 0.0 | 24.0 | 24.0 | 9.4 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 22.8 | | | | 0.0 | 24.0 | 24.0 | 9.4 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.47 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 459 | 551 | 2166 | 0 |
| V/C Ratio(X) | 1.16 | 0.00 | 0.96 | | | | 0.00 | 1.43 | 1.44 | 0.71 | 0.53 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 0 | 429 | | | | 0 | 474 | 459 | 551 | 2166 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 33.0 | 0.0 | 32.6 | | | | 0.0 | 33.0 | 33.0 | 16.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 94.7 | 0.0 | 34.2 | | | | 0.0 | 204.4 | 211.8 | 0.4 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 22.7 | 0.0 | 12.5 | | | | 0.0 | 36.4 | 36.3 | 3.8 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 127.7 | 0.0 | 66.7 | | | | 0.0 | 237.4 | 244.8 | 17.0 | 0.1 | 0.0 |
| LnGrp LOS | F | A | E | | | | A | F | F | B | A | A |
| Approach Vol, veh/h | | 976 | | | | | | 1340 | | | 1545 | |
| Approach Delay, s/veh | | 101.9 | | | | | | 241.1 | | | 4.4 | |
| Approach LOS | | F | | | | | | F | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 30.0 | 30.0 | | 30.0 | | 60.0 | | | | | | |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | 6.0 | | 6.0 | | | | | | |
| Max Green Setting (Gmax), s | 24.0 | 24.0 | | 24.0 | | 54.0 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 11.4 | 26.0 | | 26.0 | | 2.0 | | | | | | |
| Green Ext Time (p_c), s | 1.0 | 0.0 | | 0.0 | | 10.0 | | | | | | |

| Intersection Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM 6th Ctrl Delay | | | 111.2 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 359 | 378 | 404 | 1195 | 1908 |
| v/c Ratio | 0.95 | 0.89 | 0.89 | 0.52 | 1.40 |
| Control Delay | 72.8 | 50.0 | 25.7 | 1.9 | 207.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 72.8 | 50.0 | 25.7 | 1.9 | 207.6 |
| Queue Length 50th (ft) | 203 | 153 | 200 | 50 | ~747 |
| Queue Length 95th (ft) | #372 | #320 | m137 | m31 | #887 |
| Internal Link Dist (ft) | 819 | | | 577 | 1320 |
| Turn Bay Length (ft) | | 450 | 140 | | |
| Base Capacity (vph) | 377 | 423 | 456 | 2320 | 1367 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.95 | 0.89 | 0.89 | 0.52 | 1.40 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 348 | 0 | 367 | 392 | 1159 | 0 | 0 | 1174 | 677 |
| Future Volume (veh/h) | 0 | 0 | 0 | 348 | 0 | 367 | 392 | 1159 | 0 | 0 | 1174 | 677 |
| 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 | | | | 1885 | 1900 | 1885 | 1870 | 1870 | 0 | 0 | 1885 | 1885 |
| Adj Flow Rate, veh/h | | | | 359 | 0 | 378 | 404 | 1195 | 0 | 0 | 1210 | 698 |
| Peak Hour Factor | | | | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | | | | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 1 |
| Cap, veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 855 | 452 |
| Arrive On Green | | | | 0.21 | 0.00 | 0.21 | 0.42 | 1.00 | 0.00 | 0.00 | 0.38 | 0.38 |
| Sat Flow, veh/h | | | | 1810 | 0 | 1598 | 1781 | 3647 | 0 | 0 | 2358 | 1197 |
| Grp Volume(v), veh/h | | | | 359 | 0 | 378 | 404 | 1195 | 0 | 0 | 934 | 974 |
| Grp Sat Flow(s),veh/h/ln | | | | 1810 | 0 | 1598 | 1781 | 1777 | 0 | 0 | 1791 | 1670 |
| Q Serve(g_s), s | | | | 17.6 | 0.0 | 19.0 | 14.2 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Cycle Q Clear(g_c), s | | | | 17.6 | 0.0 | 19.0 | 14.2 | 0.0 | 0.0 | 0.0 | 34.0 | 34.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.72 |
| Lane Grp Cap(c), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 631 |
| V/C Ratio(X) | | | | 0.94 | 0.00 | 1.12 | 0.89 | 0.51 | 0.00 | 0.00 | 1.38 | 1.54 |
| Avail Cap(c_a), veh/h | | | | 382 | 0 | 337 | 456 | 2330 | 0 | 0 | 677 | 631 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 34.9 | 0.0 | 35.5 | 23.2 | 0.0 | 0.0 | 0.0 | 28.0 | 28.0 |
| Incr Delay (d2), s/veh | | | | 31.0 | 0.0 | 85.7 | 2.2 | 0.1 | 0.0 | 0.0 | 180.5 | 252.5 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 10.7 | 0.0 | 23.1 | 5.2 | 0.0 | 0.0 | 0.0 | 47.0 | 56.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 66.0 | 0.0 | 121.2 | 25.4 | 0.1 | 0.0 | 0.0 | 208.5 | 280.5 |
| LnGrp LOS | | | | E | A | F | C | A | A | A | F | F |
| Approach Vol, veh/h | | | | | 737 | | | 1599 | | | 1908 | |
| Approach Delay, s/veh | | | | | 94.3 | | | 6.5 | | | 245.3 | |
| Approach LOS | | | | | F | | | A | | | F | |

| Timer - Assigned Phs | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 65.0 | 25.0 | 25.0 | 40.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 59.0 | 19.0 | 19.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 21.0 | 16.2 | 36.0 |
| Green Ext Time (p_c), s | 13.5 | 0.0 | 0.4 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 129.1 |
| HCM 6th LOS | F |

## Intersection: 1: Old Lynchburg Rd & Hickory St

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LR | TR | L |
| Maximum Queue (ft) | 143 | 4 | 86 |
| Average Queue (ft) | 60 | 0 | 30 |
| 95th Queue (ft) | 99 | 2 | 71 |
| Link Distance (ft) | 461 | 108 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 295 |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: Old Lynchburg Rd & Sunset Ave Ext/Private Entrance

| Movement | EB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | TR | L | T | R |
| Maximum Queue (ft) | 227 | 14 | 31 | 2 | 21 | 2 | 13 |
| Average Queue (ft) | 95 | 1 | 8 | 0 | 2 | 0 | 1 |
| 95th Queue (ft) | 189 | 7 | 24 | 2 | 12 | 2 | 8 |
| Link Distance (ft) | 619 | 314 | | 733 | | 1952 | |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | | 250 | | 290 | | 330 |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 3: Old Lynchburg Rd & County Complex & 5th Street

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | R | L | T | T | UL | R |
| Maximum Queue (ft) | 250 | 718 | 20 | 40 | 54 | 2 | 6 | 77 | 20 |
| Average Queue (ft) | 249 | 689 | 2 | 14 | 19 | 0 | 0 | 27 | 2 |
| 95th Queue (ft) | 253 | 710 | 11 | 33 | 46 | 0 | 4 | 60 | 11 |
| Link Distance (ft) | | 673 | 311 | | | 1952 | 1952 | | |
| Upstream Blk Time (%) | | 98 | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 170 | 290 | | | 290 | 400 |
| Storage Blk Time (%) | 79 | 53 | | | | | | | |
| Queuing Penalty (veh) | 57 | 163 | | | | | | | |

## Intersection: 4: 5th Street & Afton Pond Ct/Stagecoach Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | L | T | T | R | L |
| Maximum Queue (ft) | 255 | 79 | 713 | 100 | 101 | 322 | 344 | 99 | 204 |
| Average Queue (ft) | 135 | 6 | 422 | 76 | 7 | 84 | 93 | 9 | 83 |
| 95th Queue (ft) | 297 | 42 | 930 | 127 | 54 | 279 | 290 | 92 | 161 |
| Link Distance (ft) | 265 | | 685 | | | 1592 | 1592 | | |
| Upstream Blk Time (%) | 24 | | 50 | | | | | | |
| Queuing Penalty (veh) | 0 | | 0 | | | | | | |
| Storage Bay Dist (ft) | | 115 | | 100 | 265 | | | 300 | 300 |
| Storage Blk Time (%) | 54 | 0 | 58 | 56 | 0 | 4 | 3 | 0 | 0 |
| Queuing Penalty (veh) | 2 | 0 | 108 | 9 | 0 | 0 | 1 | 0 | 1 |

## Intersection: 5: 5th Street & I-64 EB ramp

| Movement | EB | EB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | TR | L | T | T |
| Maximum Queue (ft) | 1142 | 500 | 1451 | 1461 | 232 | 168 | 103 |
| Average Queue (ft) | 820 | 398 | 1258 | 1268 | 141 | 63 | 52 |
| 95th Queue (ft) | 1437 | 668 | 1695 | 1696 | 219 | 133 | 86 |
| Link Distance (ft) | 1206 | | 1427 | 1427 | | 603 | 603 |
| Upstream Blk Time (%) | 24 | | 15 | 19 | | | |
| Queuing Penalty (veh) | 0 | | 97 | 121 | | | |
| Storage Bay Dist (ft) | | 500 | | | 245 | | |
| Storage Blk Time (%) | 31 | 3 | | | 0 | 0 | |
| Queuing Penalty (veh) | 126 | 15 | | | 1 | 0 | |

## Intersection: 6: 5th Street & I-64 WB ramp

| Movement | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | T | T | T | TR |
| Maximum Queue (ft) | 353 | 297 | 139 | 304 | 185 | 1390 | 1382 |
| Average Queue (ft) | 192 | 162 | 117 | 87 | 13 | 1360 | 1360 |
| 95th Queue (ft) | 310 | 265 | 160 | 269 | 98 | 1375 | 1371 |
| Link Distance (ft) | 832 | | | 603 | 603 | 1342 | 1342 |
| Upstream Blk Time (%) | | | | | | 72 | 84 |
| Queuing Penalty (veh) | | | | | | 0 | 0 |
| Storage Bay Dist (ft) | | 450 | 140 | | | | |
| Storage Blk Time (%) | | | 5 | 2 | | | |
| Queuing Penalty (veh) | | | 30 | 8 | | | |

## Network Summary

Network wide Queuing Penalty: 739

# MOVEMENT SUMMARY

## Site: 101 [5th St @ Old Lynchburg Rd 2036 Total - AM (Site Folder: General)]

Southwood Phase 2
2036 Future Conditions
Site Category: (None)
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Old Lynchburg Road | | | | | | | | | | | | | | |
| 3 | L2 | 82 | 0.0 | 83 | 0.0 | 0.415 | 8.5 | LOS A | 2.9 | 74.7 | 0.68 | 0.56 | 0.68 | 32.9 |
| 8 | T1 | 726 | 6.0 | 733 | 6.0 | 0.415 | 8.3 | LOS A | 3.0 | 78.2 | 0.67 | 0.55 | 0.67 | 33.3 |
| 18 | R2 | 1 | 3.0 | 1 | 3.0 | 0.415 | 7.8 | LOS A | 3.0 | 78.2 | 0.67 | 0.53 | 0.67 | 32.7 |
| Approach | | 809 | 5.4 | 817 | 5.4 | 0.415 | 8.3 | LOS A | 3.0 | 78.2 | 0.68 | 0.55 | 0.68 | 33.2 |
| East: County Complex | | | | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 1 | 0.0 | 0.012 | 7.4 | LOS A | 0.0 | 1.2 | 0.67 | 0.55 | 0.67 | 33.6 |
| 6 | T1 | 1 | 0.0 | 1 | 0.0 | 0.012 | 7.4 | LOS A | 0.0 | 1.2 | 0.67 | 0.55 | 0.67 | 33.5 |
| 16 | R2 | 4 | 0.0 | 4 | 0.0 | 0.012 | 7.4 | LOS A | 0.0 | 1.2 | 0.67 | 0.55 | 0.67 | 32.5 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.012 | 7.4 | LOS A | 0.0 | 1.2 | 0.67 | 0.55 | 0.67 | 32.9 |
| North: 5th Street | | | | | | | | | | | | | | |
| 7u | U | 57 | 0.0 | 58 | 0.0 | 0.403 | 7.0 | LOS A | 2.7 | 69.8 | 0.32 | 0.16 | 0.32 | 34.3 |
| 7 | L2 | 45 | 0.0 | 45 | 0.0 | 0.403 | 7.0 | LOS A | 2.7 | 69.8 | 0.32 | 0.16 | 0.32 | 33.5 |
| 4 | T1 | 365 | 6.0 | 369 | 6.0 | 0.403 | 7.2 | LOS A | 2.7 | 69.8 | 0.32 | 0.16 | 0.32 | 33.3 |
| 14 | R2 | 243 | 5.0 | 245 | 5.0 | 0.248 | 6.1 | LOS A | 1.3 | 34.7 | 0.29 | 0.15 | 0.29 | 33.3 |
| Approach | | 710 | 4.8 | 717 | 4.8 | 0.403 | 6.8 | LOS A | 2.7 | 69.8 | 0.31 | 0.16 | 0.31 | 33.4 |
| West: Old Lynchburg Road | | | | | | | | | | | | | | |
| 5 | L2 | 283 | 2.0 | 286 | 2.0 | 0.403 | 9.3 | LOS A | 2.6 | 67.1 | 0.71 | 0.63 | 0.71 | 30.9 |
| 2 | T1 | 2 | 0.0 | 2 | 0.0 | 0.403 | 9.2 | LOS A | 2.6 | 67.1 | 0.71 | 0.63 | 0.71 | 30.8 |
| 12 | R2 | 39 | 14.0 | 39 | 14.0 | 0.403 | 10.1 | LOS B | 2.6 | 67.1 | 0.71 | 0.63 | 0.71 | 29.8 |
| Approach | | 324 | 3.4 | 327 | 3.4 | 0.403 | 9.4 | LOS A | 2.6 | 67.1 | 0.71 | 0.63 | 0.71 | 30.8 |
| All Vehicles | | 1849 | 4.8 | 1868 | 4.8 | 0.415 | 7.9 | LOS A | 3.0 | 78.2 | 0.54 | 0.41 | 0.54 | 32.8 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [5th St @ Old Lynchburg Rd 2036 Total - PM (Site Folder: General)]

Southwood Phase 2
2036 Future Conditions
Site Category: (None)
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Old Lynchburg Road | | | | | | | | | | | | | | |
| 3 | L2 | 47 | 0.0 | 49 | 0.0 | 0.358 | 7.9 | LOS A | 2.5 | 63.4 | 0.70 | 0.57 | 0.70 | 33.5 |
| 8 | T1 | 631 | 1.0 | 657 | 1.0 | 0.358 | 7.4 | LOS A | 2.6 | 66.5 | 0.69 | 0.55 | 0.69 | 33.8 |
| 18 | R2 | 2 | 0.0 | 2 | 0.0 | 0.358 | 7.0 | LOS A | 2.6 | 66.5 | 0.69 | 0.54 | 0.69 | 33.2 |
| Approach | | 680 | 0.9 | 708 | 0.9 | 0.358 | 7.5 | LOS A | 2.6 | 66.5 | 0.69 | 0.55 | 0.69 | 33.8 |
| East: County Complex | | | | | | | | | | | | | | |
| 1 | L2 | 2 | 0.0 | 2 | 0.0 | 0.062 | 7.7 | LOS A | 0.3 | 6.4 | 0.67 | 0.63 | 0.67 | 33.7 |
| 6 | T1 | 1 | 0.0 | 1 | 0.0 | 0.062 | 7.7 | LOS A | 0.3 | 6.4 | 0.67 | 0.63 | 0.67 | 33.6 |
| 16 | R2 | 28 | 0.0 | 29 | 0.0 | 0.062 | 7.7 | LOS A | 0.3 | 6.4 | 0.67 | 0.63 | 0.67 | 32.6 |
| Approach | | 31 | 0.0 | 32 | 0.0 | 0.062 | 7.7 | LOS A | 0.3 | 6.4 | 0.67 | 0.63 | 0.67 | 32.7 |
| North: 5th Street | | | | | | | | | | | | | | |
| 7u | U | 86 | 5.0 | 90 | 5.0 | 0.692 | 12.6 | LOS B | 8.0 | 200.6 | 0.41 | 0.18 | 0.41 | 31.9 |
| 7 | L2 | 5 | 0.0 | 5 | 0.0 | 0.692 | 12.5 | LOS B | 8.0 | 200.6 | 0.41 | 0.18 | 0.41 | 31.4 |
| 4 | T1 | 746 | 0.0 | 777 | 0.0 | 0.692 | 12.5 | LOS B | 8.0 | 200.6 | 0.41 | 0.18 | 0.41 | 31.3 |
| 14 | R2 | 331 | 0.0 | 345 | 0.0 | 0.352 | 7.4 | LOS A | 2.2 | 54.1 | 0.25 | 0.12 | 0.25 | 32.8 |
| Approach | | 1168 | 0.4 | 1217 | 0.4 | 0.692 | 11.0 | LOS B | 8.0 | 200.6 | 0.36 | 0.16 | 0.36 | 31.7 |
| West: Old Lynchburg Road | | | | | | | | | | | | | | |
| 5 | L2 | 308 | 1.0 | 321 | 1.0 | 0.697 | 23.2 | LOS C | 8.4 | 211.4 | 1.00 | 1.25 | 1.67 | 26.2 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.697 | 23.1 | LOS C | 8.4 | 211.4 | 1.00 | 1.25 | 1.67 | 26.2 |
| 12 | R2 | 71 | 0.0 | 74 | 0.0 | 0.697 | 23.1 | LOS C | 8.4 | 211.4 | 1.00 | 1.25 | 1.67 | 25.6 |
| Approach | | 380 | 0.8 | 396 | 0.8 | 0.697 | 23.1 | LOS C | 8.4 | 211.4 | 1.00 | 1.25 | 1.67 | 26.1 |
| All Vehicles | | 2259 | 0.6 | 2353 | 0.6 | 0.697 | 12.0 | LOS B | 8.4 | 211.4 | 0.57 | 0.47 | 0.69 | 31.2 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.