1200 MLK REDEVELOPMENT

TRAFFIC IMPACT STUDY

Prepared for:

The Town of Chapel Hill
Public Works Department - Engineering

Prepared by:

HNTB North Carolina, PC

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Raleigh, NC 27609

NCBELS License #: C-1554

June 2019

HNTB

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I. EXISTING CONDITIONS

A. Project Overview

A redevelopment of an existing site parcel, known as the 1200 MLK Redevelopment, is being proposed along NC 86 (Martin Luther King Jr. Boulevard) at its intersection with Northfield Drive in Chapel Hill, NC. The project proposes to redevelop an existing gas station/convenience mart site with a new larger 5,700 square foot facility along with a 100,000 square foot indoor storage facility. The site also currently features residential mobile homes which will continue to occupy existing areas in the rear of the property. **Figure 1** (found in ***Appendix A***) shows the general location of the site. The overall project is anticipated to be fully complete and occupied by 2021. This report analyzes the build-out scenario for the year 2022 (one year after anticipated completion), the no-build scenario for 2022, as well as 2019 existing year traffic conditions.

The proposed site concept plan shows a provision for two access driveways, one full movement and one right-turn in/right-turn out only (RIRO) that connect to NC 86 (Martin Luther King, Jr. Boulevard). The full movement driveway will form the fourth leg of the NC 86 signalized intersection with Northfield Drive. No other external vehicular access connections are proposed. The site driveways are proposed to have internal connectivity with on-site buildings and their respective parking areas as well as existing driveway aisles that serve the mobile home park. **Figure 2** displays the preliminary concept plan of the 1200 MLK Redevelopment and nearby land uses and roadways. The site is expected to provide approximately 75 parking spaces on surface lots.

B. Site Location and Study Area

This report analyzes and presents the transportation impacts that the 1200 MLK Redevelopment will have on the following intersections in the project study area:

- NC 86 (Martin Luther King, Jr. Boulevard) and Homestead Road / Church Driveway
- NC 86 (Martin Luther King, Jr. Boulevard) and Proposed Right-In/Right-Out Site Driveway
- NC 86 (Martin Luther King, Jr. Boulevard) and Northfield Drive / Proposed Main Site Driveway
- NC 86 (Martin Luther King, Jr. Boulevard) and Piney Mountain Road

The impacts of the proposed site at the study area intersections will be evaluated during the AM, noon, and PM peak hours of an average weekday. The following study is based on background traffic for the existing year, 2019, the year following the estimated site build-out (2022), as well as the estimated site-generated traffic produced by the 1200 MLK Redevelopment.

There are numerous Town-approved or anticipated future developments just beyond the immediate project study area near either the NC 86 or Homestead Road corridors that were considered to be constructed by 2022 and may generate additional background traffic. To account for this growth, four specific potential background traffic generating projects were included, along with an area-wide ambient future traffic growth percentage of 0.5 percent per year, to produce estimated 2022 background traffic volumes.

C. Site Description

The 1200 MLK Redevelopment site is currently mostly developed, with approximately 50 mobile homes located within it, and also contains the existing convenience store/service station which is currently vacant. Two existing full movement site driveways exist along NC 86 (Martin Luther King, Jr. Blvd) just

to the north and south of its existing signalized intersection with Northfield Drive. The site parcel borders residential neighborhoods to the east and south. To the north, it borders the Orange United Methodist Church. Additional multi-family residential subdivisions, commercial and institutional (Carolina North) developments are present along the NC 86 (Martin Luther King, Jr. Blvd) corridor in the project study area.

The site has frontage along NC 86 (Martin Luther King, Jr. Blvd) which will provide all vehicular access. The main full movement driveway is to be located opposite the existing Northfield Drive approach to its intersection with NC 86. Both current full movement unsignalized site driveways will be closed and a new RIRO driveway will be constructed approximately 225 feet north of the signalized intersection. Connections to existing internal local access driveways for the mobile home park will be revised to accommodate the new footprints of the proposed convenience store/gas station and private storage facility. The proposed site concept, shown in **Figure 2**, shows these features.

D. Existing and Proposed Uses in Vicinity of Site

The land uses and development in the study area are primarily low and medium density residential, with some commercial and institutional areas located along NC 86 (Martin Luther King, Jr. Blvd). The Existing Land Use Plan shown in the 2020 *Town of Chapel Hill Comprehensive Plan* and adopted June 25, 2012, indicates that the proposed site currently has portions designated as "Commercial" and "High-Density Residential". The Future Land Use Plan, that is also a part of the Town Comprehensive Plan, indicates that the parcel would continue to be considered as "Commercial", with a re-designation of "Medium Density Residential (4-8 units/acre)". It also falls into the overlay of "Chapel Hill 2020 Future Focus Discussion Area 3 – S. MLK Jr. Boulevard, Homestead to Estes Drive". The parcel is currently zoned in two designations - "R-4" – delineating it as "medium density residential with up to 10 units per acre" and "NC" – delineating the existing commercial portion as "Neighborhood Commercial".

E. Existing and Committed Surface Transportation Network

Roadways

The 1200 MLK Redevelopment project study area features a minor arterial roadway serving areas throughout the north Chapel Hill and points beyond, as well as a number of collector and local access streets. **Table 1** summarizes pertinent information on the study area roadway facilities. AADT data was taken from 2017 AADT mapping produced by the NCDOT Traffic Survey Unit. **Figure 3** shows the existing lane configuration, traffic control, and speed limits for these study area roadways. Detailed descriptions of several of the major study area roadways are as follows:

- **N.C. Highway 86 (Martin Luther King Jr, Blvd)** is a principal arterial in the study area, serving areas from I-40 (via Martin Luther King Jr. Boulevard) to downtown Chapel Hill and the US 15-501 corridor to the south. In the study area vicinity, Martin Luther King, Jr. Boulevard is a four lane divided cross-section north of Homestead Road and a five-lane undivided section (with two-way left-turn lane) south of Homestead Road. There are multiple driveway access points along the roadway and several major street intersections. No on-street parking is permitted along N.C. 86 in the project study area. Several bus stops are located along the facility. The posted speed limit is 35 mph in the study area.

Table 1. Existing Study Area Roadways

Road Name	Functional Classification*	Study Area Cross-Section	2017 AADT	Speed Limit	Sidewalk	On-Street Parking
N.C. 86 (Martin Luther King, Jr. Boulevard)	Other Principal Arterial	4 lane median divided / 5 lane undivided with TWLTL	27,000	35	Y	N
Homestead Road	Minor Arterial	2 lane undivided / 3 lane undivided with TWLTL	8,100	35	Y	N
Northfield Drive	Local	2 lane undivided	N/A	25	Y	Y
Piney Mountain Road	Local	2 lane undivided	3,300	25	Y	N
Municipal Drive	Local	2 lane undivided	N/A	25	N	N

TWLTL – Two-Way Left-turn Lane
* - As defined on the NCDOT Functional Classification web page http://ncdot.maps.arcgis.com/home/webmap/viewer.html

- **Homestead Road** is a minor arterial that connects areas of west and north Chapel Hill. In the study area, Homestead Road is an undivided facility with sections near NC 86 that feature a continuous center left-turn lane with a 35 mph speed limit. It transitions to a two-lane undivided facility west of the existing Southern Orange County Human Services Center. Several bus stops are located along the facility.
- **Northfield Drive** is a local access facility that connects local residential multi-family developments with NC 86 (Martin Luther King, Jr. Blvd). In the study area, Northfield Drive is an undivided facility with a two-lane cross-section and has a 25 mph speed limit. Sidewalk is present on the north side of the roadway and on-street parking is allowed on the south side of the roadway.
- **Piney Mountain Road** is a local access/collector facility for several residential neighborhood areas east of the NC 86 corridor. Piney Mountain Road is a two-lane undivided facility with a 35 mph speed limit. Sidewalk is present along one side of the road and no on-street parking is allowed.
- **Municipal Drive** is a local access facility that connects existing facilities associated with the Carolina North development with NC 86 (Martin Luther King, Jr. Blvd). In the study area, Municipal Drive is an undivided facility with a two-lane cross-section and has a 25 mph speed limit. No sidewalk is present along either side of the roadway and on-street parking is prohibited.

Intersections

Table 2 summarizes all three existing study area intersections, traffic control features, and pedestrian amenities at each. Laneage details and intersection turn bay lengths are also detailed on **Figure 3**.

The project study area along NC 86 (Martin Luther King, Jr. Blvd) features a mixture of signalized and unsignalized intersections. Most unsignalized intersections are either private development driveways or low volume minor access street intersections. The NC 86 (Martin Luther King, Jr. Blvd) corridor features coordinated signal operation for weekday peak hours.

Table 2. Existing Study Area Intersection Details

Intersection	Traffic Control	Signal Phases	Signal Operation	Cross walk	Ped Signals
NC 86 (Martin Luther King, Jr. Boulevard) and Homestead Road / Church Driveway	Signal	6	Coordinated	Yes (4)	Yes (4)
NC 86 (Martin Luther King, Jr. Boulevard) and Northfield Drive	Signal	2	Coordinated	Yes (2)	Yes (1)
NC 86 (Martin Luther King, Jr. Boulevard) and Piney Mountain Road / Municipal Drive	Signal	3	Coordinated	Yes (1)	Yes (1)

Ped Signals/Crosswalk (X) – Number of Approaches Featuring Signalization/Crosswalk

Bicycle Routes and Sidewalks

Specific bicycle facilities are present in the immediate study area, with striped bicycle lanes in both directions along NC 86 (Martin Luther King, Jr. Blvd) throughout the project study area. No other bicycle facilities are currently present. Pedestrian sidewalk is found along both sides of NC 86 (Martin Luther King, Jr. Blvd) through the study area. Sidewalk is also present on one side of Sweeten Creek Road and Amesbury Drive. Crosswalks and pedestrian signals are present at all three signalized intersections in the study area along NC 86 (Martin Luther King, Jr. Blvd), with an additional unsignalized crosswalk across NC 86 (Martin Luther King, Jr. Blvd) adjacent to Steeplechase Road. **Figure 4** displays a schematic of existing pedestrian and bicycle facilities in the project study area.

Transit Routes

Current Chapel Hill Transit (CHT) Routes A, HS, NS and T serve the project study area along NC 86 (Martin Luther King, Jr. Boulevard) and Homestead Road with weekday bus service (T Route also provides Saturday service). Several bus stops, with a range of amenities (shelters, benches), are present in the study area. **Table 3** details the four current CHT routes serving the study area. Most buses run on 15, 30, or hour headways during weekday peak service periods. There are bus stops immediately adjacent to the site on both sides of NC 86.

GoTriangle provides regional bus service to the immediate study area via the 420 Route that runs along NC 86 between Chapel Hill and Hillsborough. Service for this route occurs at 30 minute headways during peak weekday periods. GoTriangle also provides express bus service from Chapel Hill to Raleigh on the CRX Route that operates along NC 86 (Martin Luther King, Jr. Boulevard) in the study area on 30 minute headways during weekday peak hours.

Figure 5 displays transit routes and bus stops that currently exist in the project study area. The potential for transit trips for the 1200 MLK Redevelopment site in the following sections of this report, as the proximity and frequency of transit service directly near proposed site may account for a measurable portion of site trips.

Table 3. Current Study Area Weekday Transit Service

Route	Headways (minutes)			Study Area Stops	Destinations
	AM Peak	PM Peak	Off Peak		
Chapel Hill Transit					
A	30	30	30-60	• Southern Orange County Human Services • NC 86 Corridor • Chapel View Apartments	• Downtown Chapel Hill • UNC Campus/Hospitals Area
HS	30	30	N/A	• Southern Orange County Human Services • NC 86 Corridor Southbound	• Seawell School Road Schools • Rogers Road • Estes Drive
NS	10	10	20	• NC 86 Corridor	• Eubanks Road Park &Ride • UNC Campus/Hospitals Area • Southern Village Park and Ride
T	25	35	35	• NC 86 Corridor	• UNC Campus/UNC Hospitals • Downtown Chapel Hill • Timberlyne Shopping Ctr • E. Chapel Hill HS/Cedar Falls Pk
GoTriangle					
420	30	30	60	• NC 86 Corridor	• Hillsborough • Downtown Chapel Hill/UNC Campus
CRX	30	30	N/A	• None (Express Service)	• Downtown Chapel Hill/UNC Campus • Eubanks Park-and-Ride • Raleigh

Sources: CHT 2018 Fall Ride Guide, http://www.gotriangle.org/maps-and-schedules

Recommended/Committed Surface Transportation Improvement Projects

There are no committed/programmed NCDOT State Transportation Improvement Program (STIP) projects in the project study area included in the most recent 2018-2027 STIP. There are no Town of Chapel Hill transportation-related projects in the project study area expected to be complete by 2022. The Town is in the planning and design phase of a Bus Rapid Transit (BRT) system to be implemented along the NC 86 (Martin Luther King, Jr. Boulevard) corridor. Additional design plans and operational impact studies are expected to be completed in 2019 and the initial project schedule goal would be to open BRT service along the corridor in 2022. With no definite information on BRT alignment or impacts available at the time of this traffic impact study, it was assumed the N-S Corridor BRT impacts would occur beyond the 2022 analysis year horizon. There are no private development-related projects to improve roadway facilities in the study area that are expected to be complete by 2022.

F. Existing Traffic Conditions

Figure 6 shows the existing AM, noon, and PM peak hour traffic volumes for the study area intersections. The counts used to determine these volumes were conducted in April 2019 for all study area intersections during the weekday periods 7:00 - 9:00 AM, 11:30 AM – 1:30 PM, and 4:00 – 6:00 PM. This data, along with all turning movement count output is found in ***Appendix B***. **Table 4** provides a detailed listing of each intersection count, peak hour, and count date.

Traffic count information shows traffic flows on NC 86 (Martin Luther King, Jr. Blvd) were heavy during the AM and PM peak count periods, with heavier traffic directional distributions headed southbound in the AM peak count periods and northbound in the PM peak period. Noon peak distributions were

relatively equal by direction. Traffic on Homestead Road was moderate during the peak commuting periods. Traffic flows were light to moderate on the remaining study area roadways that function as collector or local access streets.

Table 4. Traffic Count Information

Traffic Count Location	Period Counted	Peak Hour	Date of Count
NC 86 (Martin Luther King, Jr. Boulevard) and Homestead Road / Church Driveway	AM Peak	7:30 – 8:30 AM	4/16/19
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	5:00 – 6:00 PM	
NC 86 (Martin Luther King, Jr. Boulevard) and Northfield Drive	AM Peak	7:45 – 8:45 AM	4/10/19
	Noon Peak	11:45 AM – 12:45 PM	
	PM Peak	4:45 – 5:45 PM	
NC 86 (Martin Luther King, Jr. Boulevard) and Piney Mountain Road / Municipal Drive	AM Peak	7:45 – 8:45 AM	4/10/19
	Noon Peak	11:45 AM – 12:45 PM	
	PM Peak	4:45 – 5:45 PM	

II. FUTURE 2022 BUILD-OUT YEAR CONDITIONS

A. Future Ambient Area-Wide Traffic Growth Estimation

Based on information on average daily traffic collected by the Town of Chapel Hill and the NCDOT, a yearly ambient traffic growth rate of 0.5 percent per year was used for the short-term 2022 design year capacity analyses. This rate is based on previous and anticipated growth trends for this area from Town and NCDOT average daily traffic information from the period 2003-2017 and is generally consistent with recent traffic impact studies near the project study area. Historic traffic volumes for project study area roadways do not present much, if any, growth over the last 15 years. To account for planned or on-going development in the north Chapel Hill area, additional specific background traffic generators were included as described in the following section.

B. Approved Background Development Traffic Estimation

Per information from Town of Chapel Hill staff and the Town's Development Activity Report, four Town-approved developments that are either currently under construction or are expected to be built out and fully operational by the 2022 design analysis year were studied for the inclusion of specific background traffic for this report. The four developments are listed in **Table 5**, along with their current status and impact to 2022 traffic volumes. There are additional potential development projects planned or on-going outside the 1200 MLK Redevelopment project study area that may contribute to background traffic growth but their effects by the 2022 analysis year were included in the ambient area-wide traffic growth estimation.

Figure 8A shows the relative location of the approved background developments. Total approved background traffic volumes (utilized in the 2022 analysis year scenarios) for the 1200 MLK Redevelopment study area are shown in **Figure 8B**.

Table 5. Study Area Background Development Status

Development Name	June 2019 Status	TIS Development Density	TIS Completed?	2022 Traffic Impact
Bridge Point	Approved, Not Constructed	Original SUP – 32 Townhomes 27k SF Retail	Yes – RS&H (2007)	Assume 100% built out – specific generator
Carraway Village (The Edge – 2013 Update)	Under Construction	157k SF Office 196k Shopping Ctr 431 Apartments	Yes – HNTB (2013)	Assume 100% built out – specific generator
Active Adult Housing (Overture)	Approved, Not Constructed	190 Attached Dwelling Units	Yes – HNTB (2017)	Assume 100% built out – specific generator
Town of Chapel Hill Municipal Services Campus	In Planning Process	72,800 SF Administrative Space / Offices	Yes – HNTB (2018)	Assume 100% built out – specific generator

Appendix C displays individual background traffic generator peak hour volumes estimates projected across the project study area. Traffic assignment from the four specific generator developments was estimated based on information already compiled for *The Edge Mixed-Use Development Traffic Impact Study - 2013 Update* (HNTB, 2013), *Overture Senior Residences Traffic Impact Study* (HNTB, 2017), *Town of Chapel Hill Municipal Services Campus Traffic Impact Study* (HNTB, 2018), and *Fraley Property (Bridge Point) Traffic Impact Study* (RS&H, 2007). Background traffic assignment in the project study area that was beyond the original traffic impact study areas was determined by using current turning movement peak hour volumes and engineering judgment.

C. Proposed Project Traffic

i. Trip Generation

Projected trips for the proposed residential development were generated based on the *ITE Trip Generation Manual* (Institute of Transportation Engineers, 10th Edition, 2018). Trip generation methodologies for estimated trips utilize the square footage and rate-based methodology (per NCDOT recommendations) as trip-generating variables. **Table 6** shows the number of vehicular trips that may be generated by 1200 MLK Redevelopment during the weekday daily, AM, noon, and PM peak hours of adjacent streets, based on the generation methodologies described above. A peak hour truck percentage of two percent was estimated for all site-generated traffic. Additional assumptions were necessary to estimate noon peak hour trip generation, as ITE methodologies do not include this time period in comparable data sets.

Several ITE Trip Generation Manual land use categories were reviewed for use in determining site trips from the redeveloped convenience store/gas station portion of the project. Based on the proposed size of the convenience store and number of fueling positions, the most appropriate and conservative trip generation estimates were taken from ITE Land Use Code 960 – Super Convenience Market/Gas Station. The other two potential land use categories better represent smaller sized facilities and did not have a significant number of data points that would correspond to a 5,700 square foot facility. **Table 7** highlights these details.

Table 6. Weekday Vehicle Trip Generation Summary

Land Use	ITE LUC	Units	Method	Daily			AM Peak Hour			Noon Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Super Convenience Market/Gas Station	960	5,680 SF	Rate	2,094	2,094	4,188	208	208	416	143	143	286	173	173	346
Pass-by Trips (62% AM/56% PM - Daily/Noon Using Average % of AM/PM)				1,235	1,235	2,470	129	129	258	84	84	168	97	97	194
New Trips				859	859	1,718	79	79	158	59	59	118	76	76	152
Mini-Warehouse	151	100,000 SF	Rate	76	76	152	6	4	10	7	7	14	8	9	17
TOTAL TRIPS				**2,170**	**2,170**	**4,340**	**214**	**212**	**426**	**150**	**150**	**300**	**181**	**182**	**363**
TOTAL NEW TRIPS				**935**	**935**	**1,870**	**85**	**83**	**168**	**66**	**66**	**132**	**84**	**85**	**169**
TOTAL PASS-BY TRIPS				**1,235**	**1,235**	**2,470**	**129**	**129**	**258**	**84**	**84**	**168**	**97**	**97**	**194**

Noon Peak - LUC 960 - Uses 75% of Average of AM/PM Peak Hours Noon Peak - LUC 151 - Uses Average of AM/PM Peak Hours

Table 7. ITE Land Use Comparisons – Total Raw Trips

Land Use	ITE LUC	Units	Method	Daily			AM Peak Hour			Noon Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Super Convenience Market/Gas Station	960	5,680 SF	Rate	2,094	2,094	4,188	208	208	416	143	143	286	173	173	346
Convenience Market with Gas Pumps	853	5,680 SF	Rate	1,773	1,773	3,546	115	116	231	96	96	192	140	140	280
Gas Station with Convenience Market	945	12 Fueling Pos.	Rate	1,232	1,232	2,464	76	74	150	61	59	120	86	82	168

Though not part of the estimation methodology for future site trips related to either the new convenience store/gas station or storage facility, field data was collected for the existing mobile home park that will remain part of the overall site. Trip generation for the existing mobile home park was collected at the two existing site driveways for all three peak hours studied and is expected to remain the same for the 2022 analysis year. **Table 8** highlights these details, with raw existing driveway traffic counts found in ***Appendix B***.

Table 8. Existing Site – 2019 Peak Hour Residential Trip Generation

AM Peak Hour			Noon Peak Hour			PM Peak Hour		
Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
14	46	60	8	11	19	33	22	55

ii.) Adjustments to Trip Generation Rates

Raw ITE trip generation estimates for daily and peak hour trips are typically adjusted for the following factors to reduce raw trip generation estimates to actual estimated vehicular trips produced by the 1200 MLK Redevelopment development.

a.) Internal Capture
The new land uses proposed for the 1200 MLK Redevelopment would not exhibit a high potential for internally captured peak period trips for any new on-site uses but may affect existing trip generation levels for the existing mobile home park and potentially keep some of those trips within the site. To be conservative, no additional modifications or reductions were made to trip generation results to account for internal capture.

b.) Modal Split
The study area is served by four CHT fixed bus routes with frequent existing service and bus stops along NC 86 (Martin Luther King, Jr. Blvd) with connectivity to trip attractions in downtown Chapel Hill. Pedestrian and bicycle facilities exist in the study area but currently lack connectivity along NC 86 to the site parcel. To be conservative, no quantitative reductions in vehicular trips were made using these modes. However, it is recognized that some peak period trip-making will occur with the availability and potential future connectivity provided for non-motorized transportation.

c.) Pass-by Trips
Pass-by trips were accounted for in this study using approved NCDOT and ITE Trip Generation Manual data and methods for the convenience store/gas station land use, since this element of the proposed 1200 MLK Redevelopment is a typical pass-by trip generator.

d.) Trip Generation Budget
Current plans for 1200 MLK Redevelopment are for the project to be built in a single phase over the next several years. This report considers the full build-out of the entire development and retention of the existing residential land use and field collected peak hour trip-making patterns from it, so no trip generation budget is necessary for future scenarios if the redevelopment is built to the size and intensity as indicated on the site concept plans.

iii.) Trip Distribution

Trip distribution for site-related traffic was based existing daily and peak hour traffic patterns to determine the directional peak hour characteristics of traffic to and from the site from the major study area thoroughfares and was calculated separately for new site trips and "pass-by" site trips. For new site trips, small percentages of local trips to/from lower volume collector and residential streets were estimated, as the possibility exists for a portion of trip-making to occur to/from these local streets to/from the new convenience store/gas station portion of the redevelopment. Basic distribution estimates for site traffic flow utilized existing peak hour turning movement counts and overall comparison to local and regional trip attractors. Distribution estimates for the two site driveways were based on assumptions of utilization of the closest driveway, proposed access limitations, and internal driveway circulation throughout the site parcel. **Figures 10A** presents the projected trip distribution traffic percentages for new site trips for the proposed site in 2022.

For pass-by site trips, distribution percentages were directly related to the directional peak distribution of traffic passing by the site in each peak hour based on existing 2019. **Figure 11A** presents the projected trip distribution traffic percentages for pass-by traffic for the proposed site in 2022. ***Appendix C*** contains the spreadsheet calculations for all peak hour traffic volume development analyzed in this study.

iv.) Trip Assignment

Figures 10B and 11B show the corresponding 1200 MLK Redevelopment site traffic volumes distributed on the 2022 study area networks for new site trips and pass-by site trips, respectively. Total volumes into and out of the site correspond to total external vehicular trips generated, based on the trip generation methodology developed previously.

D. Future Traffic Forecasts with the Proposed Development

Figure 12 displays the 2022 Build-out+1 year projected study area traffic volumes with site traffic added that includes the impacts of new site trips and pass-by site trips. These traffic volumes represent the aggregate traffic growth over existing traffic volumes for a) ambient traffic growth, b) specific background development traffic generation from those developments outside the project study area, and c) estimated site traffic assignment from the 1200 MLK Redevelopment. ***Appendix C*** contains all the peak hour scenario volume development spreadsheets used in the estimation of 2022 traffic volumes for all scenarios analyzed in this study.

III. IMPACT ANALYSES

A. Peak Hour Intersection Level of Service Analysis

i.) Methodology

Evaluation of traffic operations on suburban arterial, collector, and local roadway facilities is most effective through the determination of level of service (LOS) criteria. The concept of level of service correlates qualitative aspects of traffic flow to quantitative terms. This enables transportation professionals to take the qualitative issues, such as congestion and substandard geometrics, and translate them into measurable quantities, such as operating speeds and vehicular delays. The 2016 *Highway Capacity Manual Version 6* characterizes level of service by letter designations A through F. Level of service A represents ideal low-volume traffic operations, and level of service F represents

over-saturated high-volume traffic operations. Level of service is measured differently for various roadway facilities, but in general, level of service letter designations are described in **Table 9**.

Table 9. Level of Service (LOS) Characteristics

Level of Service Description	Per Vehicle Delay at Signal	Per Vehicle Delay at Stop Sign
LOS A ➢ Free flow ➢ Freedom to select desired speed and to maneuver is extremely high ➢ General level of comfort and convenience for motorists is excellent	**< 10.0 sec**	**< 10.0 sec**
LOS B ➢ Stable flow ➢ Other vehicles in the traffic stream become noticeable ➢ Reduction in freedom to maneuver from LOS A	**10.0 – 20.0 sec**	**10.0 – 15.0 sec**
LOS C ➢ Stable flow ➢ Maneuverability and operating speed are significantly affected by other vehicles ➢ General level of comfort and convenience declines noticeably	**20.0 – 35.0 sec**	**15.0 – 25.0 sec**
LOS D ➢ High density but stable flow ➢ Speed/freedom to maneuver are very restricted ➢ General level of comfort / convenience is poor ➢ Small increases in traffic will generally cause operational problems	**35.0 – 55.0 sec**	**25.0 – 35.0 sec**
LOS E ➢ Unstable flow ➢ Speed reduced to lower but relatively uniform value ➢ Volumes at or near capacity level ➢ Comfort and convenience are extremely poor ➢ Small flow increases or minor traffic stream disturbances will cause breakdowns	**55.0 – 80.0 sec**	**35.0 – 50.0 sec**
LOS F ➢ Forced or breakdown flow ➢ Volumes exceed roadway capacity ➢ Formation of unstable queues ➢ Stoppages for long periods of time because of traffic congestion	**> 80.0 sec**	**> 50.0 sec**

The minimum acceptable peak hour intersection level of service established for this project is LOS D for signalized intersections or LOS E for critical movements at unsignalized intersections, or no increase in delay for signalized intersections operating below LOS D or unsignalized intersection critical movements operating below LOS E without the inclusion of site traffic. The following five conditions were evaluated:

Condition 1 - Existing Traffic

Condition 2 - 2022 Traffic without Site Traffic

Condition 3 - 2022 Traffic with Site Traffic Volumes Added

Condition 4 - 2022 Traffic with Site Traffic Volumes and Necessary Mitigation Improvements

The *Synchro Professional Version 10* operations analysis software was used to analyze peak hour conditions at signalized intersections. Synchro was also used to analyze peak hour conditions at

unsignalized intersections, through the use of its HCM 2010 two-way stop controlled output function. The methodology of evaluating each condition for signalized intersections is presented below:

- **Condition 1** – Use current Town of Chapel Hill data for the cycle length, splits and offsets of individual signalized intersections and report LOS and delay values from Synchro.

- **Conditions 2-3** – Reoptimize the cycle lengths and splits of individual intersections in Synchro, if existing timing data does not provide adequate overall intersection LOS. Adjust cycle lengths, splits, and offsets, if necessary, if the signal is currently operating in a coordinated system. The optimized signal timing information will be held constant for both Conditions, to provide a means to compare effects of the proposed site traffic.

- **Condition 4** – Optimize coordinated traffic signals for effects of recommended mitigation strategies that change existing/committed changes to lane geometrics. Evaluate the potential for different signal phasing schemes (left-turn lag phases, for example). Retain existing split minimums and any pedestrian timing values. Recommendations, if warranted, will be made to obtain at least LOS D for the intersection as a whole.

The net effect of this process is that direct comparisons, by movement, of delay and LOS between each of the four conditions are impossible because splits and cycle lengths can and do change between conditions. The pertinent statistic of this analysis is the *overall intersection level of service and delay*. Improvements to deficient intersections in Conditions 3 and 4 were made by first attempting to adjust signal operations via changes in cycle lengths, splits and/or with acceptable adjustments to signal phasing. If that did not produce satisfactory results for all intersections, geometric improvements to improve intersection capacity were considered for the deficient intersections. ***Appendix D*** contains the Synchro signalized intersection output for all four conditions (where applicable).

Unsignalized intersections were analyzed using HCM methodologies. Their results were evaluated on a per-movement basis, since HCM methods do not produce an overall intersection level of service for unsignalized intersections. Thus, intersections with deficient (LOS F) movements in Condition 2 would need to be evaluated for improvements in Condition 3. This methodology differs from signalized intersections, where one or more movements at an intersection may be deficient in Condition 2, but as long as the overall intersection level of service does not fall below LOS D, no intersection improvements may be deemed necessary. ***Appendix E*** contains the Synchro 2010 HCM unsignalized output for all stop-controlled intersections studied.

ii.) 2019 Existing Conditions Results

Table 10 presents the results for the existing year traffic conditions as compiled from field data. The table lists LOS and delay values for those movements that are in existence at this time. Currently, all study area signalized intersections operate at an overall acceptable level of service for all of the analyzed 2019 peak hours.

Table 10. Capacity Analysis Results for Study Area Intersections
Condition 1 – 2019 Existing Traffic

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95th% Queue Length (Ft)			Existing Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
NC 86 (Martin Luther King, Jr. Blvd) and Homestead Road / Church Entrance	C	C	C	24.5	23.2	21.8				
EB LT	***E***	***E***	***E***	***67.8***	***60.7***	***73.8***	**200**	125	**175**	125
EB LT-THRU	***E***	***E***	***E***	***68.2***	***61.0***	***73.0***	200	125	175	
EB RT	***E***	D	D	***74.0***	48.9	48.7	300	200	225	550
WB LT	***E***	D	***E***	***57.0***	54.5	***62.0***	25	25	25	150
WB LT-THRU	***E***	D	***E***	***57.0***	54.2	***62.5***	25	25	25	
WB RT	A	C	D	0.0	33.6	47.5	0	25	25	75
NB LT	***E***	***E***	***E***	***69.2***	***58.7***	***74.9***	100	100	225	400 D
NB THRU-RT	A	B	A	6.2	10.3	6.2	150	225	225	
SB LT	A	A	A	6.1	6.9	6.2	25	25	25	225
SB THRU	B	B	B	14.4	14.2	14.9	475	250	400	
SB RT	A	A	A	2.9	3.9	4.6	50	50	100	325
NC 86 (Martin Luther King, Jr. Blvd) and Northfield Drive	A	A	A	3.6	4.2	9.9				
EB LT-RT	***E***	***E***	***F***	***74.1***	***66.0***	***85.3***	100	75	150	
NB LT	A	A	A	0.6	2.3	4.3	0	25	25	CTL
NB THRU	A	A	B	1.7	2.2	10.2	25	100	750	
SB THRU-RT	A	A	A	1.3	1.7	2.5	25	75	50	
NC 86 (Martin Luther King, Jr. Blvd) and Piney Mountain Road / Municipal Drive	B	A	B	12.7	8.9	12.1				
EB LT	A	***E***	***E***	0.0	***65.6***	***63.8***	0	25	25	100
EB THRU-RT	***E***	***E***	***E***	***67.8***	***69.8***	***70.5***	50	50	50	
WB LT	***E***	***E***	***E***	***60.8***	***65.7***	***66.2***	100	75	100	250 D
WB THRU-RT	***E***	***E***	***E***	***61.6***	***66.6***	***67.0***	100	75	100	200
NB LT	A	A	A	7.0	4.5	5.5	25	25	25	CTL
NB THRU-RT	A	A	A	6.9	4.7	9.4	250	175	550	
SB LT	A	A	B	4.5	4.5	18.7	25	25	50	CTL
SB THRU-RT	A	A	A	7.8	4.8	5.3	175	175	125	

N/A - Not Applicable, i.e. movement is non-existent or overall intersection values are not reported for unsignalized intersections
BOLD/ITALICS – Movement or overall intersection is over Town TIS Guidelines threshold capacity
PURPLE – Maximum Queue May Exceed Storage Bay Distance

iii.) 2022 No-Build Scenario (Condition 2) Results

Table 11 presents the results for the 2022 Build-out+1 analysis year estimated traffic conditions without the impacts of site-related traffic. This analysis includes ambient area-wide growth over the next three years, specific background generator traffic growth, and assumes no roadway geometric or signal timing improvements to the 2019 transportation network.

During Condition 2 - 2022 Without Site Traffic, delays marginally increase for most study area intersections and individual intersection movements but do not cause any operational deficiencies for the three signalized intersections in the project study area in any of the three peak hours analyzed.

Table 11. Capacity Analysis Results for Study Area Intersections
Condition 2 – 2022 Traffic Without Site

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95th% Queue Length (Ft)			Existing Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
NC 86 (Martin Luther King, Jr. Blvd) and Homestead Road / Church Entrance	C	C	C	26.2	24.9	24.1				
EB LT	***E***	***E***	***E***	***67.7***	***61.8***	***73.6***	**200**	**150**	**200**	125
EB LT-THRU	***E***	***E***	***E***	***68.0***	***61.5***	***72.6***	200	150	200	
EB RT	***E***	D	D	***76.7***	50.2	47.3	325	225	250	550
WB LT	***E***	D	***E***	***57.0***	54.5	***62.0***	25	25	25	150
WB LT-THRU	***E***	D	***E***	***57.0***	54.2	***62.5***	25	25	25	
WB RT	A	C	D	0.0	32.9	47.0	0	25	25	75
NB LT	***E***	***E***	***E***	***68.9***	***58.0***	***74.5***	125	100	250	400 D
NB THRU-RT	A	B	A	6.6	11.4	8.4	150	275	300	
SB LT	A	A	A	6.6	7.7	7.1	25	25	25	225
SB THRU	B	B	B	16.6	16.6	17.9	550	300	500	
SB RT	A	A	A	3.2	4.4	5.4	75	50	125	325
NC 86 (Martin Luther King, Jr. Blvd) and Northfield Drive	A	A	B	3.6	4.0	10.6				
EB LT-RT	***E***	***E***	***F***	***74.3***	***66.0***	***85.4***	100	75	150	
NB LT	A	A	A	0.7	2.4	4.5	0	25	25	CTL
NB THRU	A	A	B	1.8	2.4	11.8	25	125	925	
SB THRU-RT	A	A	A	1.3	1.7	2.5	25	100	50	
NC 86 (Martin Luther King, Jr. Blvd) and Piney Mountain Road / Municipal Drive	B	A	B	12.7	8.7	13.0				
EB LT	A	***E***	***E***	0.0	***65.6***	***63.8***	0	25	25	100
EB THRU-RT	***E***	***E***	***E***	***67.8***	***69.8***	***70.5***	50	50	50	
WB LT	***E***	***E***	***E***	***60.8***	***65.7***	***66.3***	100	75	100	250 D
WB THRU-RT	***E***	***E***	***E***	***61.6***	***66.5***	***67.2***	100	75	100	200
NB LT	A	A	A	7.4	4.6	5.7	25	25	25	CTL
NB THRU-RT	A	A	B	7.3	5.0	11.2	275	200	700	
SB LT	A	A	D	4.4	4.7	41.5	25	25	125	CTL
SB THRU-RT	A	A	A	8.2	5.2	5.2	175	200	150	

N/A - Not Applicable, i.e. movement is non-existent or overall intersection values are not reported for unsignalized intersections
BOLD/ITALICS – Movement or overall intersection is over Town TIS Guidelines threshold capacity
PURPLE – Maximum Queue May Exceed Storage Bay Distance

iv.) 2022 Build Scenario (Condition 3) Results

Table 12 presents results for 2022 Build-out+1 year estimated traffic conditions, including impacts of site-related traffic with the current site concept plan. In general, the addition of site-related traffic will marginally increase delays at existing intersections and is not expected to cause additional intersections or critical intersection stop-controlled movements to drop to deficient levels in the 2022 analysis year. The existing traffic signal at NC 86 and Northfield Drive was modified to include the westbound signalized approach from the Main Site Driveway, which also included assumed phasing improvements for protected left-turn signal phasing in the southbound direction and optimizing splits and offsets at the intersection for all three peak hours. Maximum estimated queues at this intersection for the new westbound movement exiting the site may exceed a single lane queue storage for the proposed driveway throat length.

Table 12. Capacity Analysis Results for Study Area Intersections
Condition 3 – 2022 Traffic With Site

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95th% Queue Length (Ft)			Existing & Proposed Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
NC 86 (Martin Luther King, Jr. Blvd) and Homestead Road / Church Entrance	C	C	C	25.6	24.0	23.5				
EB LT	***E***	***E***	***E***	67.7	61.8	73.6	**200**	**150**	**200**	125
EB LT-THRU	***E***	***E***	***E***	68.0	61.5	72.6	200	150	200	
EB RT	***E***	D	D	77.2	50.7	47.8	325	225	275	550
WB LT	***E***	D	***E***	57.0	54.5	62.0	25	25	25	150
WB LT-THRU	***E***	D	***E***	57.0	54.2	62.5	25	25	25	
WB RT	A	C	D	0.0	32.9	47.0	0	25	25	75
NB LT	***E***	***E***	***E***	66.4	77.5	75.2	125	125	225	400 D
NB THRU-RT	A	A	A	4.9	3.7	6.8	125	75	325	
SB LT	A	A	A	6.7	7.7	7.2	25	25	25	225
SB THRU	B	B	B	17.2	16.9	18.3	575	325	525	
SB RT	A	A	A	3.3	4.5	5.5	75	50	125	325
NC 86 (Martin Luther King, Jr. Blvd) and RIRO North Site Driveway	N/A	N/A	N/A	N/A	N/A	N/A				
WB RT	B	B	D	14.4	12.8	26.6	25	25	50	**50**
NC 86 (Martin Luther King, Jr. Blvd) and Northfield Drive / Main Site Driveway	B	B	B	19.6	15.4	18.8				
EB LT-**THRU**-RT	D	D	***E***	44.8	49.6	***62.5***	100	100	175	
WB LT-THRU-RT	***E***	***E***	***F***	***74.3***	***66.0***	***96.1***	**250**	150	**250**	**175**
NB LT	A	B	A	9.6	11.5	3.9	25	25	25	CTL
NB THRU-**RT**	B	B	B	18.6	14.9	15.0	500	325	625	
SB LT	D	D	***F***	52.2	39.7	***82.1***	175	100	200	**CTL**
SB THRU-RT	A	A	A	7.8	5.2	6.6	175	125	150	
NC 86 (Martin Luther King, Jr. Blvd) and Piney Mountain Road / Municipal Drive	B	A	B	11.6	8.7	12.9				
EB LT	A	***E***	***E***	0.0	***65.6***	***63.8***	0	25	25	100
EB THRU-RT	***E***	***E***	***E***	***67.8***	***69.8***	***70.5***	50	50	50	
WB LT	***E***	***E***	***E***	***60.8***	***65.7***	***66.3***	100	75	100	250 D
WB THRU-RT	***E***	***E***	***E***	***62.3***	***66.8***	***67.7***	100	75	100	200
NB LT	A	A	A	7.6	4.6	5.8	25	25	25	CTL
NB THRU-RT	A	A	B	7.4	5.1	11.6	300	225	725	
SB LT	A	A	D	2.8	4.7	51.1	25	25	125	CTL
SB THRU-RT	A	A	A	6.0	5.3	4.1	75	225	175	

N/A - Not Applicable, i.e. movement is non-existent or overall intersection values are not reported for unsignalized intersections
BOLD/ITALICS – Movement or overall intersection is over Town TIS Guidelines threshold capacity
BLUE - New or Modified Movements Committed in Build Scenario **PURPLE** – Maximum Queue May Exceed Storage Bay Distance

v.) 2022 Build Scenario With Mitigation (Condition 4) Results

Table 13 presents results for 2022 Build-out+1 year estimated traffic conditions, including impacts of site-related traffic with a revision current site concept plan to mitigate potential queue issues for the westbound approach from the Main Site Driveway onto NC 86. This approach was widened to include a left-turn lane with 150 feet of storage and a shared through/right-turn lane with the intent to accommodate more queue storage. Signal timings were updated to reflect the geometric change, though no phasing changes were assumed. The mitigation improvement has minor beneficial effects

on overall intersection operations but does reduce the maximum anticipated queues to levels where queues would not likely extend into the site's parking area or vehicle fueling area.

Table 13. Capacity Analysis Results for Study Area Intersections
Condition 4 – 2022 Traffic With Site and Mitigation

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95th% Queue Length (Ft)			Existing & Proposed Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
NC 86 (Martin Luther King, Jr. Blvd) and Northfield Drive / Main Site Driveway	B	B	B	16.9	14.1	16.7				
EB LT-THRU-RT	D	E	***E***	50.6	55.2	***71.6***	100	100	175	
WB LT	***E***	***E***	***F***	75.5	65.6	***98.7***	**200**	125	**175**	**150**
WB THRU-RT	D	D	***E***	48.7	49.3	***56.0***	100	75	100	**175**
NB LT	A	A	A	8.0	9.9	3.3	25	25	25	CTL
NB THRU-RT	B	B	B	15.4	13.0	12.5	475	300	625	
SB LT	D	D	***E***	50.3	39.7	***74.0***	175	100	200	CTL
SB THRU-RT	A	A	A	5.7	4.4	5.7	150	100	125	

N/A - Not Applicable, i.e. movement is non-existent or overall intersection values are not reported for unsignalized intersections
BOLD/ITALICS – Movement or overall intersection is over Town TIS Guidelines threshold capacity
BLUE - New or Modified Movements Committed in Build Scenario **PURPLE** – Maximum Queue May Exceed Storage Bay Distance

B. Access Analysis

Vehicular site access is to be accommodated at two proposed access driveways connecting to NC 86 (Martin Luther King, Jr. Blvd). The southern (main) site driveway will connect as a fourth leg to the NC 86 (Martin Luther King, Jr. Blvd) signalized intersection with Northfield Drive. The other driveway connection will be a limited access RIRO driveway located to the north of the signalized intersection. The main driveway connection would have a throat length of approximately 175 feet and the RIRO driveway would have a throat length of 50 feet prior to internal parking lot connections. Throat lengths are acceptable, based on 50 foot minimum throat length standards found on Page 69 of the 2019 *Town of Chapel Hill Public Works Design Manual*. 2003 *NCDOT Policy on Street and Driveway Access to North Carolina Highways* throat length recommendations are 100 feet, which is not provided for the RIRO driveway.

The distance between the proposed driveway connections is approximately 225 feet. Driveway connection separations from an intersection are acceptable, based on recommendations of 100 foot minimum corner clearance as set forth in the 2003 *NCDOT Policy on Street and Driveway Access to North Carolina Highways* and the recommended 150 foot spacing between a driveway and an intersection along arterial roadways found in Table 3.2 – Street Standards in the Town Design Manual. The driveway separation distance is less than the 500 foot minimum along arterial streets specified in the Town Design Manual, but the proposed design improves the current parcel driveway access alignment, where the two existing driveways are full access, separated by only 125 feet and do not align with the current signalized intersection at Northfield Drive.

Access for pedestrians and bicycles is lacking connectivity in the project study area. Sidewalk is present along the NC 86 (Martin Luther King, Jr. Blvd) corridor, but not continuously along both sides of the road south of Homestead Road. Bicycle lanes are present along the segment of NC 86 (Martin Luther King, Jr. Blvd) in the project study area north of Homestead Road, but no other bicycle facilities exist in the project study area.

C. Signal Warrant Analysis

Based on projected 2022 traffic volumes and proposed access plans, no unsignalized study area intersection with NC 86 (Martin Luther King, Jr. Boulevard) would warrant the installation of a traffic signal, based on the methodology found in the *2009 Manual on Uniform Traffic Control Devices (MUTCD).*

D. Sight Distance Analysis

In general, sight distance issues entering/exiting the proposed 1200 MLK Redevelopment driveways would be minimal, considering the fact that NC 86 (Martin Luther King, Jr. Boulevard) has little to no horizontal or vertical curvature in the vicinity of the two proposed access locations, giving entering and exiting traffic adequate sight distance in both directions.

E. Crash Analysis

Data from the NCDOT Traffic Safety Unit was extracted from the TEAAS crash database software for the five year period 4/1/2014 to 3/31/2019 for the project study area. This information included crash segment data along NC 86 (Martin Luther King, Jr.) Boulevard from Homestead Road to Piney Mountain Road/Municipal Drive. Raw corridor segment crash data is located in ***Appendix F*** and results are shown in **Tables 14 and 15**.

NC 86 (Martin Luther King, Jr.) Boulevard Corridor

Table 14 presents a comparison between the NC 86 (Martin Luther King, Jr.) Boulevard corridor study area crash rates and the latest North Carolina statewide rates for the period 2015-2017 (compiled by NCDOT Traffic Safety Unit). Overall, the crash rate along NC 86 (Martin Luther King, Jr.) Boulevard in the project study area between Homestead Road and Piney Mountain Road was generally lower than statewide averages for comparable facilities for the crash characteristic categories shown. Rear-end crashes were the most common crash type – with 38 of the 73 crashes reported as rear-end collisions along the 0.77 mile segment. The rear-end collisions are indicative of a corridor with high traffic volumes throughout the day. Remaining notable crash types were side-swipe crashes (8) and run-off road (9). One pedestrian crash was recorded. Spatial distribution of crashes along the corridor is concentrated at the signalized intersection, with remaining crashes fairly evenly distributed at lower volume intersections with minor streets or commercial access driveways along the corridor.

Table 14. Study Area Crash Rate Comparison
NC 86 (Martin Luther King, Jr. Boulevard) Corridor

Statistic	Crashes Per 100 Million Vehicle Miles	
	NC 86 (Martin Luther King, Jr.) Boulevard Homestead Road to Piney Mountain Road	NC Statewide Averages* Four-Lane Undivided with Center Left-Turn Lane
Total Crash Rate	198.94	299.06
Fatal Crash Rate	0.00	1.39
Non-Fatal (Injury) Crash Rate	76.31	83.67
Night Crash Rate	27.25	58.08
Wet Pavement Crash Rate	32.70	44.60

* - Data for Urban North Carolina Routes

Study Area Intersections

In addition to the crash comparison for the NC 86 (Martin Luther King, Jr.) Boulevard corridor segment, individual intersection crash data in the vicinity of the proposed site for the same five year period was compiled from the segment data and results are shown in **Table 15**. The crash data reveals that the majority of crashes are clustered at the three signalized intersections. However, comparative to other high volume signalized intersections in Chapel Hill, the total number of crashes is generally lower than other similar locations in Town, based on information compiled for previous recent traffic impact studies for other developments.

Table 15. Study Area Intersection Crash Summary

Intersection	Number of Total Crashes
NC 86 (Martin Luther King, Jr.) Boulevard & Homestead Road	19
NC 86 (Martin Luther King, Jr.) Boulevard & Northfield Drive	14
NC 86 (Martin Luther King, Jr.) Boulevard & Critz Drive	4
NC 86 (Martin Luther King, Jr.) Boulevard & Ashley Forest Drive	4
NC 86 (Martin Luther King, Jr.) Boulevard & Timber Hollow Drive	1
NC 86 (Martin Luther King, Jr.) Boulevard & Piney Mountain Road / Municipal Drive	11

F. Other Transportation-Related Analyses

Other transportation-related analyses relevant to the 2001 Town of Chapel Hill Guidelines for the preparation of Traffic Impact Studies were completed as appropriate. The following topics listed in **Table 16** are germane to the scope of this study.

Table 16. Other Transportation-Related Analyses

Analysis	Comment
Turn Lane Storage Requirements	Storage bay lengths at study area intersections were analyzed using Synchro and HCM 95th percentile (max) queue length estimates for all analyzed scenarios. At the intersection of NC 86 (Martin Luther King, Jr. Blvd) and Northfield Drive/Main Site Driveway, projected 95th percentile queue lengths may exceed the driveway stem length in the 2022 AM and PM peak hours for with site redevelopment. A recommended improvement to provide separate left-turn and through/right-turn lanes would mitigate this issue.
Appropriateness of Acceleration / Deceleration Lanes	The site concept plan shows no specific related to new acceleration/deceleration lanes along NC 86. It is assumed that the existing two-way center left-turn lane would be utilized for southbound left-turns into the site at the Northfield Drive intersection. Auxiliary turn lanes are provided at most locations along NC 86 (Martin Luther King, Jr. Blvd) and at select minor street approaches. No other specific acceleration or deceleration lane issues were analyzed in the project study area
Pedestrian and Bicycle Analysis	Existing pedestrian access and connectivity currently lacking along NC 86 on the east side of the road adjacent to the site, but some pedestrian connections and crosswalk/pedestrian signals are present along the NC 86 corridor. Striped bicycle lanes are present along the facility, but only to the north of Homestead Road. Pedestrian sidewalk is shown along a portion of the site frontage with NC 86, but additional sidewalk connections should be considered along the entirety of the site frontage as well as to areas internal to the site to connect to the mobile home park and directly to the convenience store site.
Public Transportation Analysis	Public transportation service to the study area, and to the proposed site is excellent, with bus stops directly serving the site parcel and multiple local CHT T bus routes along NC 86 (Martin Luther King, Jr. Blvd) in both directions proximate to the site.

G. Special Analysis/Issues Related to Project

Based on discussions with Town of Chapel Hill staff, there are no special issues or analyses beyond the ones already discussed for this proposed site.

IV. MITIGATION MEASURES / RECOMMENDATIONS

A. Planned Improvements

There are no planned transportation improvement projects by NCDOT or the Town of Chapel Hill expected to be complete between 2019 and 2022 in the immediate project study area. The Town is currently moving forward on planning for bus rapid transit (BRT) service along the NC 86 corridor but no specific changes or improvements to the facility were analyzed for this study.

B. Background Committed Improvements

There are no specific transportation network improvements to study area roadway intersections related to background private development projects that are expected to be completed between 2019 and 2022.

C. Applicant Committed Improvements

Based on the preliminary site plans and supporting development information provided, the Applicant is proposing to reconfigure driveways that access the site. The two existing full access driveways will be closed, and a full access driveway is proposed to align with Northfield Drive and utilize the existing traffic signal. A second proposed RIRO driveway is to be located to the north of the signalized intersection. Additional reconfiguration of existing internal driveways that serve the mobile home park are also proposed to allow better traffic circulation throughout the site development. The two proposed site driveways along NC 86 and initial laneage assumptions are schematically shown in **Figure 13**, based on the preliminary concept plans shown in **Figure 2**.

D. Necessary Improvements

Based on traffic capacity analyses for the 2022 design year, and analyses of existing study area turning bay storage lengths and site access, the following improvements are recommended as being necessary for adequate transportation network operations (see **Figure 13**).

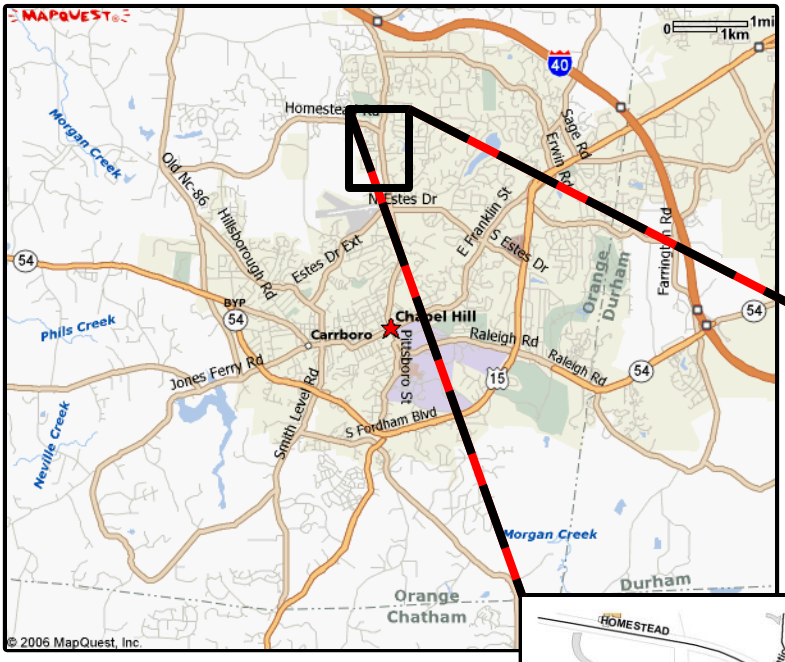
1) To provide adequate traffic operations and improve pedestrian safety and connectivity, the existing traffic signal at NC 86 and Northfield Drive should be upgraded to allow the Main Site Driveway to operate as a concurrent signal phase with Northfield Drive. The southbound and westbound approaches at the intersection include crosswalk and pedestrian signalization. The northbound and southbound left-turn lanes along NC 86 should operate with protected+permitted signal phasing. The signal should be retimed for all peak periods to maximize efficiency along the NC 86 corridor. <u>These improvements are recommended for the 1200 MLK Redevelopment project.</u>

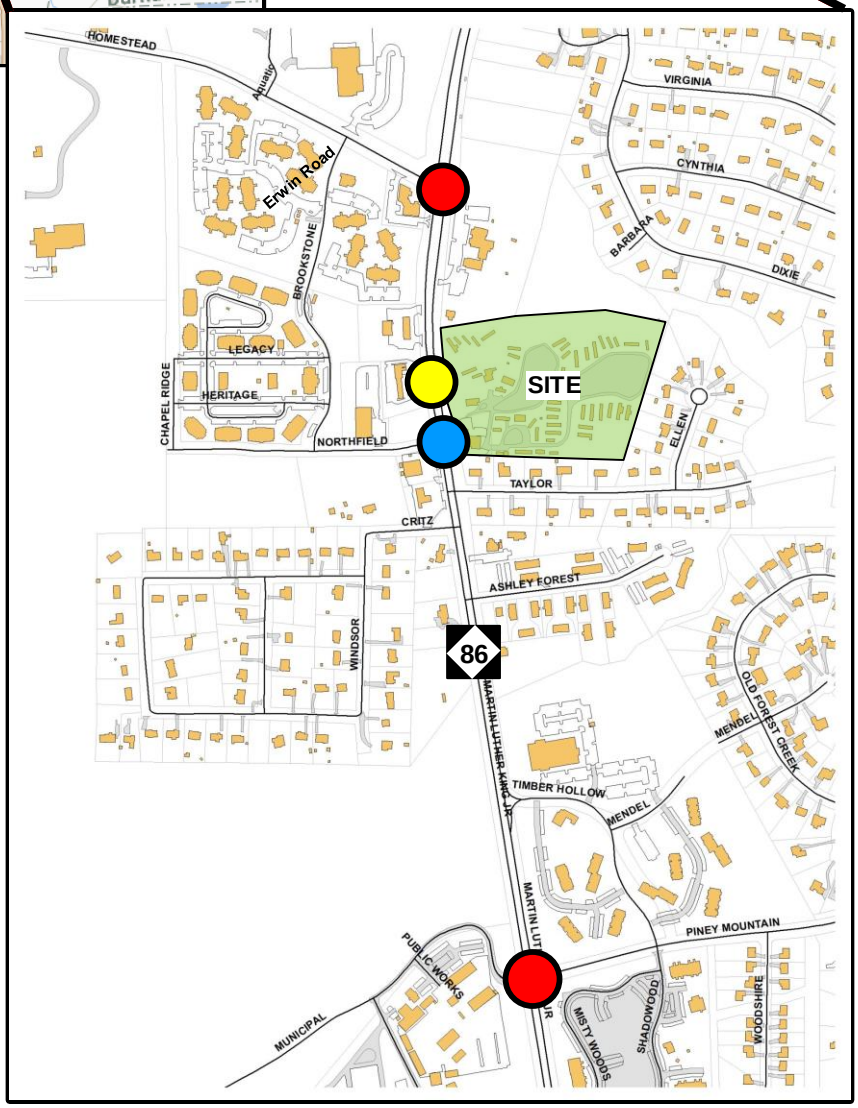
2) Capacity analysis results indicate that a single westbound lane exiting at the Main Site Driveway may have maximum queues that exceed the proposed driveway stem length in 2022 AM and PM peak hours. To mitigate this issue, separate westbound left-turn and through/right-turn lanes are recommended to improve overall queue storage. <u>This improvement is recommended for the 1200 MLK Redevelopment project.</u>

3) The concept plan design for the RIRO driveway along NC 86 has limited driveway stem length and the nearby driveway aisle along the frontage of the convenience store may cause safety issues with turning traffic into/exiting this driveway in the vicinity of the external RIRO driveway. To mitigate this issue, extension of the proposed concrete median island at the RIRO driveway past the adjacent internal driveway is recommended, along with making this driveway aisle a one-way southbound movement. **Figure 14** schematically shows these proposed changes. This improvement is recommended for the 1200 MLK Redevelopment project.

4) An extension of sidewalk along the site frontage with NC 86 north of the proposed RIRO Driveway will allow better pedestrian connectivity along the corridor. In addition, provision of a sidewalk connection from the NC 86 sidewalk directly to the convenience store would improve safety. This improvement is recommended for the 1200 MLK Redevelopment project.

Appendix A – Figures





LEGEND

- = Existing Building Footprint
- = Proposed Site Parcel
- = Existing Study Area Intersection
- = Proposed Full Access Site Driveway
- = Proposed Future RIRO Driveway

N

NOT TO SCALE

HNTB

TOWN OF CHAPEL HILL

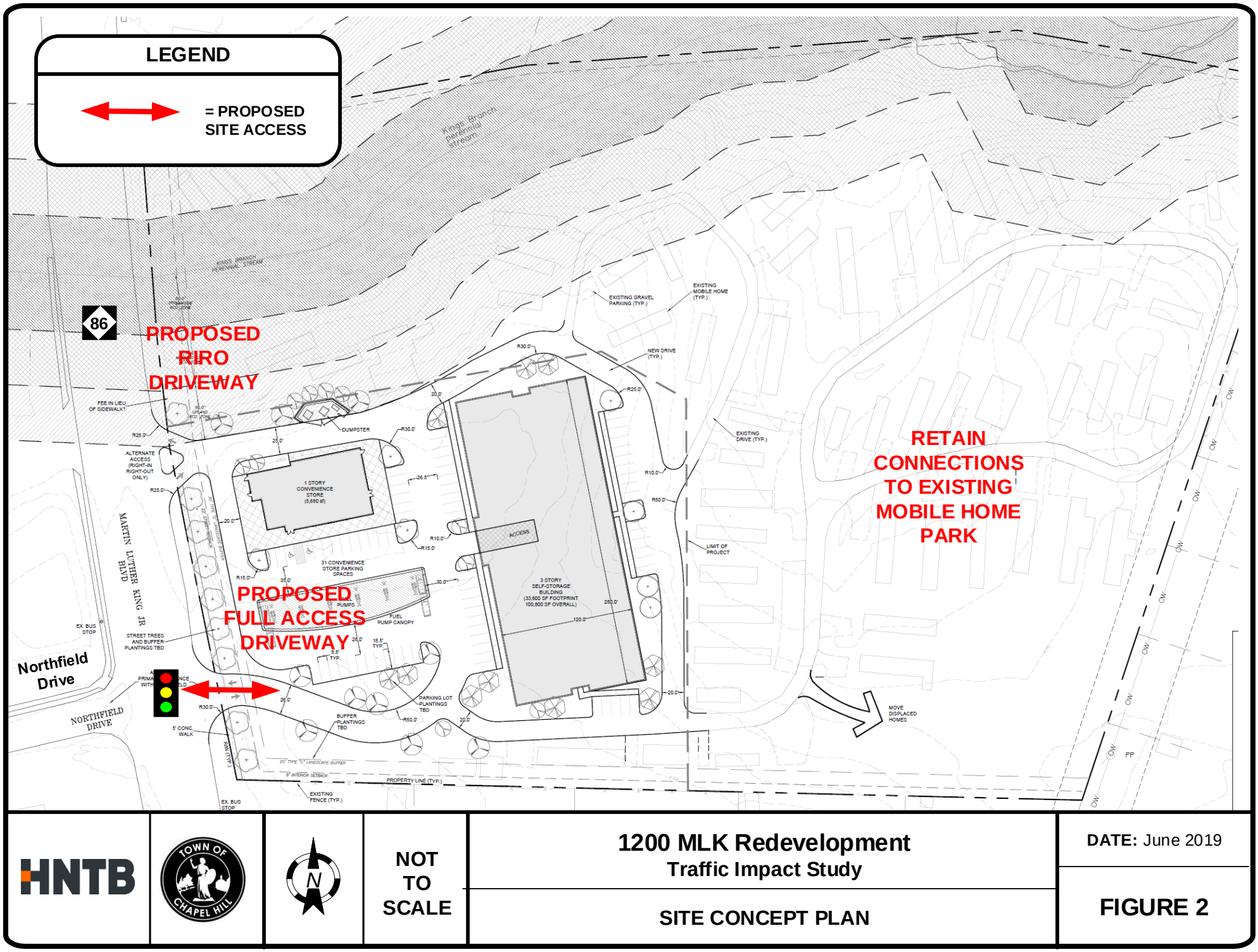
1200 MLK Redevelopment

Traffic Impact Study

DATE: June 2019

PROJECT STUDY AREA MAP

FIGURE 1



HNTB

TOWN OF CHAPEL HILL

N

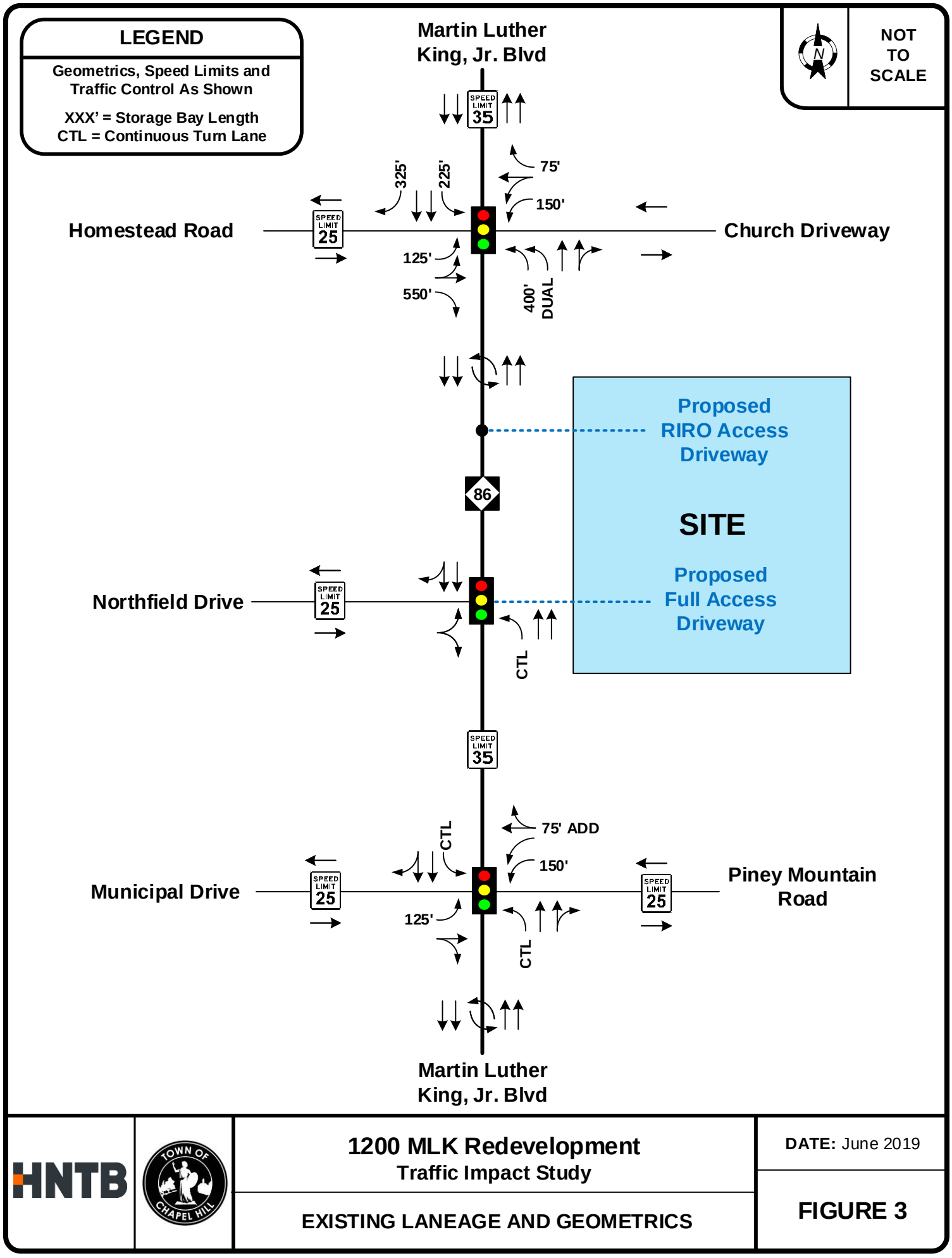
NOT TO SCALE

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

SITE CONCEPT PLAN

FIGURE 2



HNTB

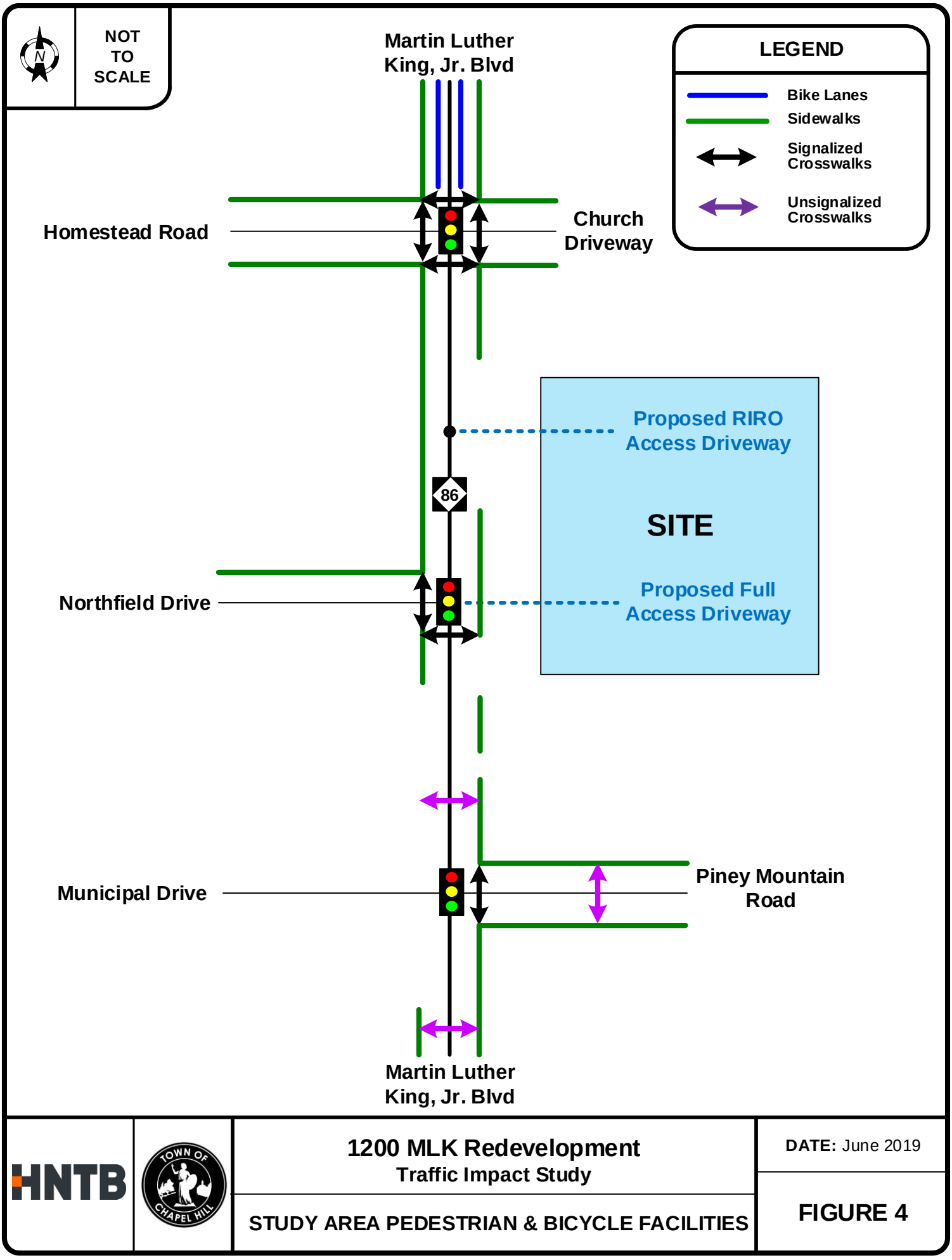
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

EXISTING LANEAGE AND GEOMETRICS

FIGURE 3



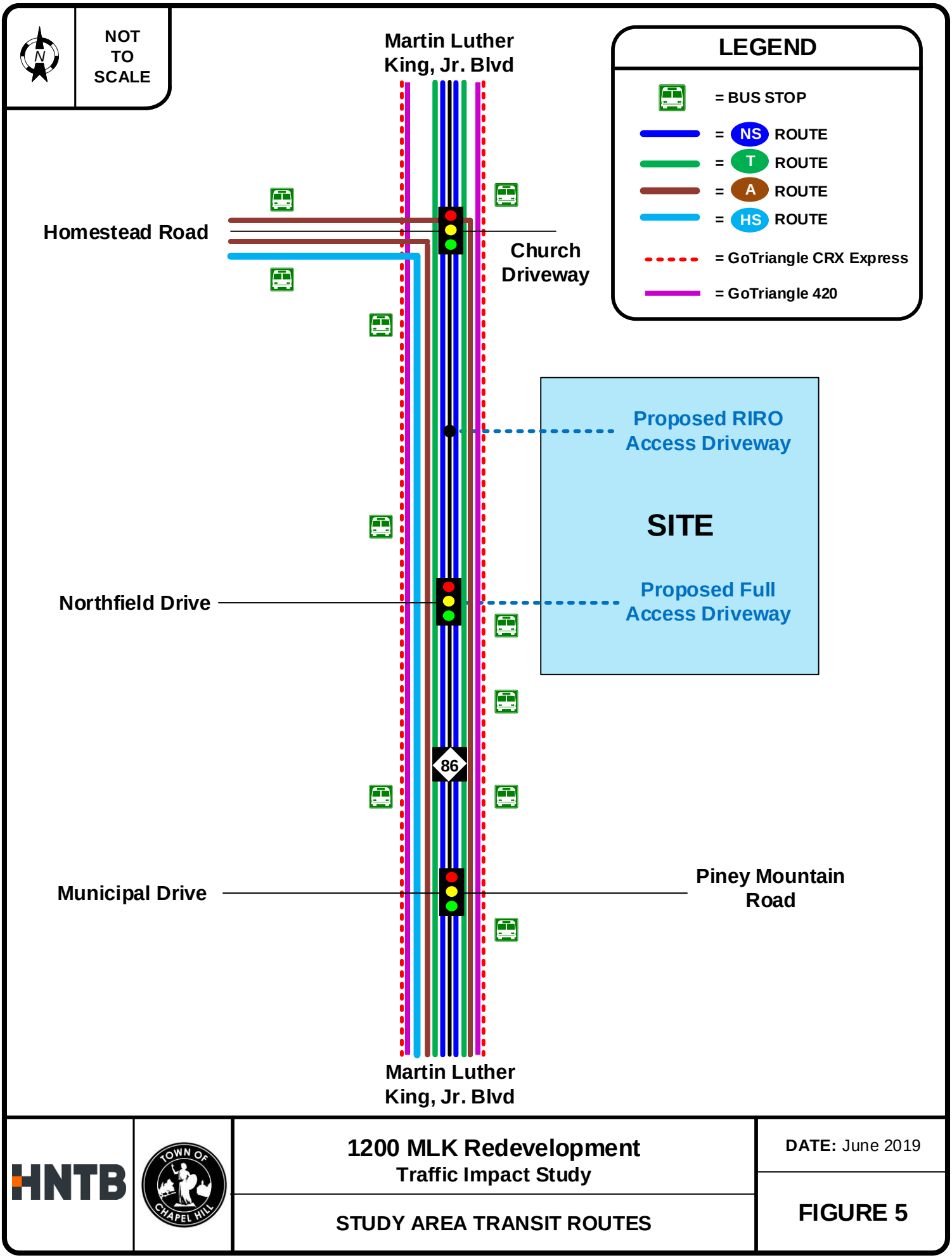
HNTB

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

STUDY AREA PEDESTRIAN & BICYCLE FACILITIES

FIGURE 4



HNTB

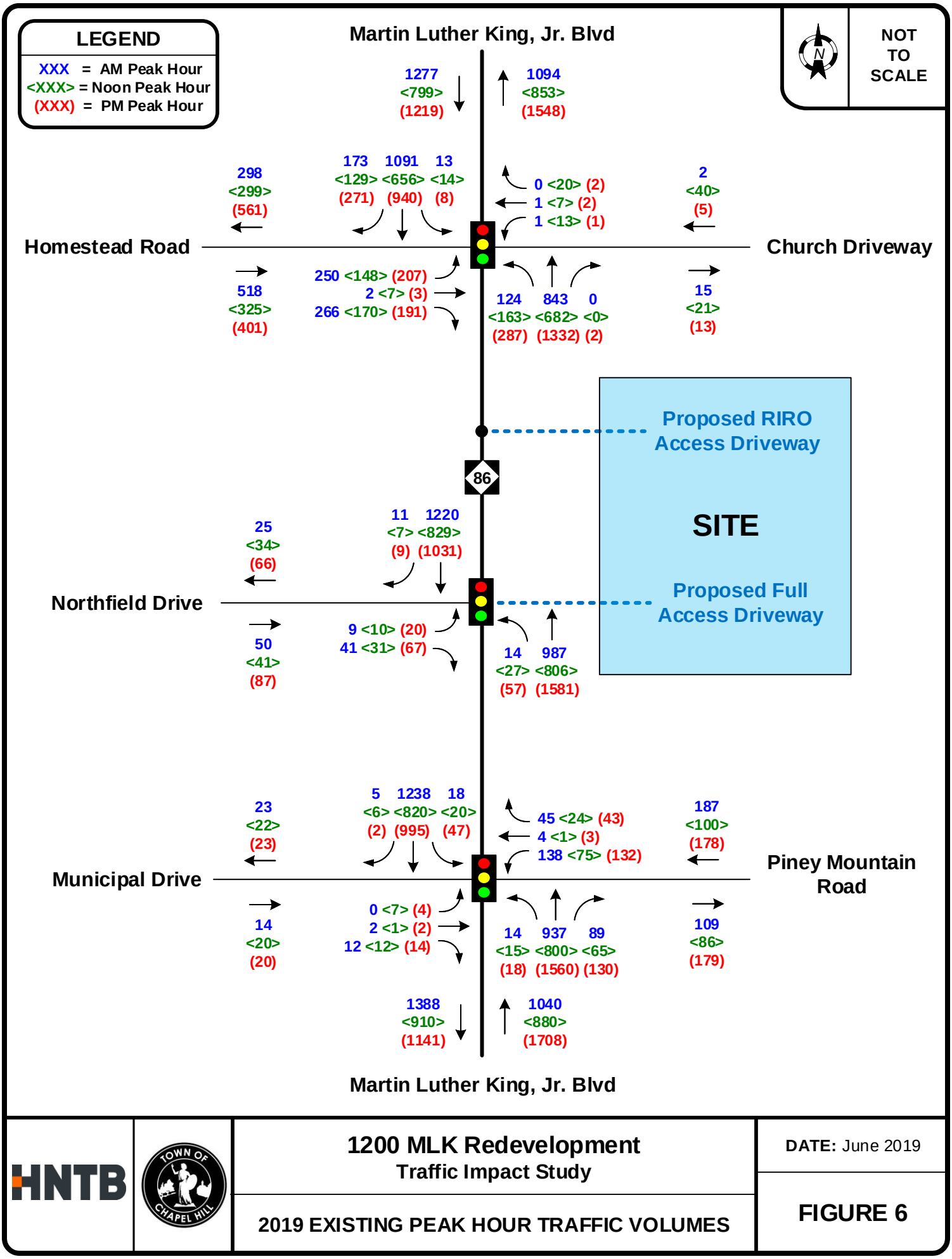
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

STUDY AREA TRANSIT ROUTES

FIGURE 5



HNTB

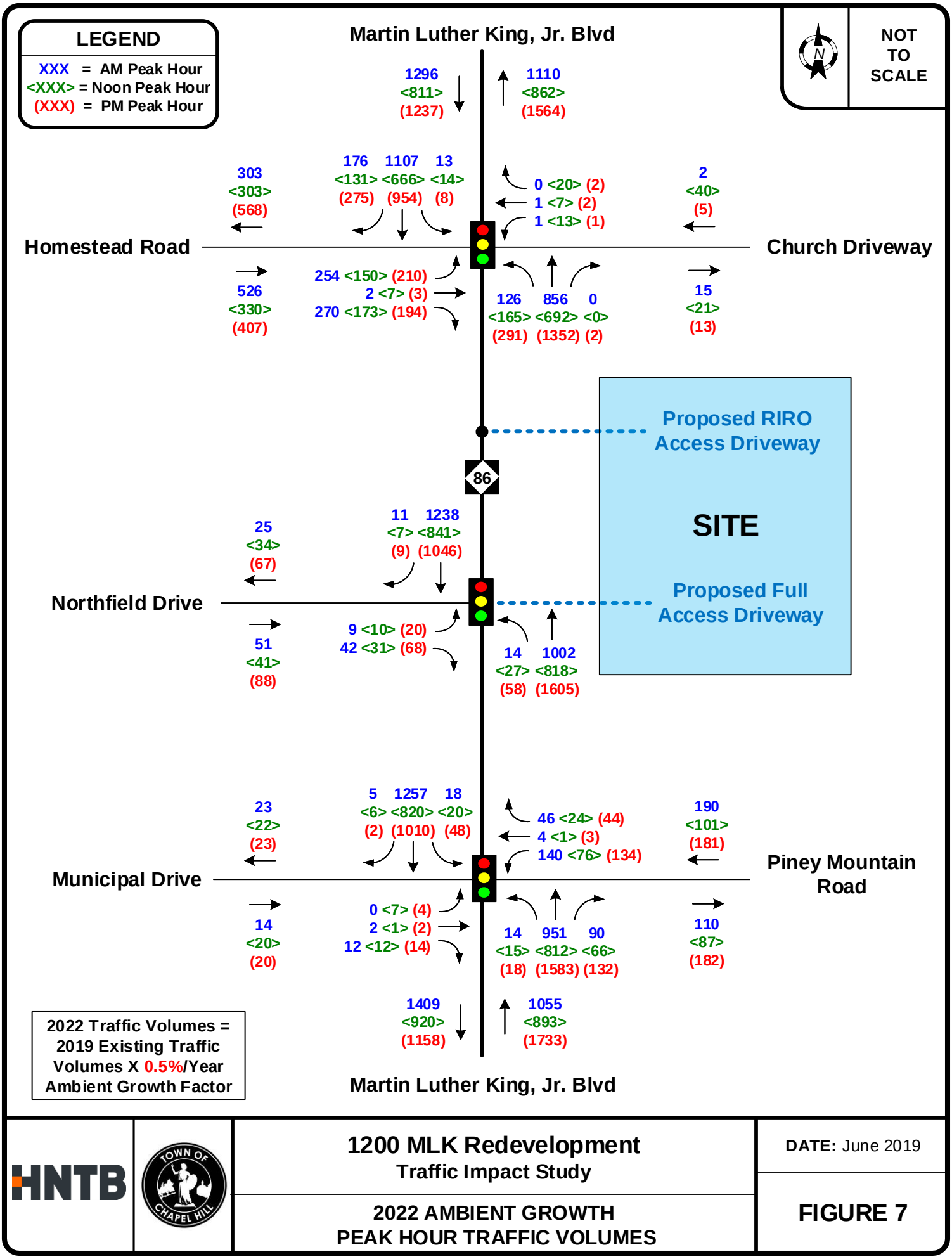
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

2019 EXISTING PEAK HOUR TRAFFIC VOLUMES

FIGURE 6



HNTB

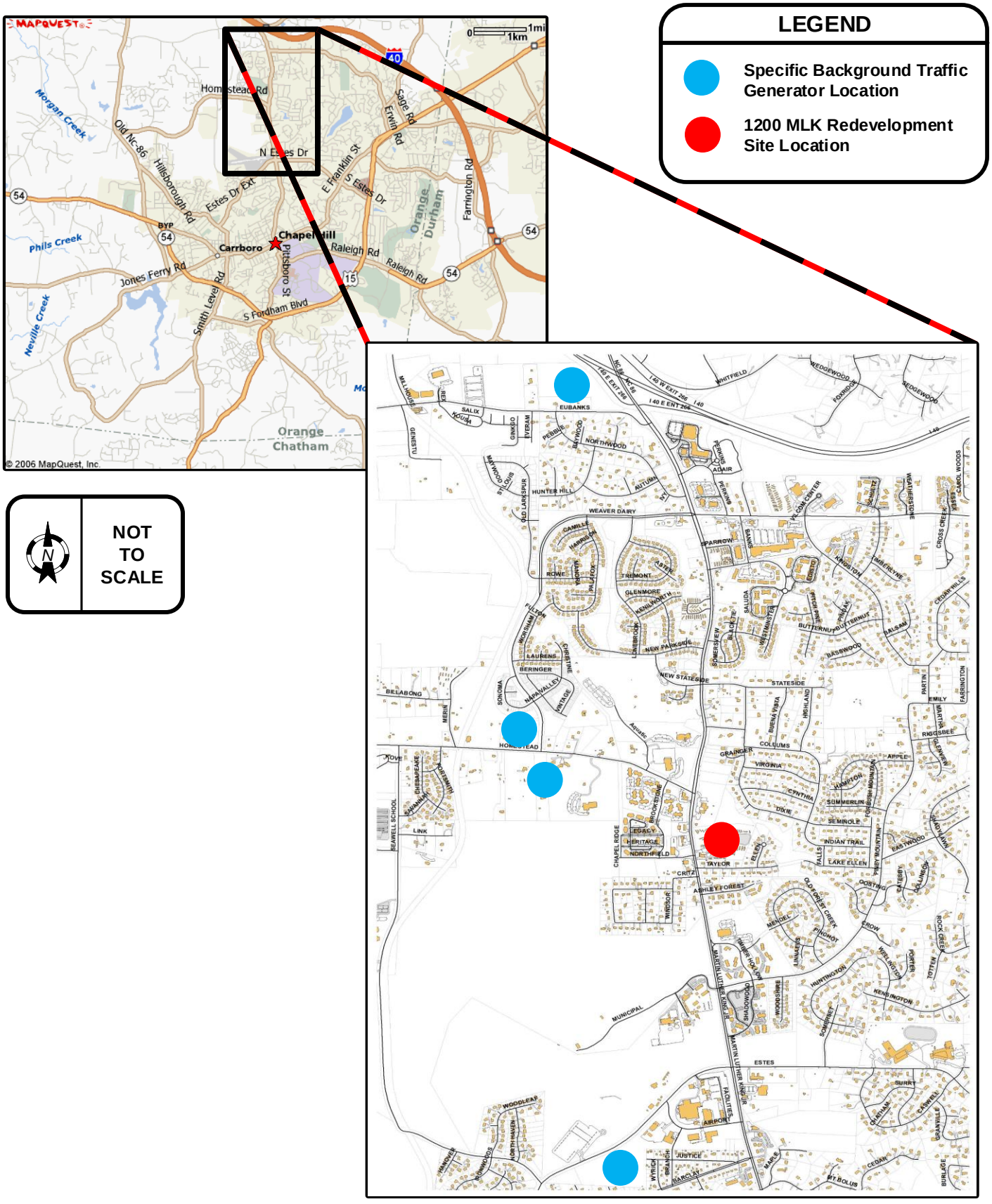
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

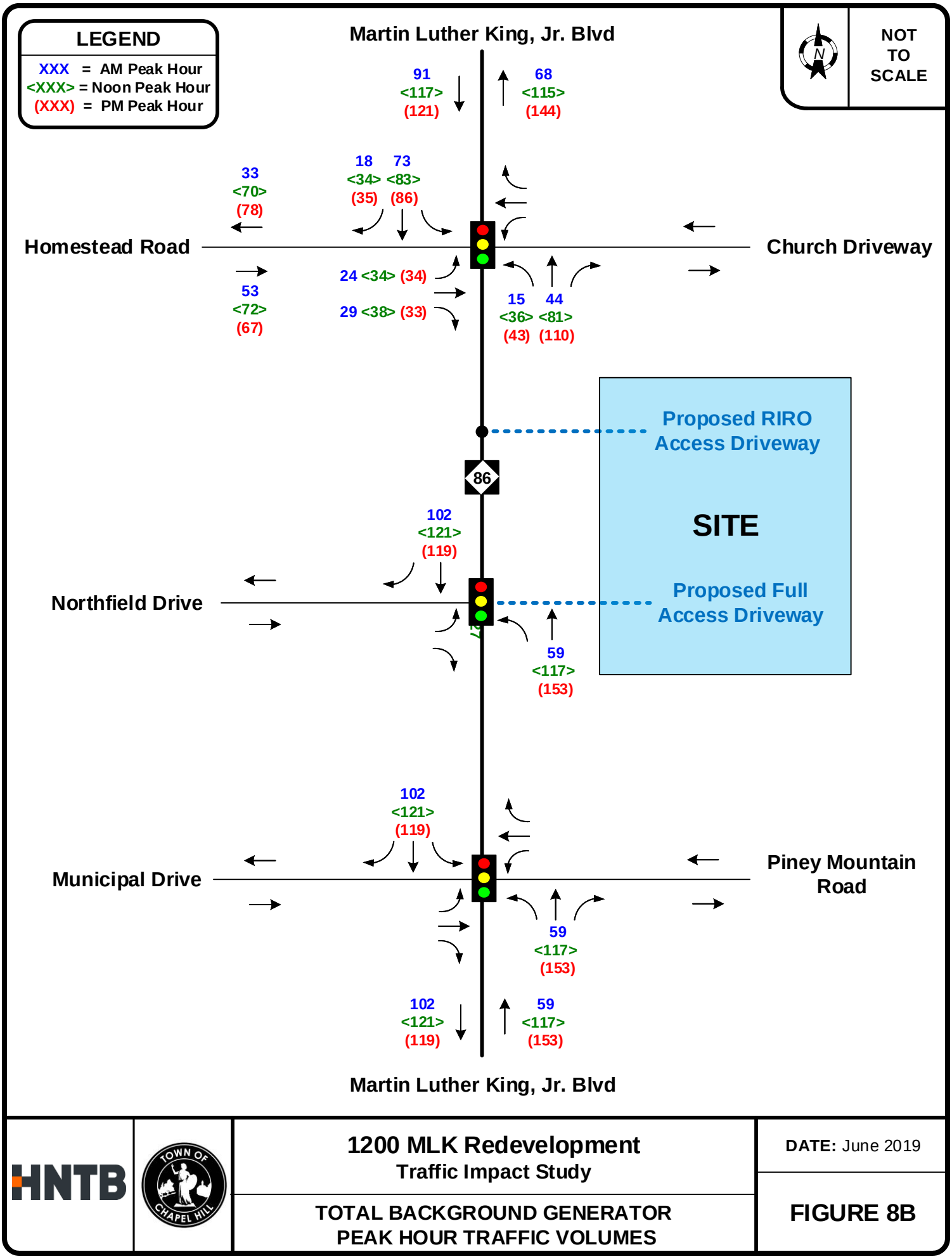
DATE: June 2019

2022 AMBIENT GROWTH PEAK HOUR TRAFFIC VOLUMES

FIGURE 7



HNTB	TOWN OF CHAPEL HILL	**1200 MLK Redevelopment** **Traffic Impact Study**	**DATE:** June 2019
		BACKGROUND TRAFFIC GENERATOR LOCATIONS	**FIGURE 8A**



HNTB

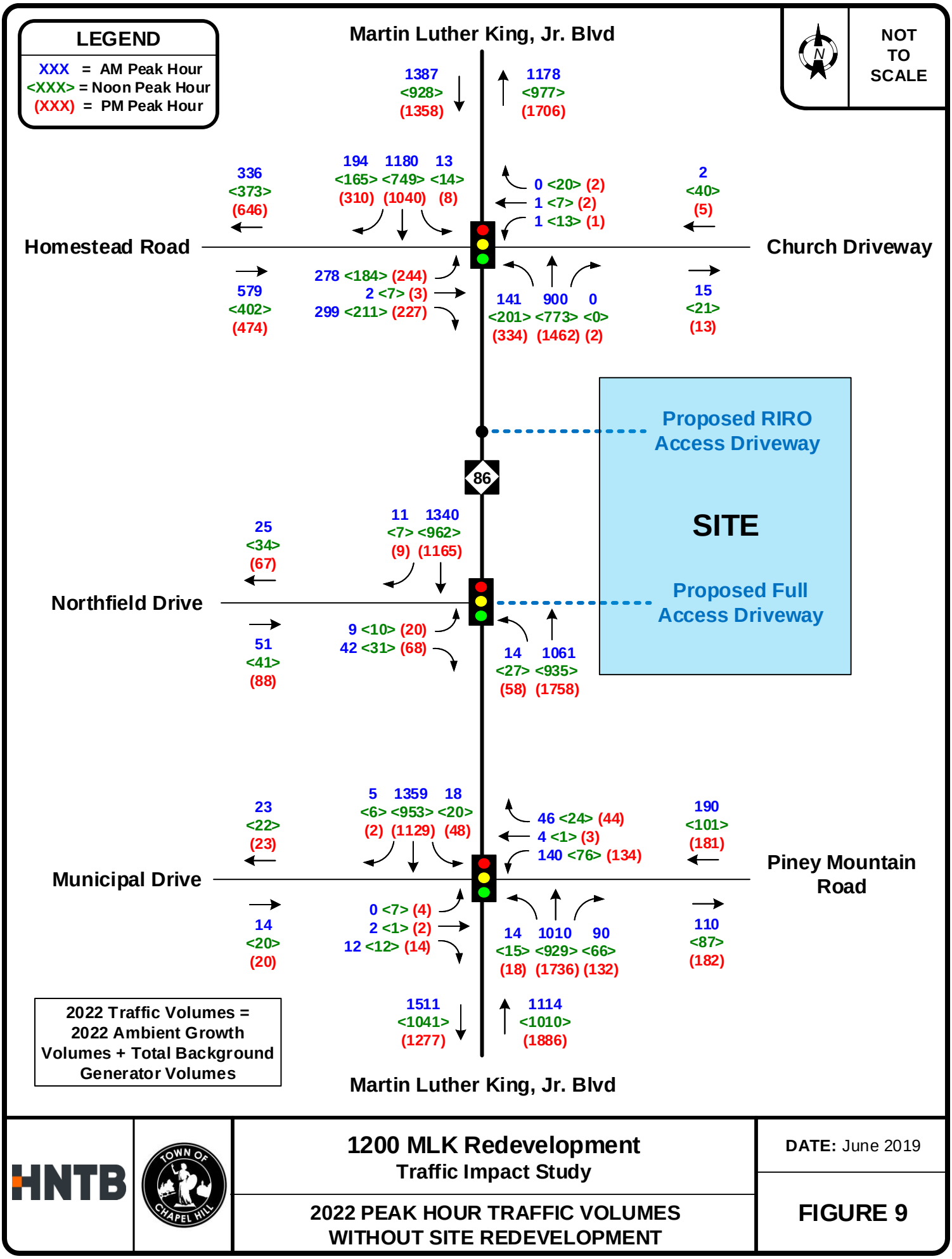
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

TOTAL BACKGROUND GENERATOR PEAK HOUR TRAFFIC VOLUMES

FIGURE 8B



HNTB

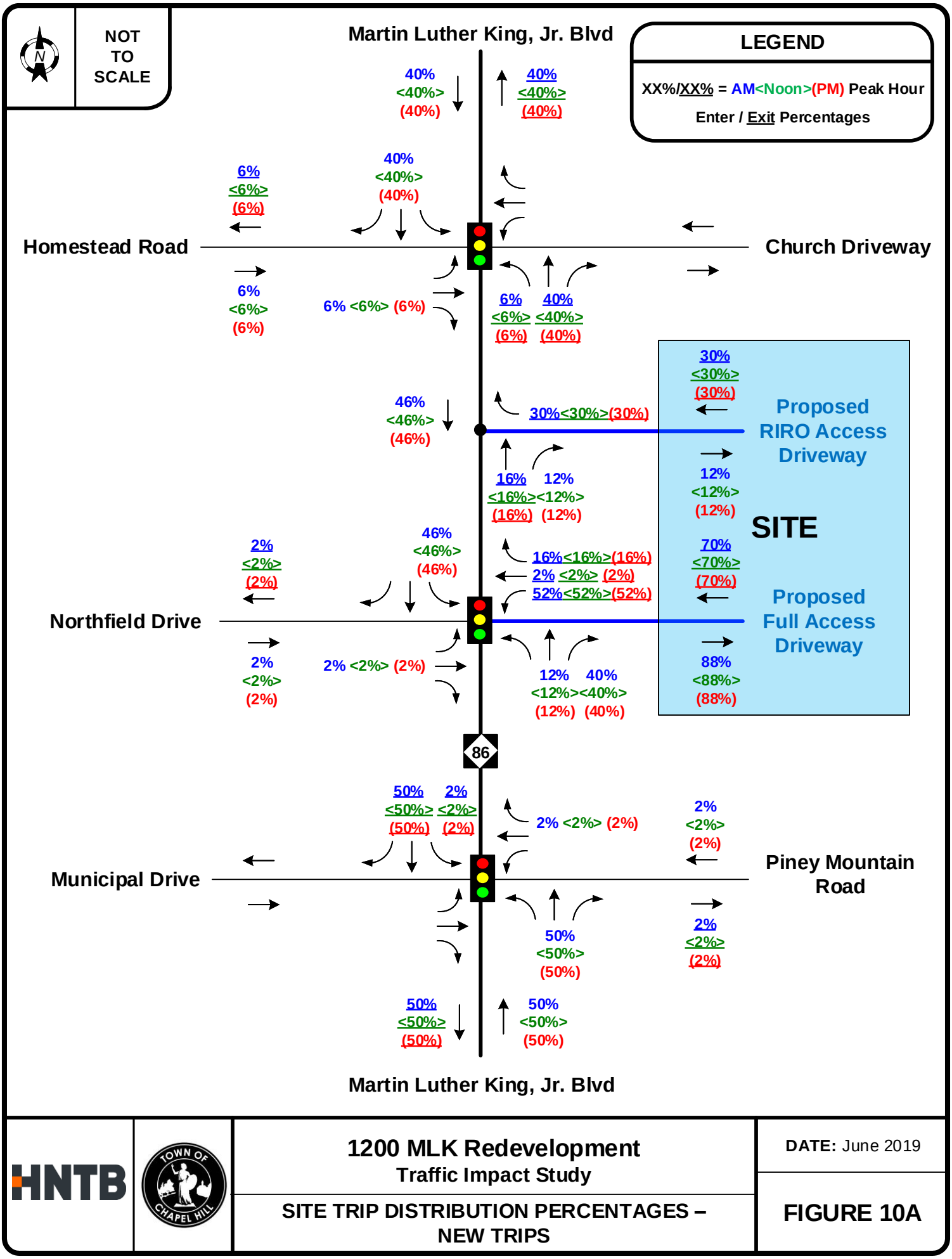
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

2022 PEAK HOUR TRAFFIC VOLUMES WITHOUT SITE REDEVELOPMENT

FIGURE 9



HNTB

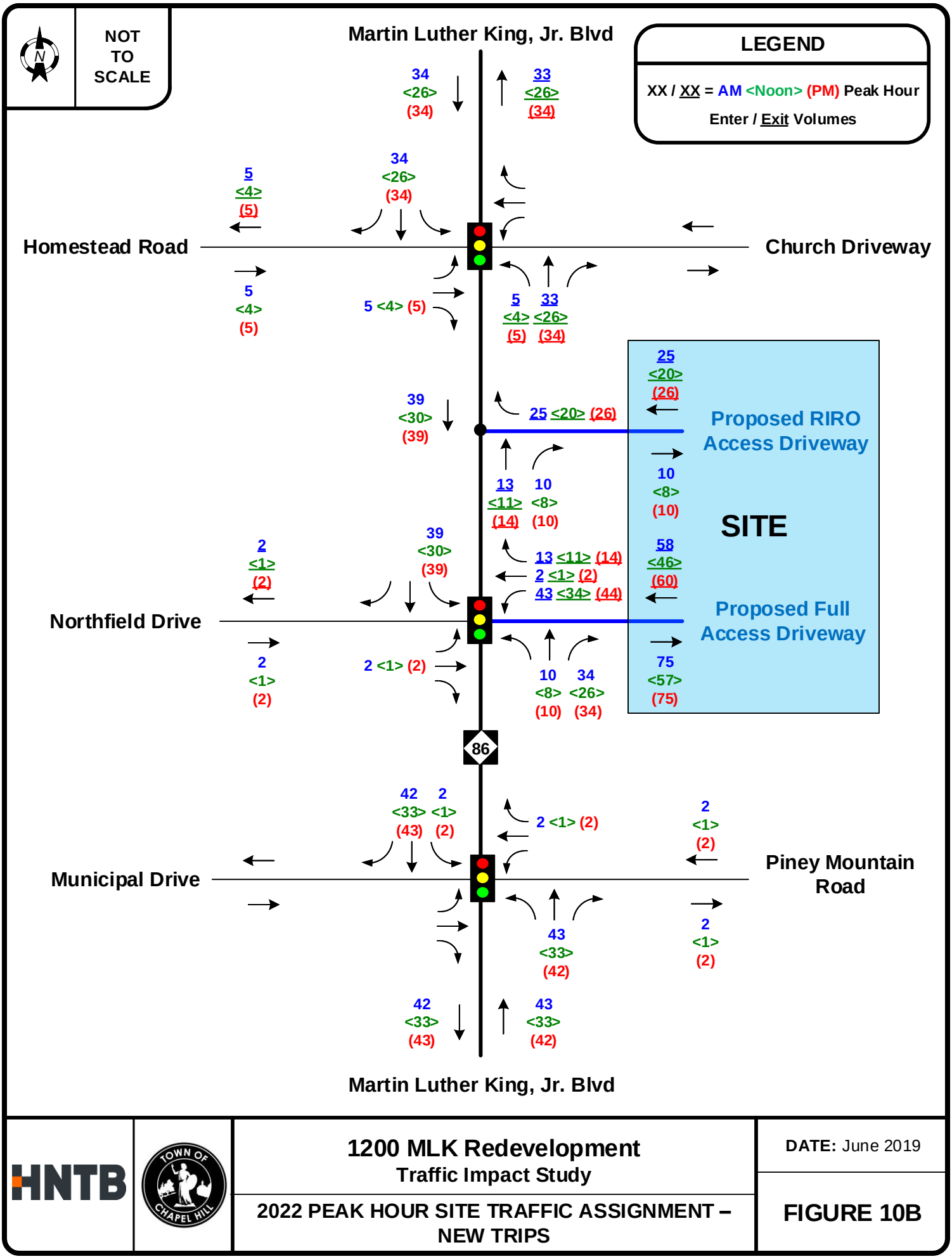
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

SITE TRIP DISTRIBUTION PERCENTAGES – NEW TRIPS

FIGURE 10A



HNTB

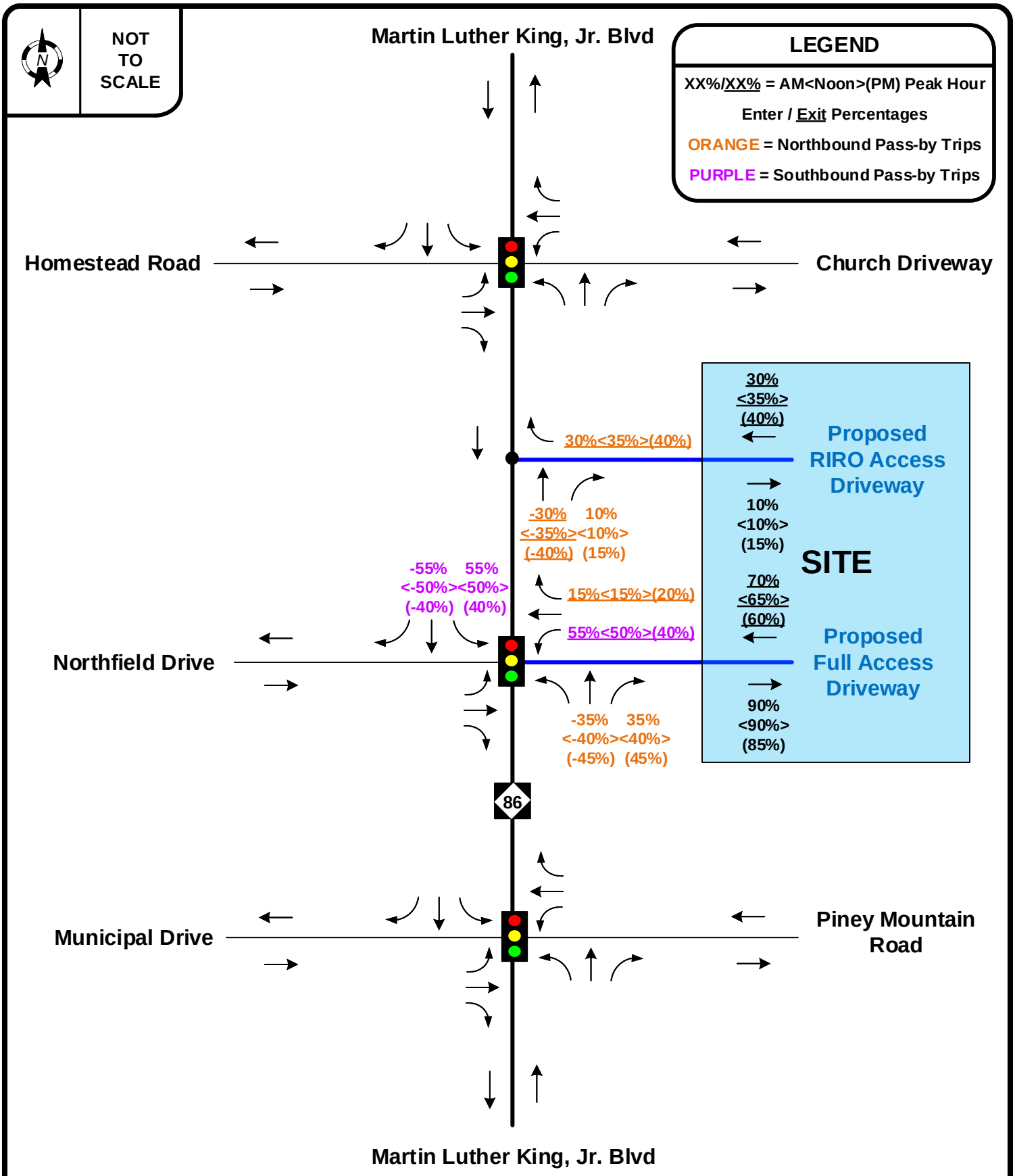
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

2022 PEAK HOUR SITE TRAFFIC ASSIGNMENT – NEW TRIPS

FIGURE 10B



HNTB

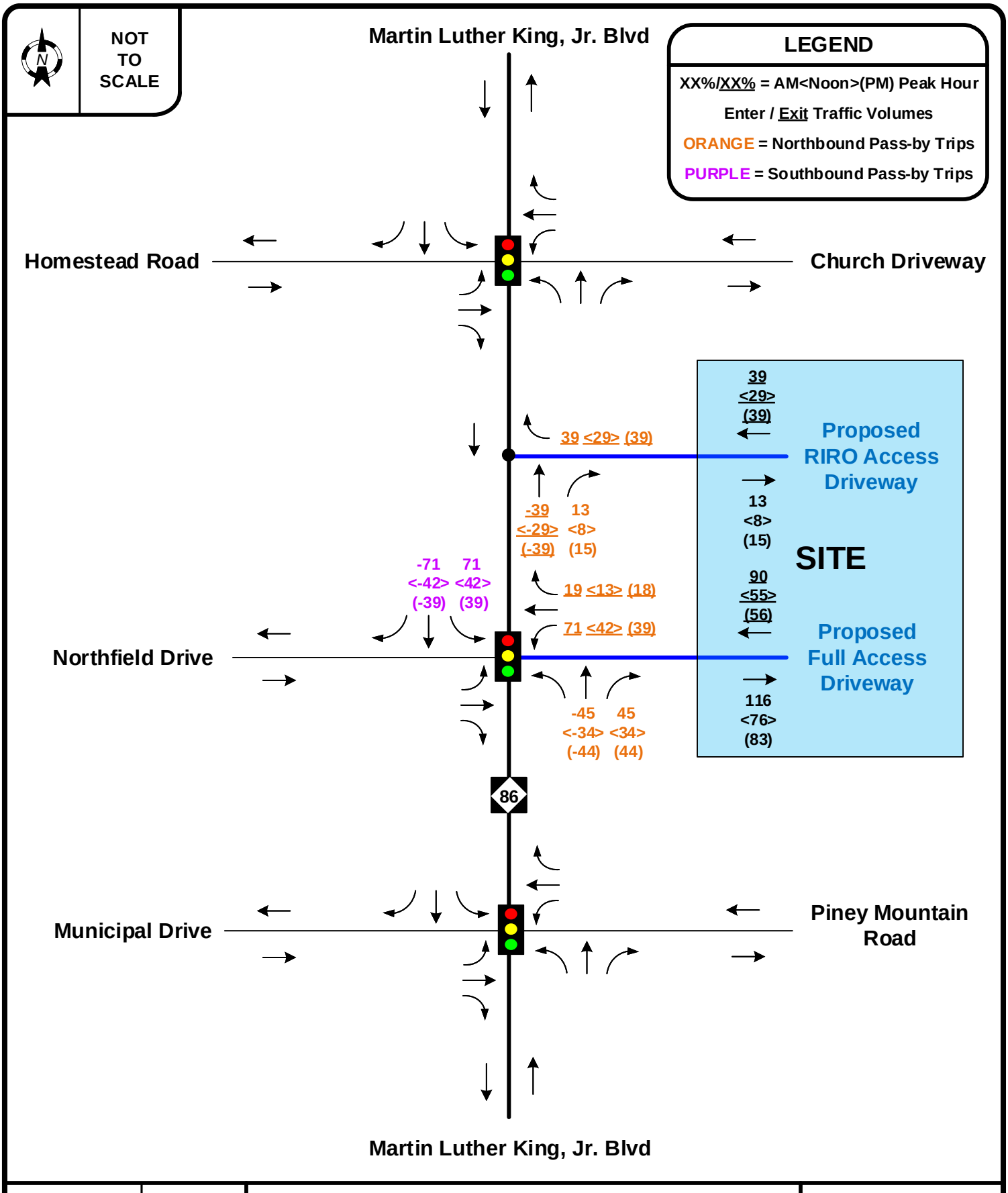
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

SITE TRIP DISTRIBUTION PERCENTAGES – PASS-BY TRIPS

DATE: June 2019

FIGURE 11A



HNTB

TOWN OF CHAPEL HILL

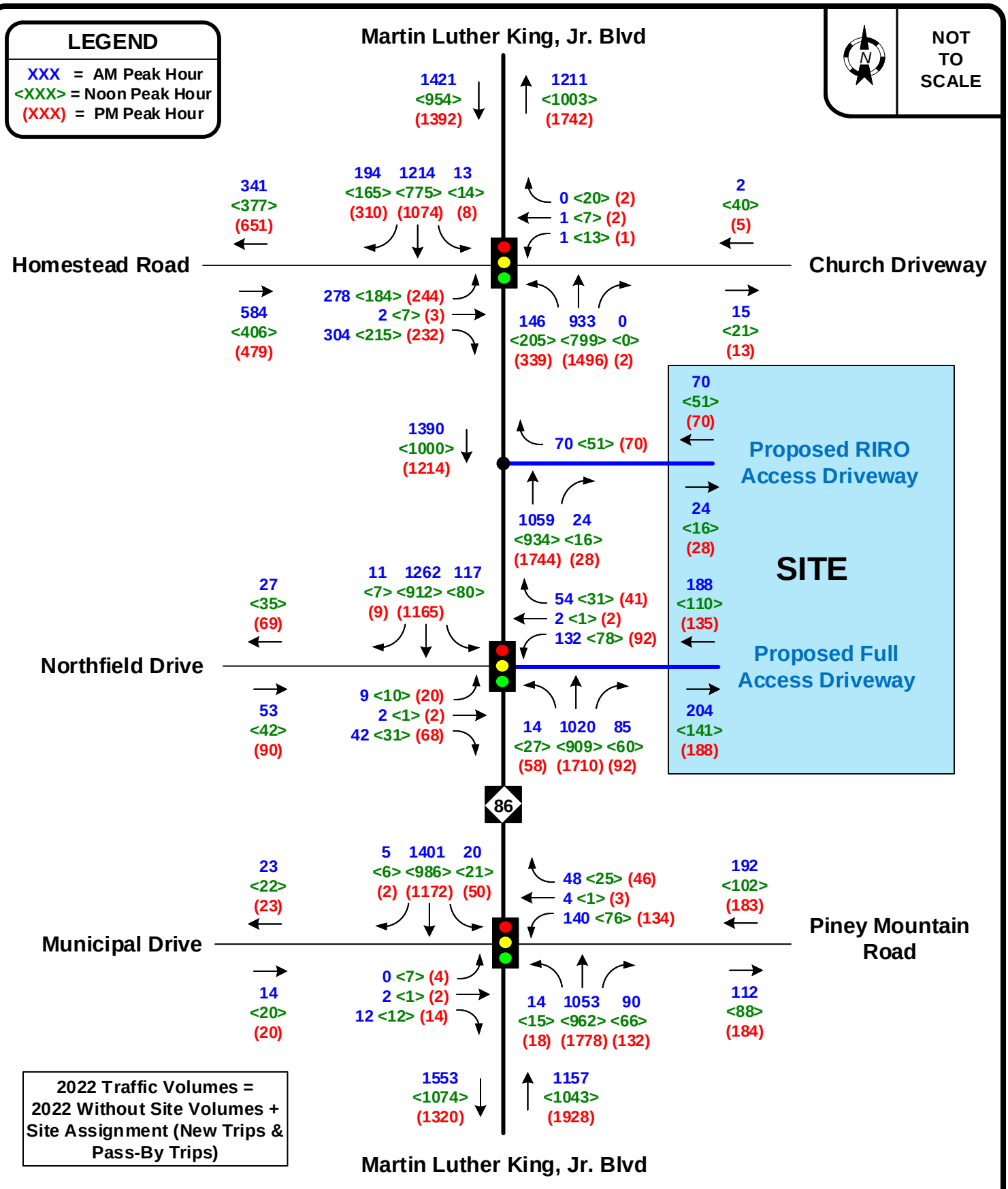
1200 MLK Redevelopment

Traffic Impact Study

DATE: June 2019

2022 PEAK HOUR SITE TRAFFIC ASSIGNMENT – PASS-BY TRIPS

FIGURE 11B



HNTB

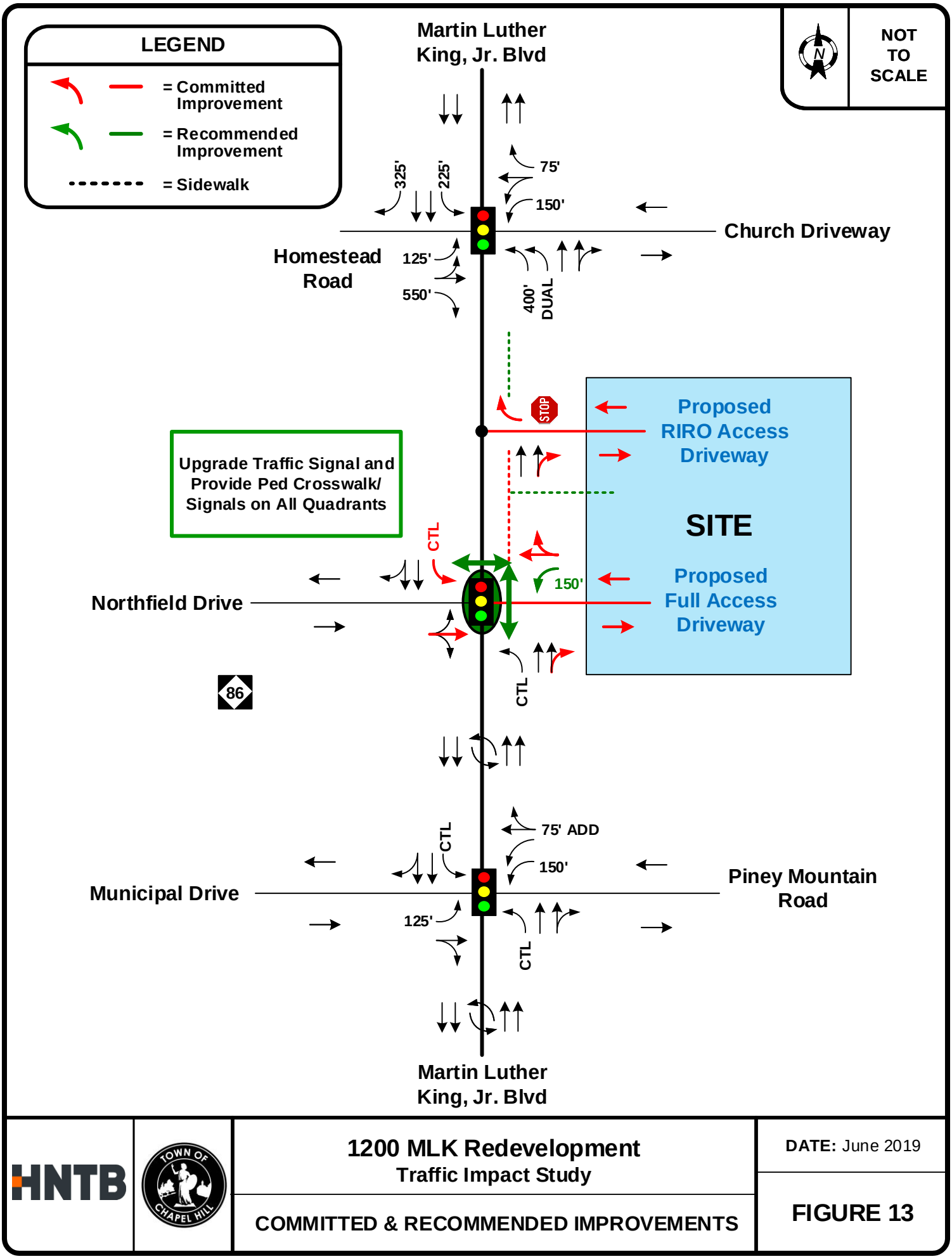
TOWN OF CHAPEL HILL

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

2022 PEAK HOUR TRAFFIC VOLUMES WITH SITE REDEVELOPMENT

FIGURE 12



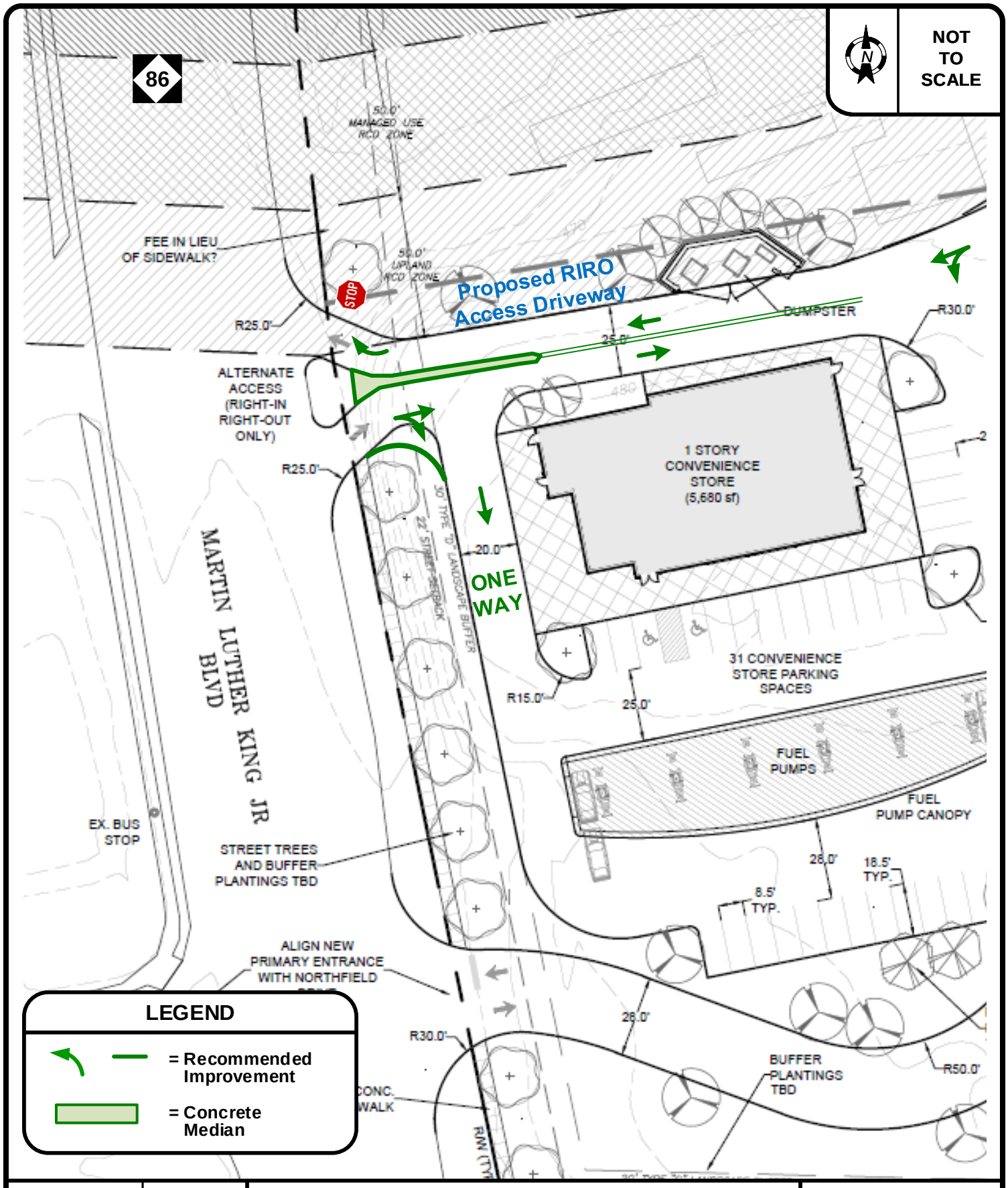
HNTB

1200 MLK Redevelopment
Traffic Impact Study

DATE: June 2019

COMMITTED & RECOMMENDED IMPROVEMENTS

FIGURE 13



HNTB

TOWN OF CHAPEL HILL

1200 MLK Redevelopment

Traffic Impact Study

DATE: June 2019

RECOMMENDED RIRO DRIVEWAY IMPROVEMENTS SCHEMATIC

FIGURE 14

Appendix B – Traffic Count Data

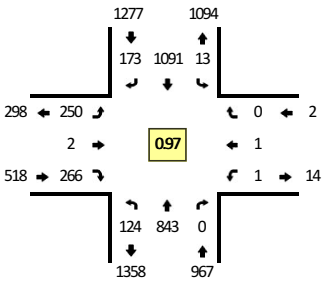
Type of peak hour being reported: Intersection Peak

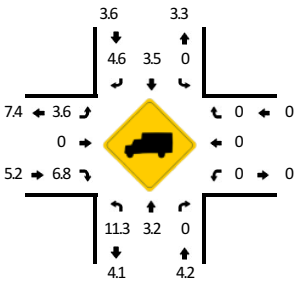
Method for determining peak hour: Total Entering Volume

LOCATION: NC 86 -- Homestead Rd_Church Dwy
CITY/STATE: Orange, NC

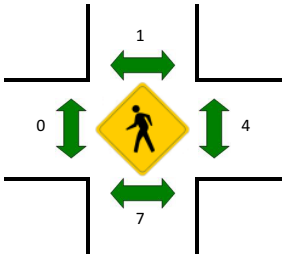
QC JOB #: 14946301
DATE: Tue, Apr 16 2019

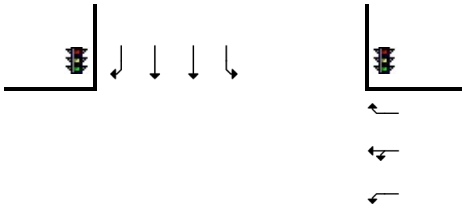
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

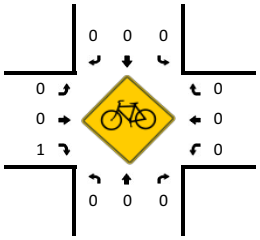


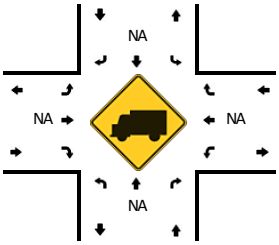


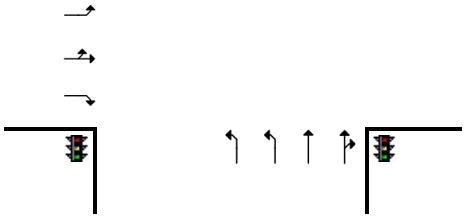
Quality Counts
DATA THAT DRIVES COMMUNITIES

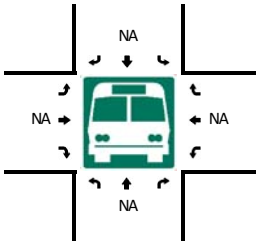












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Homestead Rd_Church Dwy (Eastbound)				Homestead Rd_Church Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	22	124	0	0	1	169	30	0	35	0	29	0	0	0	0	0	410	
7:15 AM	22	138	0	0	0	213	28	0	34	1	48	0	0	0	0	0	484	
7:30 AM	18	196	0	0	1	287	40	0	61	1	69	0	0	0	0	0	673	
7:45 AM	41	213	0	0	0	269	45	0	63	0	78	0	1	0	0	0	710	2277
8:00 AM	34	198	0	0	5	267	56	1	64	1	67	0	0	0	0	0	693	2560
8:15 AM	31	236	0	0	6	268	32	0	62	0	52	0	0	1	0	0	688	2764
8:30 AM	31	154	1	0	4	251	33	0	51	0	63	0	2	0	0	0	590	2681
8:45 AM	32	171	1	0	5	224	26	0	54	4	63	0	0	0	1	0	581	2552

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	164	852	0	0	0	1076	180	0	252	0	312	0	4	0	0	0	2840
Heavy Trucks	16	28	0		0	20	12		4	0	12		0	0	0		92
Pedestrians		8				4				0				8			20
Bicycles	0	0	0		0	0	0		0	0	1		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

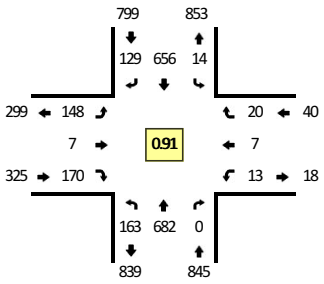
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

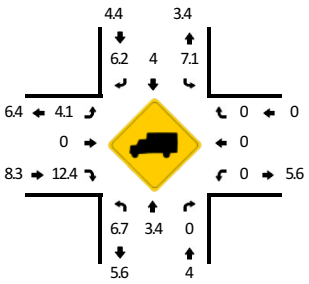
LOCATION: NC 86 -- Homestead Rd_Church Dwy
CITY/STATE: Orange, NC

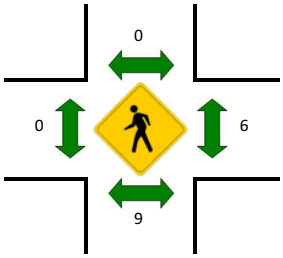
QC JOB #: 14946302
DATE: Tue, Apr 16 2019

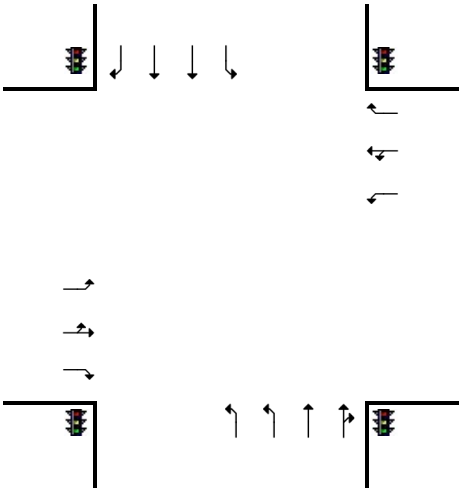
Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:00 PM -- 12:15 PM

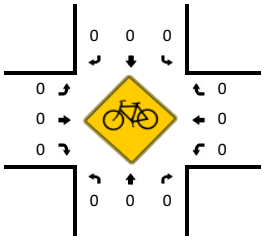


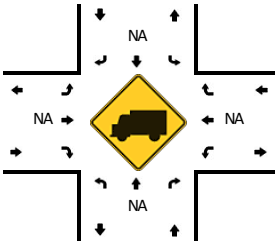
Quality Counts
DATA THAT DRIVES COMMUNITIES

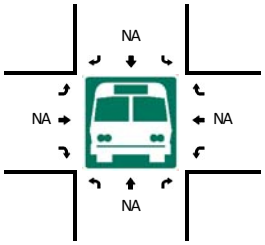












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Homestead Rd_Church Dwy (Eastbound)				Homestead Rd_Church Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	41	141	0	0	0	176	21	0	28	1	46	0	0	0	0	0	454	
11:45 AM	39	146	0	0	9	138	17	2	44	3	51	0	0	2	0	0	451	
12:00 PM	43	175	0	0	9	185	28	1	35	5	50	0	6	3	9	0	549	
12:15 PM	35	143	0	0	1	163	34	1	38	0	38	0	4	3	3	0	463	1917
12:30 PM	50	184	0	0	0	150	31	0	41	0	42	0	3	1	5	0	507	1970
12:45 PM	35	180	0	0	1	158	36	1	34	2	40	0	0	0	3	0	490	2009
1:00 PM	45	182	0	0	0	142	36	0	24	1	40	0	2	2	2	0	476	1936
1:15 PM	41	159	1	0	0	164	38	2	25	0	33	0	0	0	2	0	465	1938

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	172	700	0	0	36	740	112	4	140	20	200	0	24	12	36	0	2196
Heavy Trucks	4	36	0		4	24	12		4	0	28		0	0	0		112
Pedestrians		4				0				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

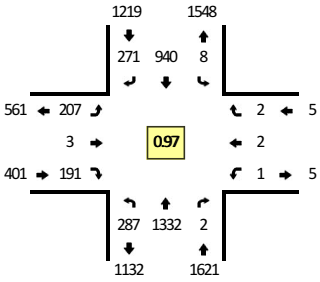
Type of peak hour being reported: Intersection Peak

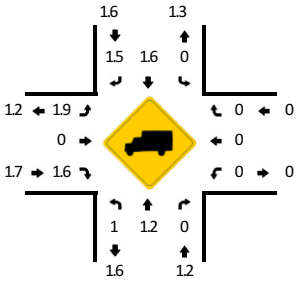
Method for determining peak hour: Total Entering Volume

LOCATION: NC 86 -- Homestead Rd_Church Dwy
CITY/STATE: Orange, NC

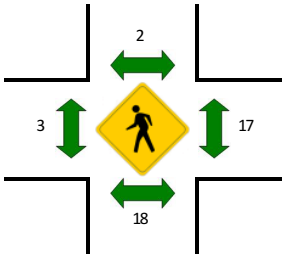
QC JOB #: 14946303
DATE: Tue, Apr 16 2019

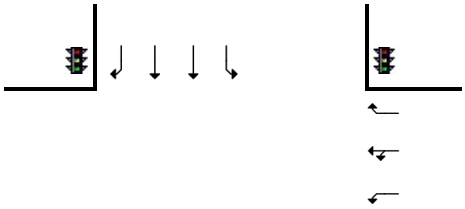
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

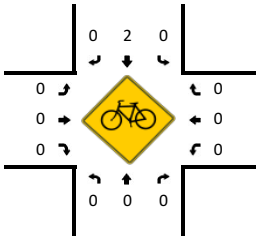


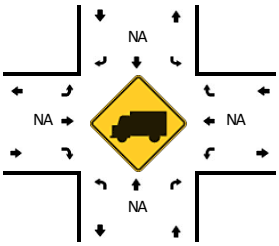


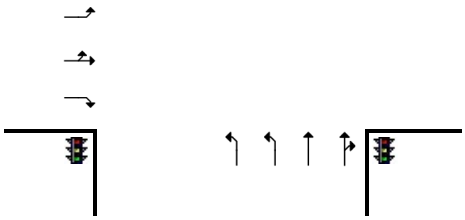
Quality Counts
DATA THAT DRIVES COMMUNITIES

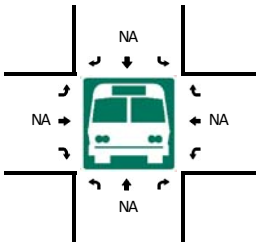












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Homestead Rd_Church Dwy (Eastbound)				Homestead Rd_Church Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	48	256	0	0	0	206	46	3	67	0	55	0	1	0	0	0	682	
4:15 PM	71	328	0	0	0	188	69	1	46	0	52	0	0	0	0	0	755	
4:30 PM	53	308	0	0	1	179	54	4	48	0	44	0	0	0	0	0	691	
4:45 PM	59	301	0	0	1	224	67	2	58	1	50	0	1	1	1	0	766	2894
5:00 PM	91	331	0	0	0	219	72	3	60	2	48	0	0	1	1	0	828	3040
5:15 PM	51	351	1	0	0	244	64	1	48	0	51	0	1	1	1	0	814	3099
5:30 PM	92	347	0	0	0	232	66	2	46	1	49	0	0	0	0	0	835	3243
5:45 PM	53	303	1	0	0	245	69	2	52	0	43	1	0	0	0	0	769	3246

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	368	1388	0	0	0	928	264	8	184	4	196	0	0	0	0	0	3340
Heavy Trucks	4	16	0		0	20	4		4	0	4		0	0	0		52
Pedestrians		8				0				0				8			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

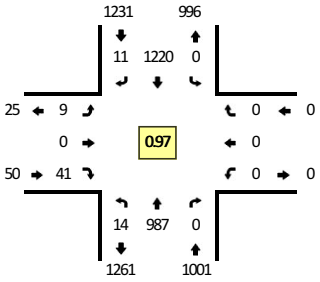
Report generated on 4/17/2019 1:21 PM

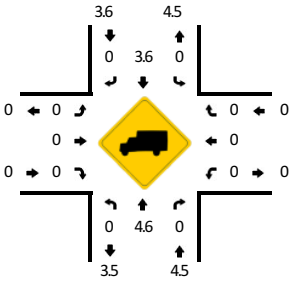
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

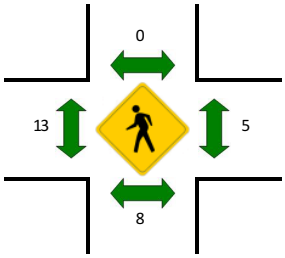
LOCATION: NC 86 -- Northfield Dr | **QC JOB #:** 14946304
CITY/STATE: Orange, NC | **DATE:** Wed, Apr 10 2019

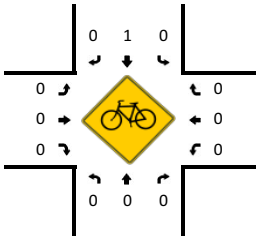
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

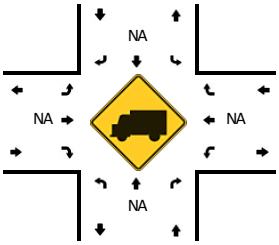


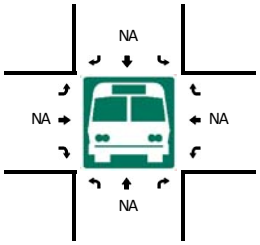


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Northfield Dr (Eastbound)				Northfield Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	143	0	0	0	184	1	0	0	0	5	0	0	0	0	0	333	
7:15 AM	3	156	0	0	0	247	4	0	1	0	8	0	0	0	0	0	419	
7:30 AM	4	192	0	0	0	323	2	0	1	0	5	0	0	0	0	0	527	
7:45 AM	4	251	0	0	0	297	5	0	2	0	9	0	0	0	0	0	568	1847
8:00 AM	2	241	0	0	0	283	3	0	4	0	5	0	0	0	0	0	538	2052
8:15 AM	0	265	0	0	0	309	1	0	2	0	10	0	0	0	0	0	587	2220
8:30 AM	8	230	0	0	0	331	2	0	1	0	17	0	0	0	0	0	589	2282
8:45 AM	4	200	0	0	0	322	2	0	1	0	13	0	0	0	0	0	542	2256

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	920	0	0	0	1324	8	0	4	0	68	0	0	0	0	0	2356
Heavy Trucks	0	44	0		0	48	0		0	0	0		0	0	0		92
Pedestrians		16				0				16				4			36
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

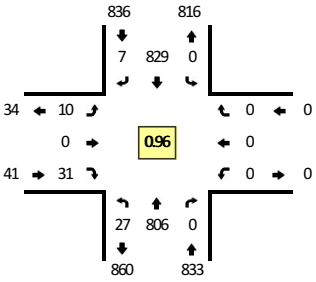
Type of peak hour being reported: Intersection Peak

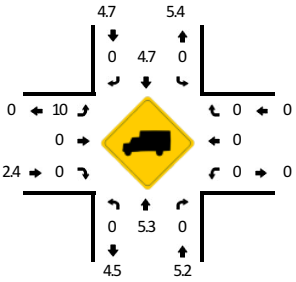
Method for determining peak hour: Total Entering Volume

LOCATION: NC 86 -- Northfield Dr
CITY/STATE: Orange, NC

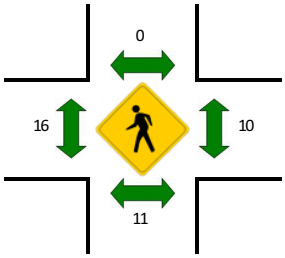
QC JOB #: 14946305
DATE: Wed, Apr 10 2019

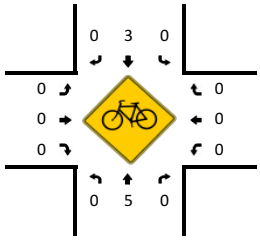
Peak-Hour: 11:45 AM -- 12:45 PM
Peak 15-Min: 12:00 PM -- 12:15 PM

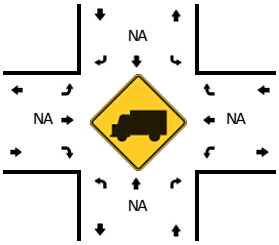


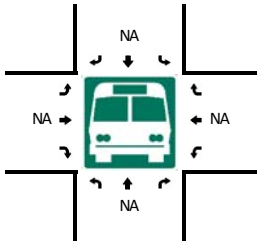


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Northfield Dr (Eastbound)				Northfield Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	6	180	0	0	0	210	5	0	6	0	7	0	0	0	0	0	414	
11:45 AM	4	197	0	0	0	219	3	0	2	0	14	0	0	0	0	0	439	
12:00 PM	2	209	0	0	0	221	1	0	3	0	9	0	0	0	0	0	445	
12:15 PM	12	192	0	0	0	199	0	0	2	0	5	0	0	0	0	0	410	1708
12:30 PM	9	208	0	0	0	190	3	0	3	0	3	0	0	0	0	0	416	1710
12:45 PM	7	206	0	0	0	154	1	0	6	0	4	0	0	0	0	0	378	1649
1:00 PM	6	240	0	0	0	163	1	0	2	0	11	0	0	0	0	0	423	1627
1:15 PM	5	208	0	0	0	160	1	0	3	0	5	0	0	0	0	0	382	1599

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	836	0	0	0	884	4	0	12	0	36	0	0	0	0	0	1780
Heavy Trucks	0	44	0		0	40	0		0	0	0		0	0	0		84
Pedestrians		8				0				8				4			20
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

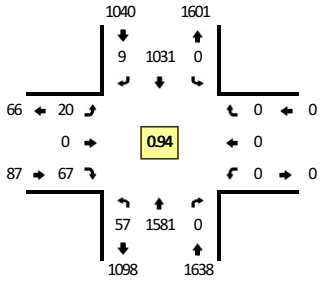
Type of peak hour being reported: Intersection Peak

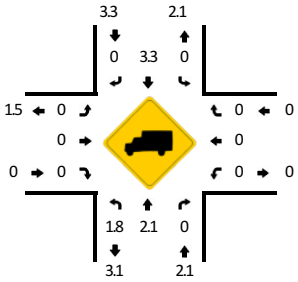
Method for determining peak hour: Total Entering Volume

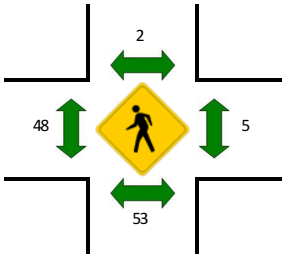
LOCATION: NC 86 -- Northfield Dr
CITY/STATE: Orange, NC

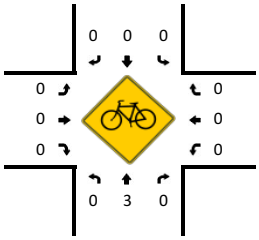
QC JOB #: 14946306
DATE: Wed, Apr 10 2019

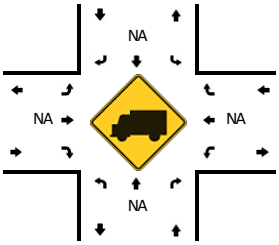
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

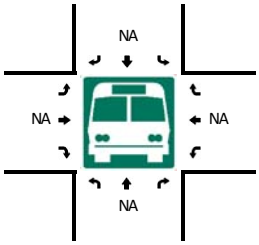












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Northfield Dr (Eastbound)				Northfield Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	11	298	0	0	0	221	5	0	1	0	10	0	0	0	0	0	546	
4:15 PM	4	315	0	0	0	252	5	0	4	0	17	0	0	0	0	0	597	
4:30 PM	10	351	0	0	0	232	5	0	4	0	14	0	0	0	0	0	616	
4:45 PM	14	379	0	0	0	263	1	0	6	0	18	0	0	0	0	0	681	2440
5:00 PM	14	345	0	0	0	267	3	0	7	0	14	0	0	0	0	0	650	2544
5:15 PM	13	445	0	0	0	249	3	0	6	0	20	0	0	0	0	0	736	2683
5:30 PM	16	412	0	0	0	252	2	0	1	0	15	0	0	0	0	0	698	2765
5:45 PM	14	309	0	0	0	271	9	0	4	0	15	0	0	0	0	0	622	2706

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	1780	0	0	0	996	12	0	24	0	80	0	0	0	0	0	2944
Heavy Trucks	0	32	0		0	28	0		0	0	0		0	0	0		60
Pedestrians		8				0				8				4			20
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

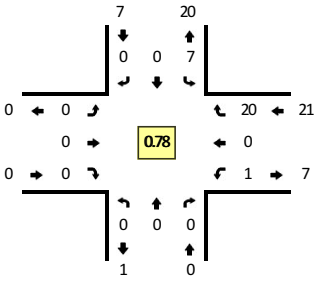
Type of peak hour being reported: Intersection Peak

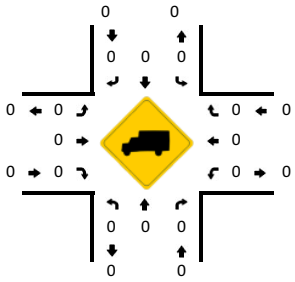
Method for determining peak hour: Total Entering Volume

LOCATION: NC 86 -- North Site Dwy
CITY/STATE: Orange, NC

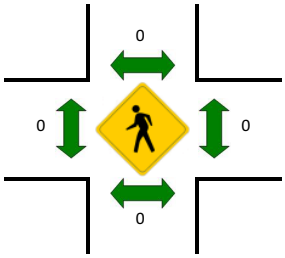
QC JOB #: 14946307
DATE: Wed, Apr 10 2019

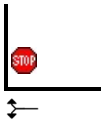
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

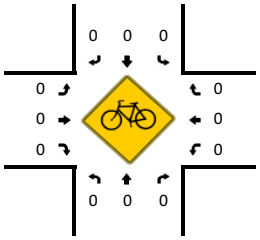


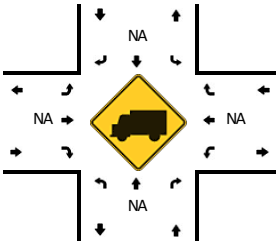


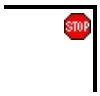
Quality Counts
DATA THAT DRIVES COMMUNITIES

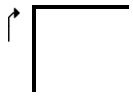


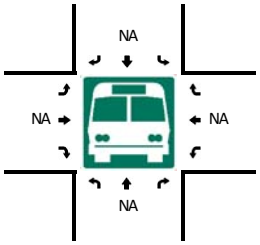












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				North Site Dwy (Eastbound)				North Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	5	
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3	12
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	5	14
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	0	7	20
8:30 AM	0	0	0	0	3	0	0	0	0	0	0	0	1	0	5	0	9	24
8:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	5	0	7	28

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	12	0	0	0	0	0	0	0	4	0	20	0	36
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

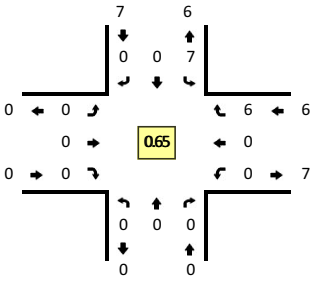
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

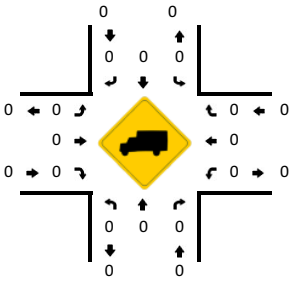
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: NC 86 -- North Site Dwy
CITY/STATE: Orange, NC

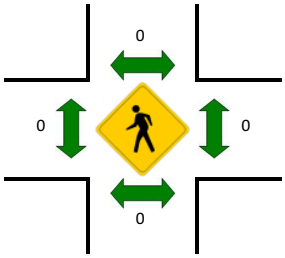
QC JOB #: 14946308
DATE: Wed, Apr 10 2019

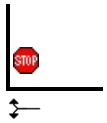
Peak-Hour: 11:30 AM -- 12:30 PM
Peak 15-Min: 12:15 PM -- 12:30 PM

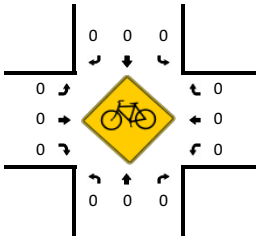


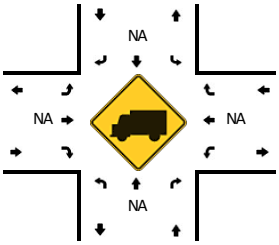


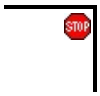
Quality Counts
DATA THAT DRIVES COMMUNITIES

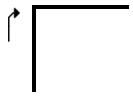


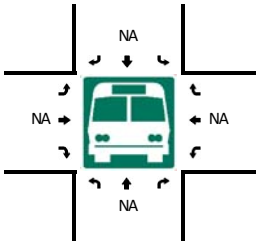












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				North Site Dwy (Eastbound)				North Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	3	
11:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	4	
12:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
12:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	5	13
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	12
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	10
1:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	12
1:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	8

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	12	0	0	0	0	0	0	0	0	0	8	0	20
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

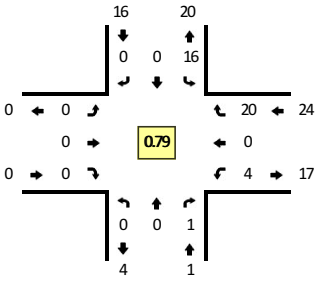
Type of peak hour being reported: Intersection Peak

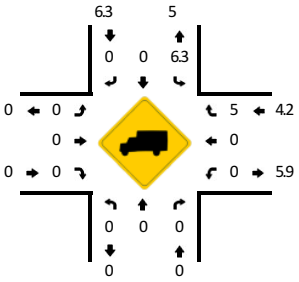
Method for determining peak hour: Total Entering Volume

LOCATION: NC 86 -- North Site Dwy
CITY/STATE: Orange, NC

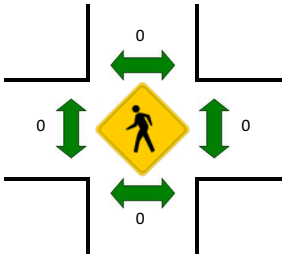
QC JOB #: 14946309
DATE: Wed, Apr 10 2019

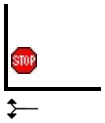
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

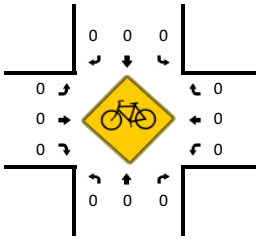


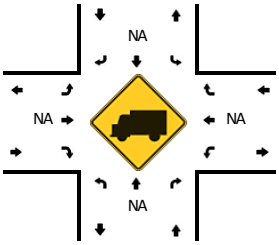


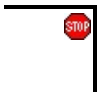
Quality Counts
DATA THAT DRIVES COMMUNITIES

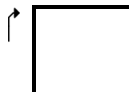


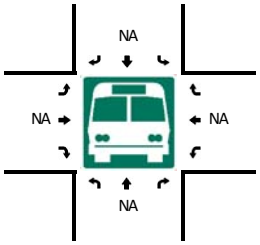












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				North Site Dwy (Eastbound)				North Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	5	0	0	0	0	0	0	0	1	0	3	0	9	
4:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	1	0	6	0	10	
4:30 PM	0	0	1	0	4	0	0	0	0	0	0	0	0	0	8	0	13	
4:45 PM	0	0	0	0	4	0	0	0	0	0	0	0	2	0	3	0	9	41
5:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	4	0	7	39
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	5	34
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	0	4	25
5:45 PM	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	8	24

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	16	0	0	0	0	0	0	0	0	0	32	0	52
Heavy Trucks	0	0	0		4	0	0		0	0	0		0	0	4		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

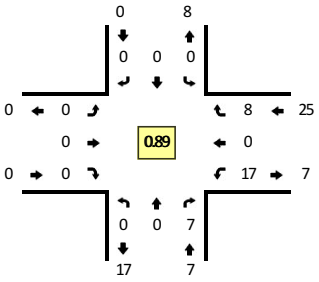
Report generated on 4/17/2019 1:21 PM

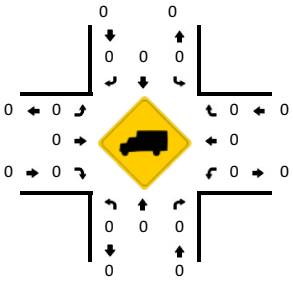
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

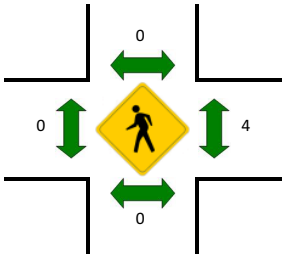
LOCATION: NC 86 -- South Site Dwy | **QC JOB #:** 14946310
CITY/STATE: Orange, NC | **DATE:** Wed, Apr 10 2019

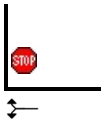
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

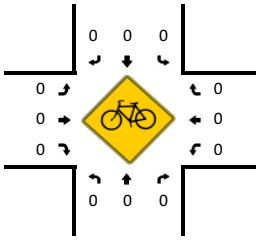


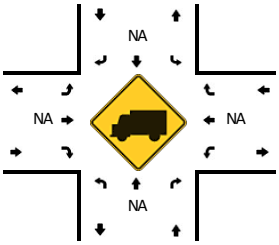


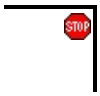
Quality Counts
DATA THAT DRIVES COMMUNITIES

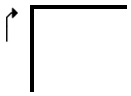


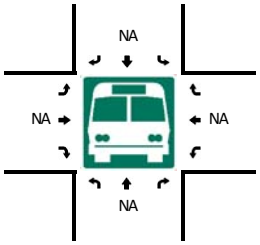












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				South Site Dwy (Eastbound)				South Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	6	0	9	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	8	
7:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	5	0	1	0	9	
7:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	2	0	0	0	6	32
8:00 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	5	28
8:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	3	23
8:30 AM	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	5	19
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	3	0	1	0	5	18

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	16	0	0	0	0	0	0	0	0	0	8	0	0	0	24
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

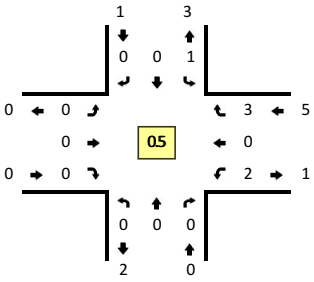
Type of peak hour being reported: Intersection Peak

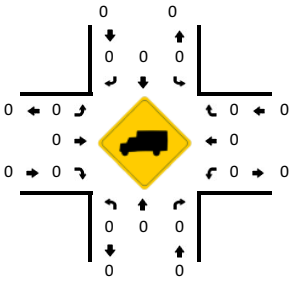
Method for determining peak hour: Total Entering Volume

LOCATION: NC 86 -- South Site Dwy
CITY/STATE: Orange, NC

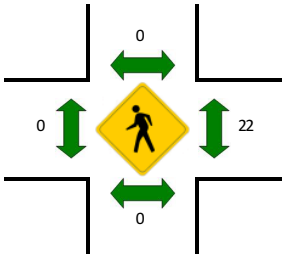
QC JOB #: 14946311
DATE: Wed, Apr 10 2019

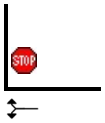
Peak-Hour: 11:30 AM -- 12:30 PM
Peak 15-Min: 12:15 PM -- 12:30 PM

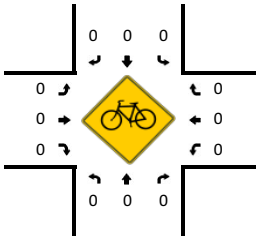


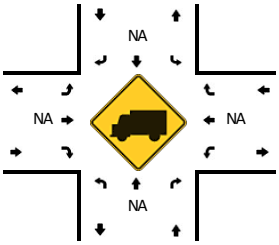


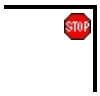
Quality Counts
DATA THAT DRIVES COMMUNITIES

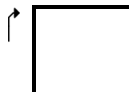


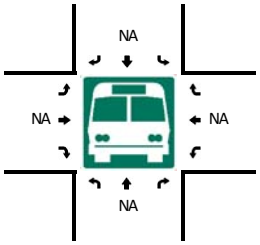












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				South Site Dwy (Eastbound)				South Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	6
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
12:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
1:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	5
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				36			36
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

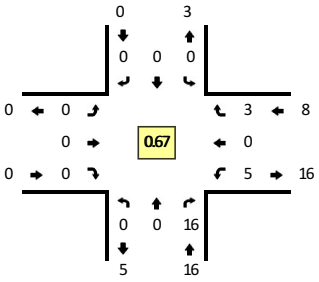
Type of peak hour being reported: Intersection Peak

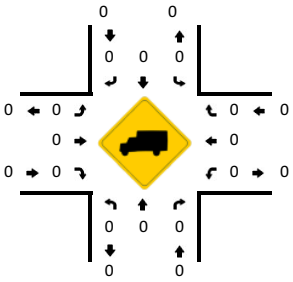
Method for determining peak hour: Total Entering Volume

LOCATION: NC 86 -- South Site Dwy
CITY/STATE: Orange, NC

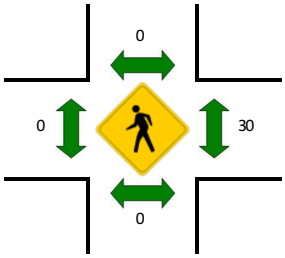
QC JOB #: 14946312
DATE: Wed, Apr 10 2019

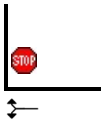
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

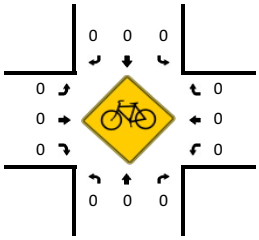


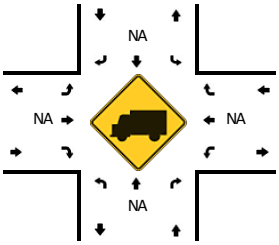


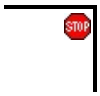
Quality Counts
DATA THAT DRIVES COMMUNITIES

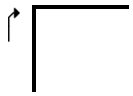


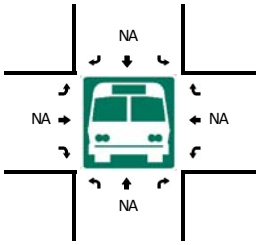












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				South Site Dwy (Eastbound)				South Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	2	0	2	0	7	
4:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	4	
4:30 PM	0	0	6	0	0	0	0	0	0	0	0	0	2	0	1	0	9	
4:45 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	24
5:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	20
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	18
5:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	3	12
5:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	1	0	5	13

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	24	0	0	0	0	0	0	0	0	0	8	0	4	0	36
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				24			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

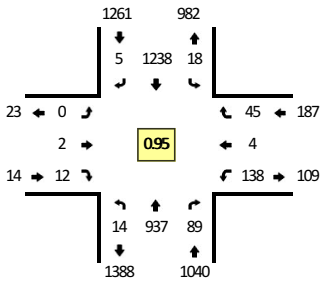
Report generated on 4/17/2019 1:21 PM

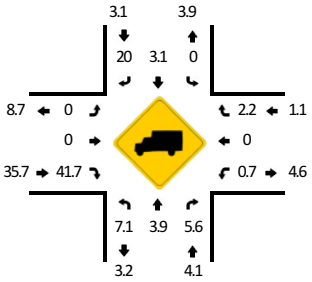
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

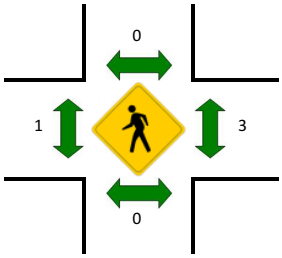
LOCATION: NC 86 -- Piney Mountain Rd_Municipal Dr | **QC JOB #:** 14946313
CITY/STATE: Orange, NC | **DATE:** Wed, Apr 10 2019

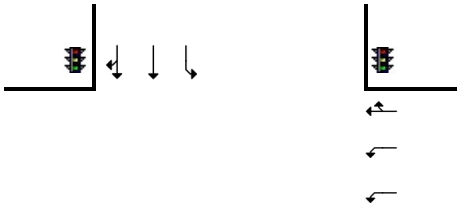
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

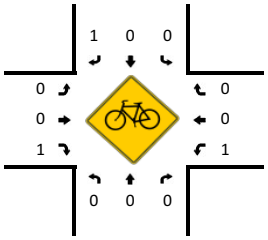


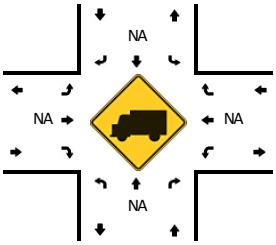


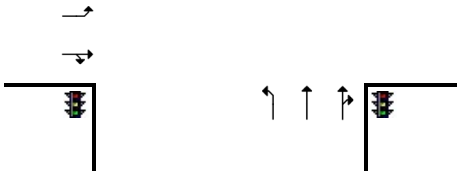
Quality Counts
DATA THAT DRIVES COMMUNITIES

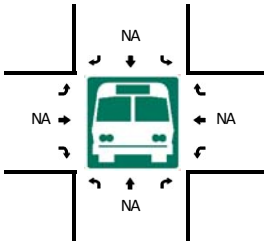












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Piney Mountain Rd_Municipal Dr (Eastbound)				Piney Mountain Rd_Municipal Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	129	7	0	0	167	0	0	0	0	1	0	25	0	11	0	342	
7:15 AM	0	130	8	0	2	238	1	0	0	0	0	0	47	0	10	0	436	
7:30 AM	4	179	9	0	5	349	1	0	2	0	1	0	37	2	9	0	598	
7:45 AM	2	234	29	0	2	302	0	0	0	0	3	0	48	0	11	0	631	2007
8:00 AM	2	245	21	0	8	298	3	0	0	0	0	0	24	4	8	0	613	2278
8:15 AM	1	238	25	0	4	289	1	0	0	0	3	0	25	0	14	0	600	2442
8:30 AM	9	220	14	0	4	349	1	0	0	2	6	0	41	0	12	0	658	2502
8:45 AM	3	179	17	0	5	338	0	0	1	1	8	0	35	0	14	0	601	2472

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	36	880	56	0	16	1396	4	0	0	8	24	0	164	0	48	0	2632
Heavy Trucks	4	36	8		0	44	0		0	0	8		4	0	0		104
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		1	0	0		1
Railroad Stopped Buses																	

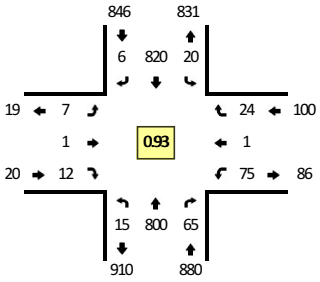
Comments:

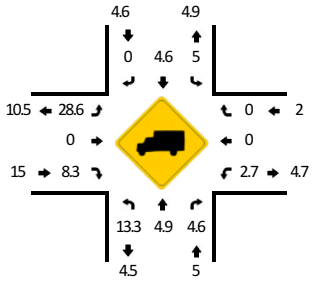
Report generated on 4/17/2019 1:21 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

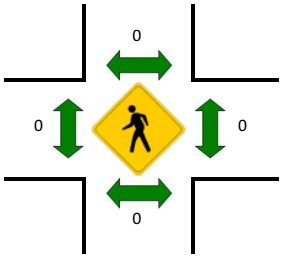
LOCATION: NC 86 -- Piney Mountain Rd_Municipal Dr | **QC JOB #:** 14946314
CITY/STATE: Orange, NC | **DATE:** Wed, Apr 10 2019

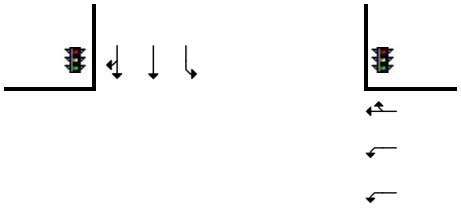
Peak-Hour: 11:45 AM -- 12:45 PM
Peak 15-Min: 11:45 AM -- 12:00 PM

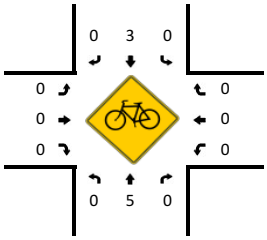


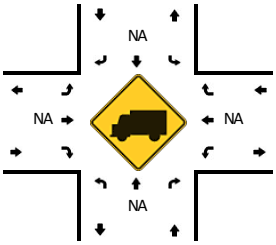


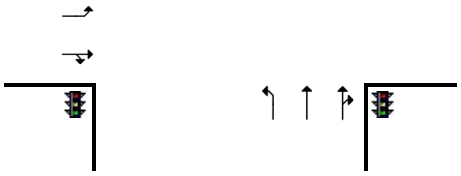
Quality Counts
DATA THAT DRIVES COMMUNITIES

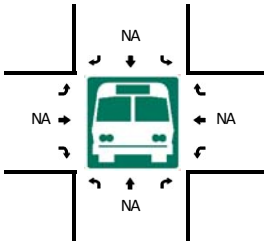












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Piney Mountain Rd_Municipal Dr (Eastbound)				Piney Mountain Rd_Municipal Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	4	162	21	0	9	194	1	0	3	0	5	0	21	0	6	0	426	
11:45 AM	4	190	21	2	4	239	1	0	4	0	2	0	20	0	7	0	494	
12:00 PM	3	197	10	1	8	200	3	0	1	0	2	0	19	0	7	0	451	
12:15 PM	4	205	20	0	3	202	0	0	2	1	4	0	12	0	8	0	461	1832
12:30 PM	1	208	14	0	5	179	2	0	0	0	4	0	24	1	2	0	440	1846
12:45 PM	5	207	14	1	6	173	1	0	0	0	4	0	19	0	8	0	438	1790
1:00 PM	6	226	25	1	9	172	2	0	0	0	7	0	11	0	8	0	467	1806
1:15 PM	3	204	23	0	8	164	1	1	1	0	4	0	18	0	7	0	434	1779

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	760	84	8	16	956	4	0	16	0	8	0	80	0	28	0	1976
Heavy Trucks	4	52	0		0	44	0		8	0	0		4	0	0		112
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad Stopped Buses																	

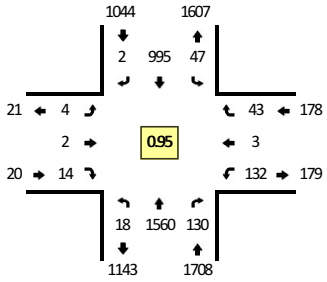
Comments:

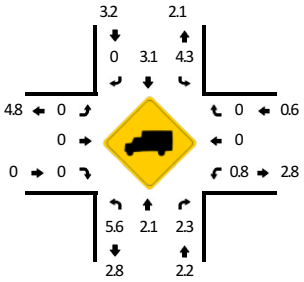
Report generated on 4/17/2019 1:21 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

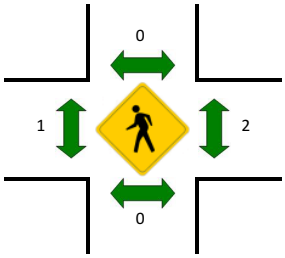
LOCATION: NC 86 -- Piney Mountain Rd_Municipal Dr | **QC JOB #:** 14946315
CITY/STATE: Orange, NC | **DATE:** Wed, Apr 10 2019

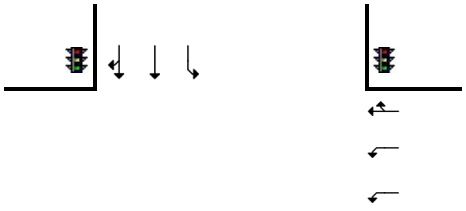
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

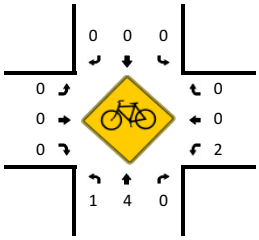


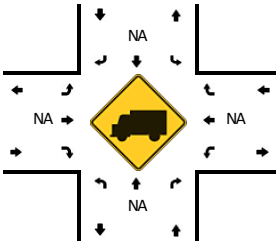


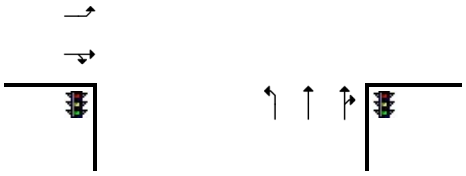
Quality Counts
DATA THAT DRIVES COMMUNITIES

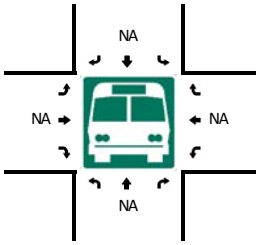












15-Min Count Period Beginning At	NC 86 (Northbound)				NC 86 (Southbound)				Piney Mountain Rd_Municipal Dr (Eastbound)				Piney Mountain Rd_Municipal Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	325	17	0	11	227	4	0	0	0	7	0	20	0	10	0	622	
4:15 PM	2	306	23	0	18	227	1	0	2	0	4	0	30	0	8	0	621	
4:30 PM	4	378	21	0	13	243	1	0	5	1	4	0	16	1	5	0	692	
4:45 PM	1	371	30	0	8	240	1	0	3	0	4	0	29	2	11	0	700	2635
5:00 PM	5	375	36	0	9	277	1	0	0	0	4	0	36	0	10	0	753	2766
5:15 PM	6	423	36	1	18	245	0	0	1	1	5	0	26	1	15	0	778	2923
5:30 PM	4	391	28	1	12	233	0	0	0	1	1	0	41	0	7	0	719	2950
5:45 PM	3	328	27	1	19	267	1	0	0	0	1	0	42	1	10	0	700	2950

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	1692	144	4	72	980	0	0	4	4	20	0	104	4	60	0	3112
Heavy Trucks	0	32	4		0	20	0		0	0	0		0	0	0		56
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		2	0	0		2
Railroad Stopped Buses																	

Comments:

Report generated on 4/17/2019 1:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix C - Traffic Volume Development Spreadsheets

1200 MLK Redevelopment Weekday Trip Generation

Land Use	ITE LUC	Units	Method	Daily			AM Peak Hour			Noon Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Super Convenience Market/Gas Station	960	5,680 SF	Rate	2,094	2,094	4,188	208	208	416	143	143	286	173	173	346
Pass-by Trips (62% AM/56% PM - Daily/Noon Using Average % of AM/PM)				1,235	1,235	2,470	129	129	258	84	84	168	97	97	194
New Trips				859	859	1,718	79	79	158	59	59	118	76	76	152
Mini-Warehouse	151	100,000 SF	Rate	76	76	152	6	4	10	7	7	14	8	9	17
TOTAL TRIPS				**2,170**	**2,170**	**4,340**	**214**	**212**	**426**	**150**	**150**	**300**	**181**	**182**	**363**
TOTAL NEW TRIPS				**935**	**935**	**1,870**	**85**	**83**	**168**	**66**	**66**	**132**	**84**	**85**	**169**
TOTAL PASS-BY TRIPS				**1,235**	**1,235**	**2,470**	**129**	**129**	**258**	**84**	**84**	**168**	**97**	**97**	**194**

Noon Peak - LUC 960 - Uses 75% of Average of AM/PM Peak Hours
Noon Peak - LUC 151 - Uses Average of AM/PM Peak Hours

Gas Station / Convenience Market Comparison - Total Trips

Land Use	ITE LUC	Units	Method	Daily			AM Peak Hour			Noon Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Super Convenience Market/Gas Station	960	5,680 SF	Rate	2,094	2,094	4,188	208	208	416	143	143	286	173	173	346
Convenience Market with Gas Pumps	853	5,680 SF	Rate	1,773	1,773	3,546	115	116	231	96	96	192	140	140	280
Gas Station with Convenience Market	945	12 Fueling Pos.	Rate	1,232	1,232	2,464	76	74	150	61	59	120	86	82	168

Existing Residential Mobile Home Trip Generation

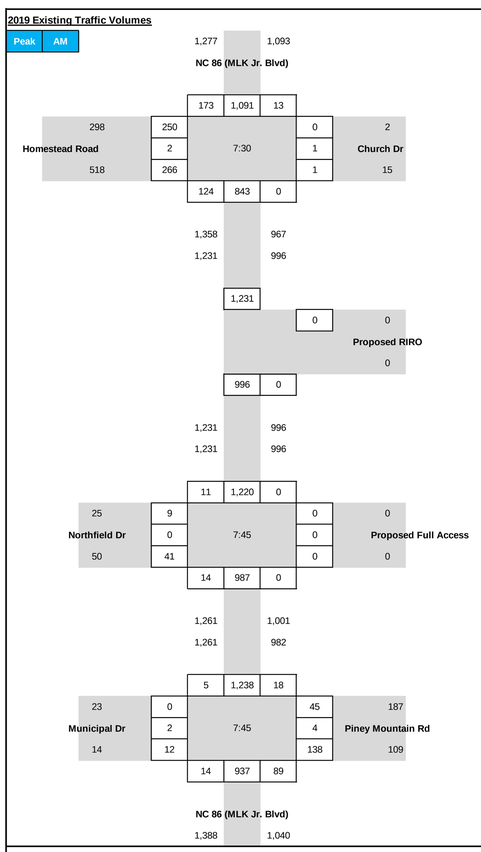
AM Peak Hour			Noon Peak Hour			PM Peak Hour		
Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
14	46	60	8	11	19	33	22	55

2019 Existing Traffic Volumes

4/25/19

Peak: AM

page A1



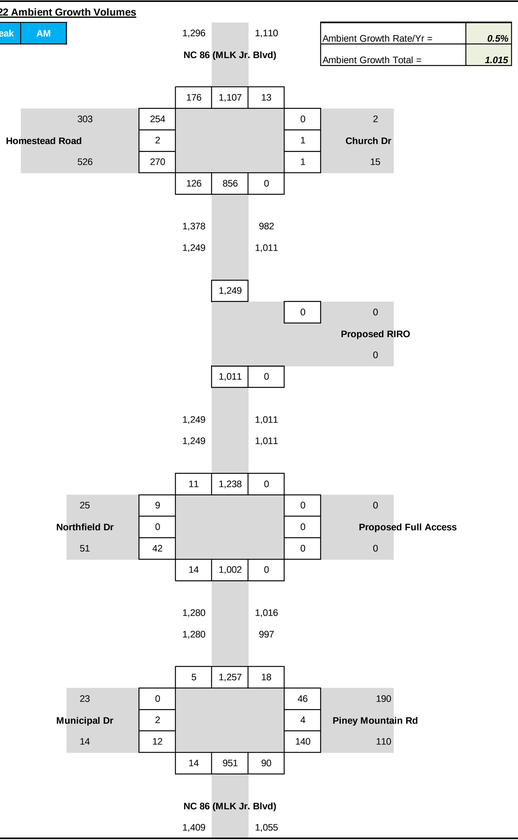
2022 Ambient Growth Volumes

4/25/19

Peak: AM

page A2

Ambient Growth Rate/Yr =	*0.5%*
Ambient Growth Total =	*1.015*

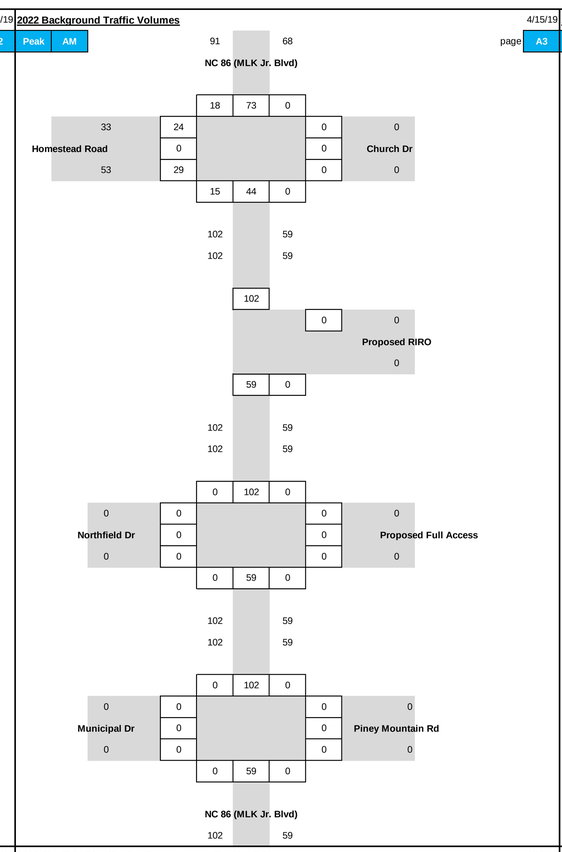


2022 Background Traffic Volumes

4/15/19

Peak: AM

page A3

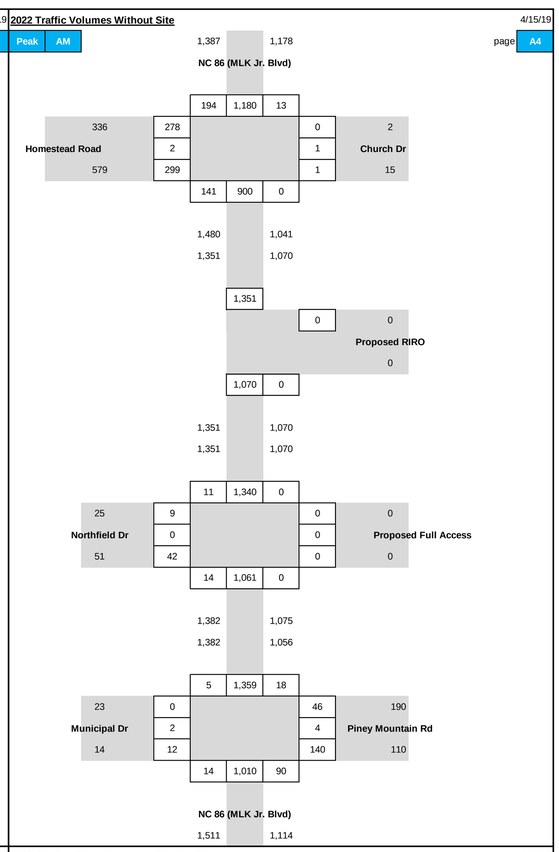


2022 Traffic Volumes Without Site

4/15/19

Peak: AM

page A4

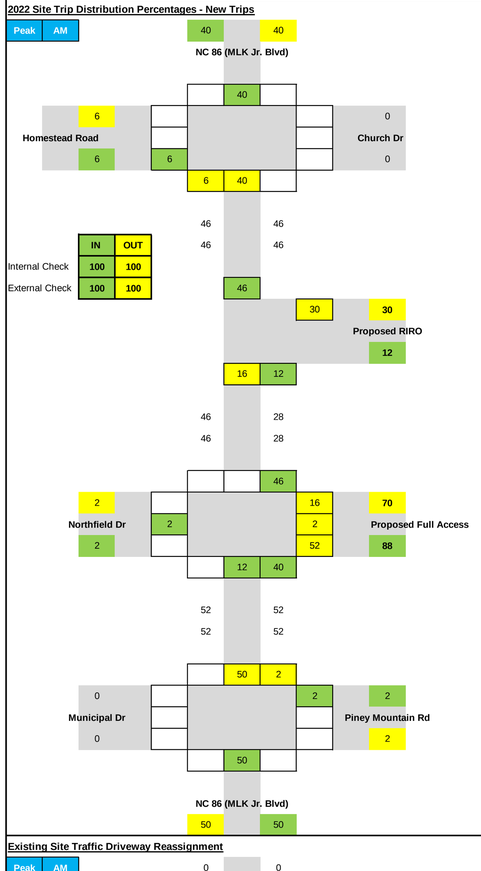


2022 Site Trip Distribution Percentages - New Trips

4/15/19

Peak: AM

page A5

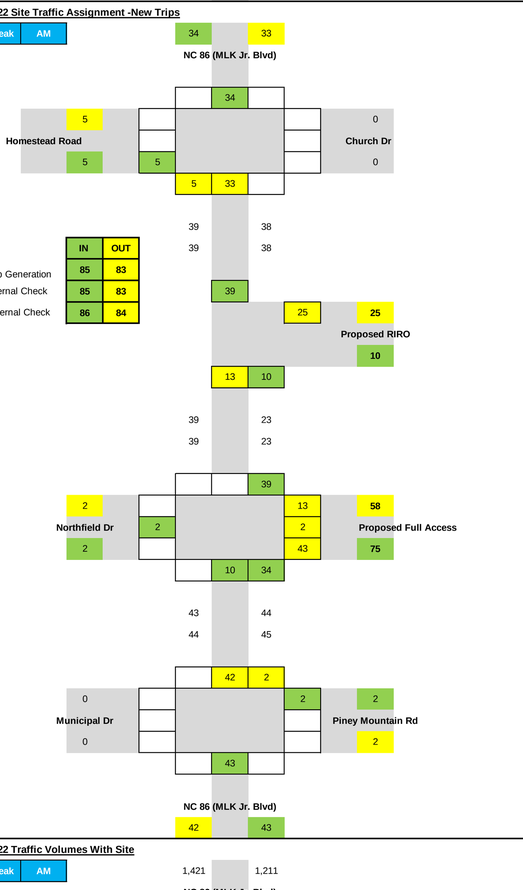


2022 Site Traffic Assignment -New Trips

4/15/19

Peak: AM

page A6

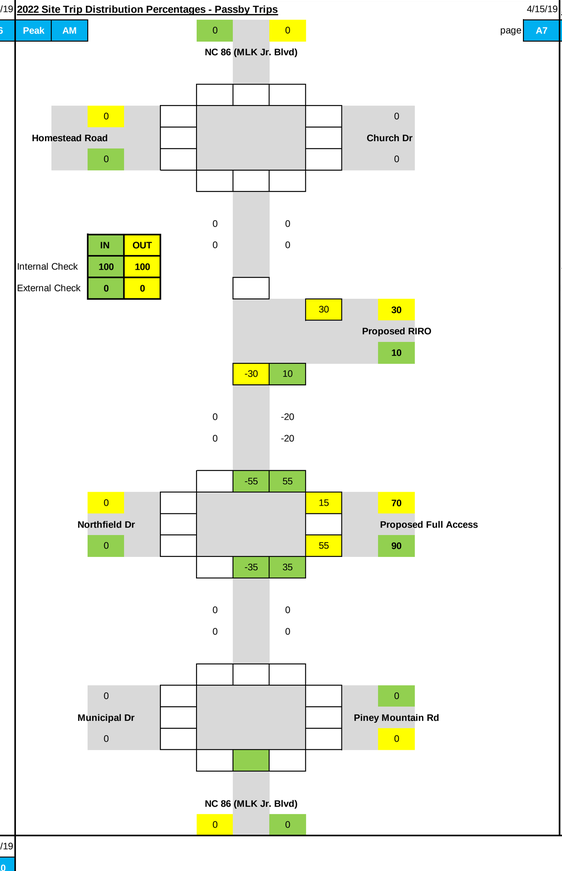


2022 Site Trip Distribution Percentages - Passby Trips

4/15/19

Peak: AM

page A7

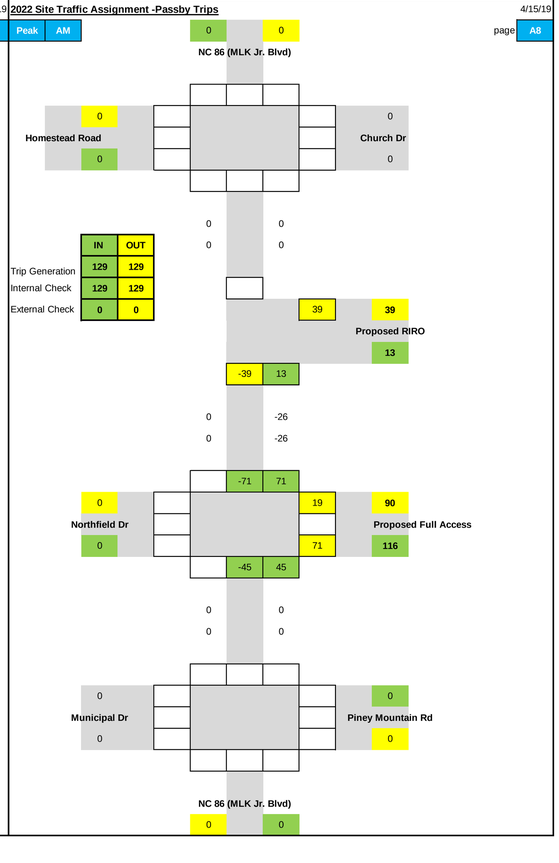


2022 Site Traffic Assignment -Passby Trips

4/15/19

Peak: AM

page A8

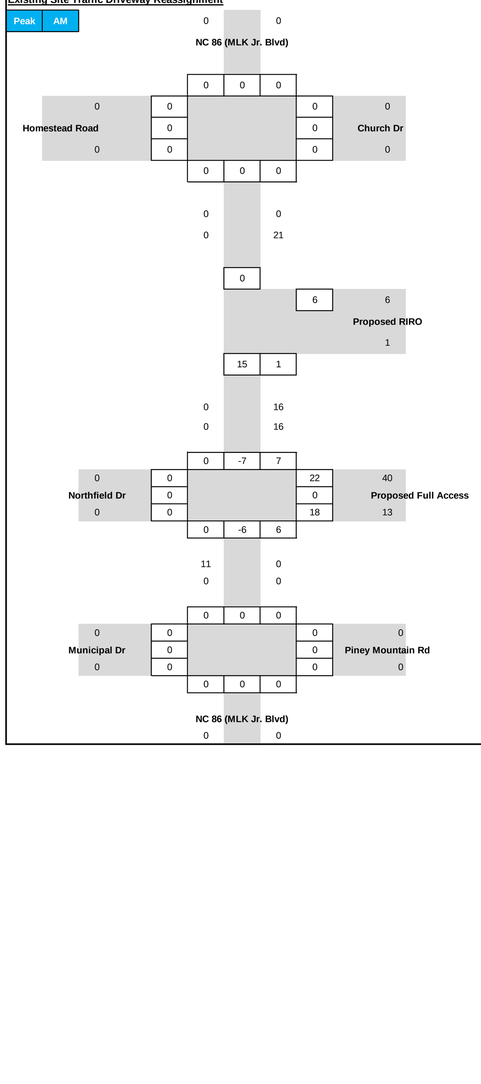


Existing Site Traffic Driveway Reassignment

4/15/19

Peak: AM

page A9

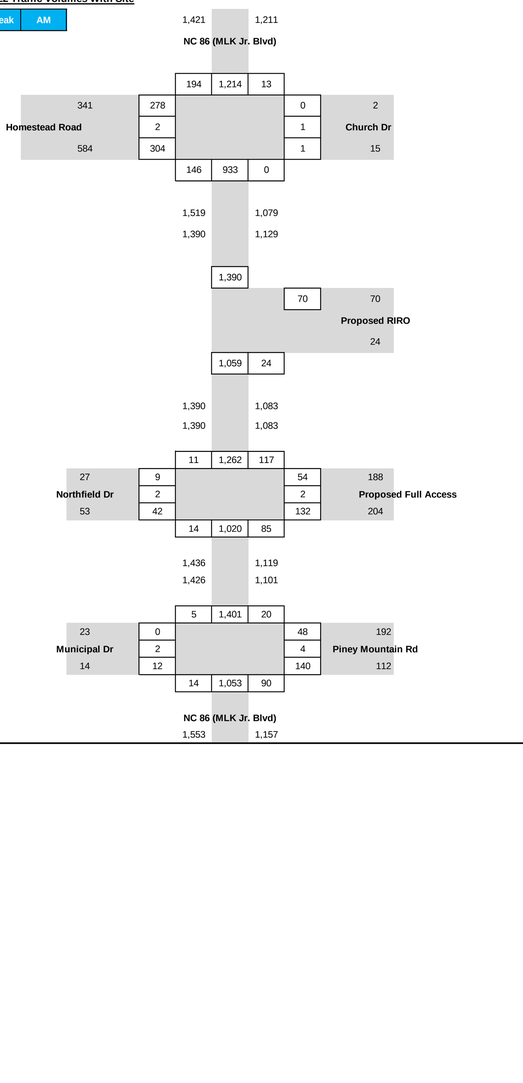


2022 Traffic Volumes With Site

4/15/19

Peak: AM

page A10

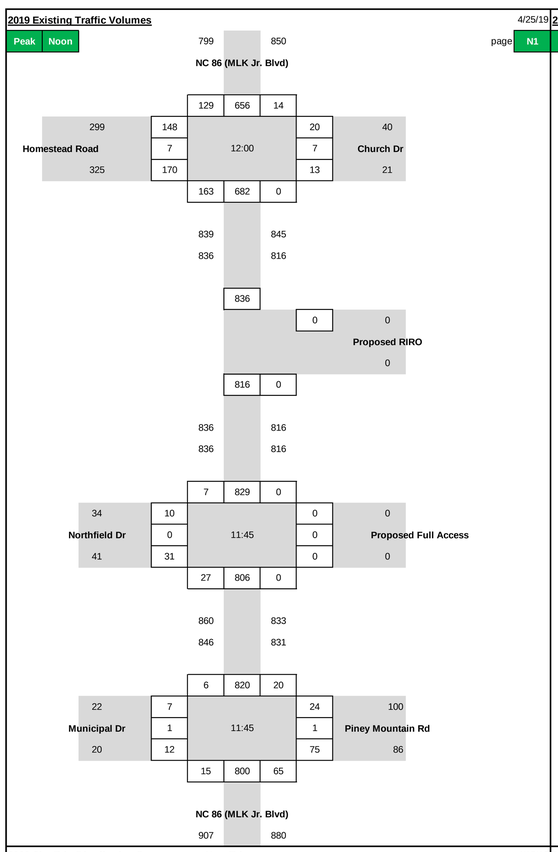


2019 Existing Traffic Volumes

4/25/19

Peak | Noon

page N1



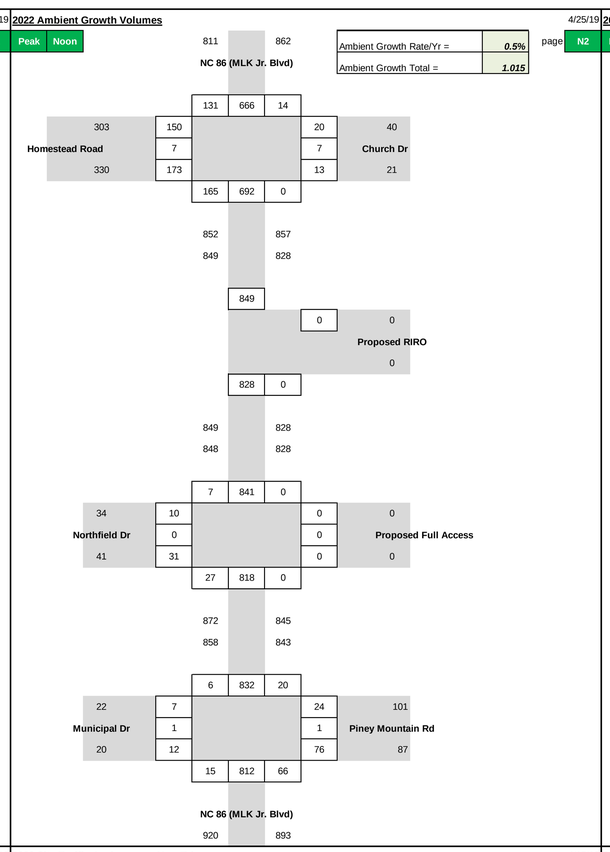
2022 Ambient Growth Volumes

4/25/19

Peak | Noon

page N2

Ambient Growth Rate/Yr =	*0.5%*
Ambient Growth Total =	*1.015*

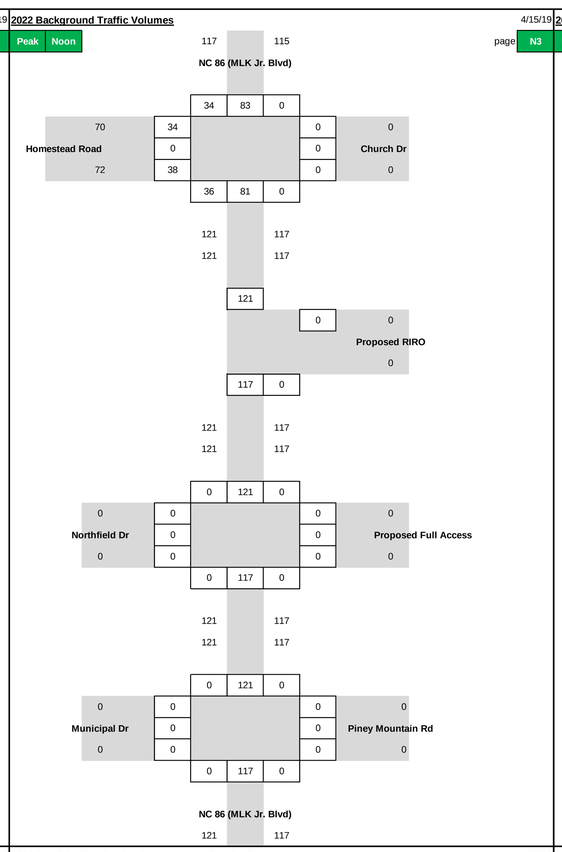


2022 Background Traffic Volumes

4/15/19

Peak | Noon

page N3

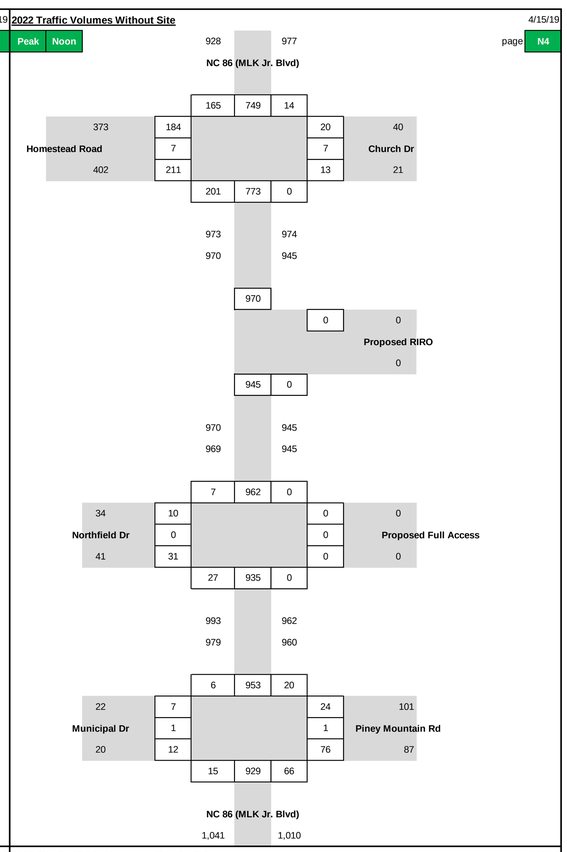


2022 Traffic Volumes Without Site

4/15/19

Peak | Noon

page N4

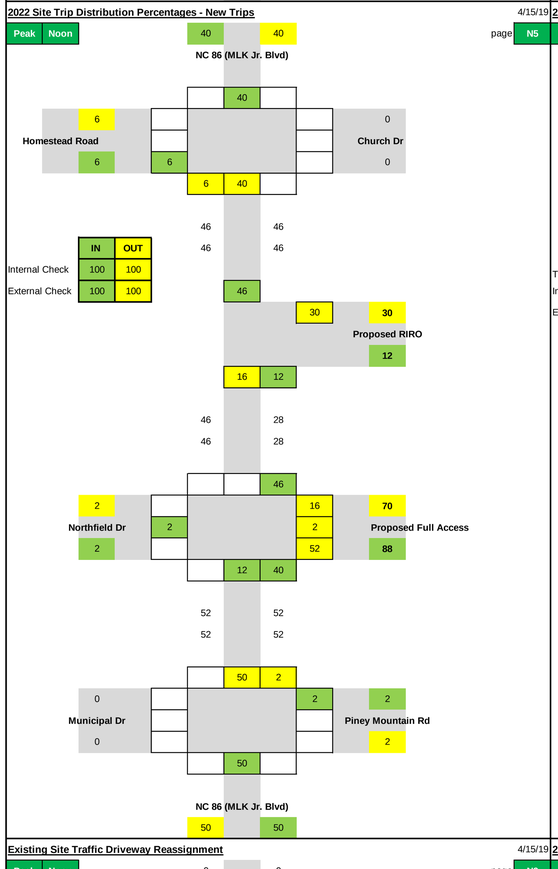


2022 Site Trip Distribution Percentages - New Trips

4/15/19

Peak | Noon

page N5

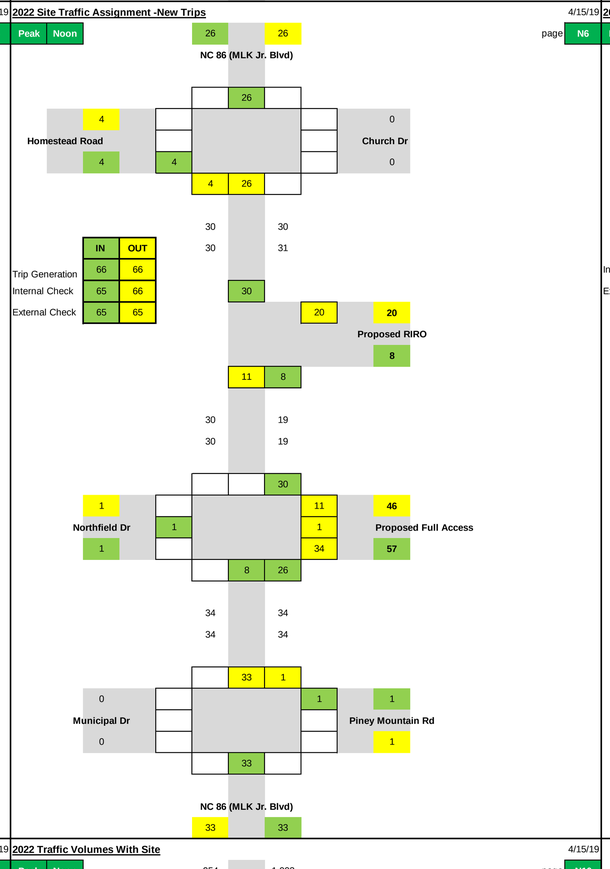


2022 Site Traffic Assignment -New Trips

4/15/19

Peak | Noon

page N6

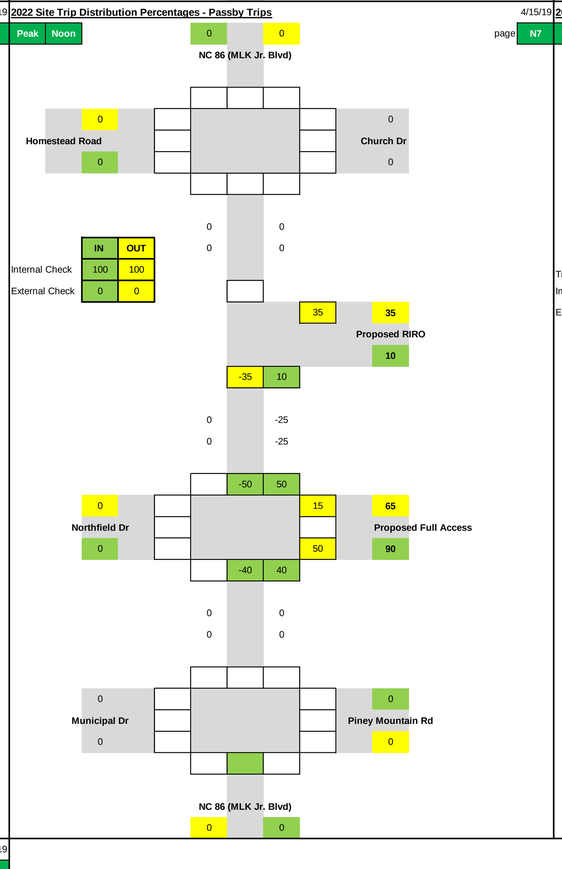


2022 Site Trip Distribution Percentages - Passby Trips

4/15/19

Peak | Noon

page N7

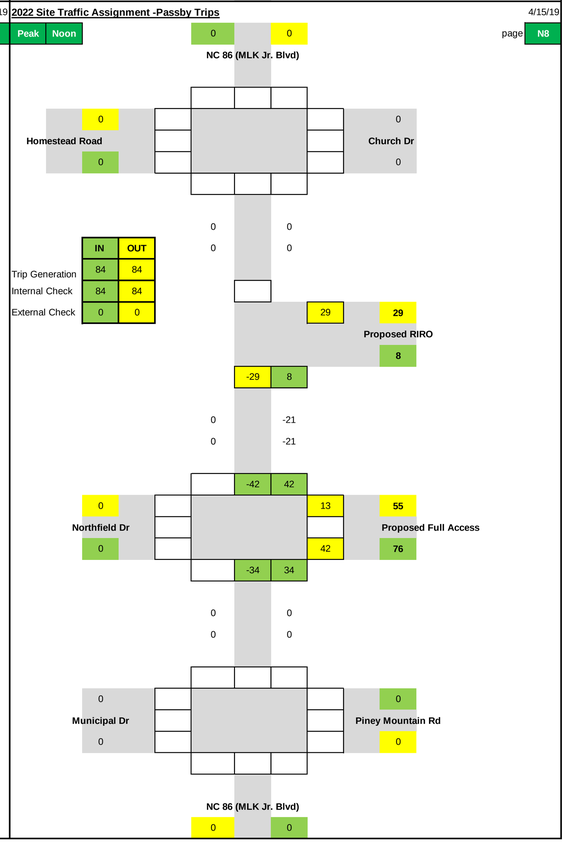


2022 Site Traffic Assignment -Passby Trips

4/15/19

Peak | Noon

page N8

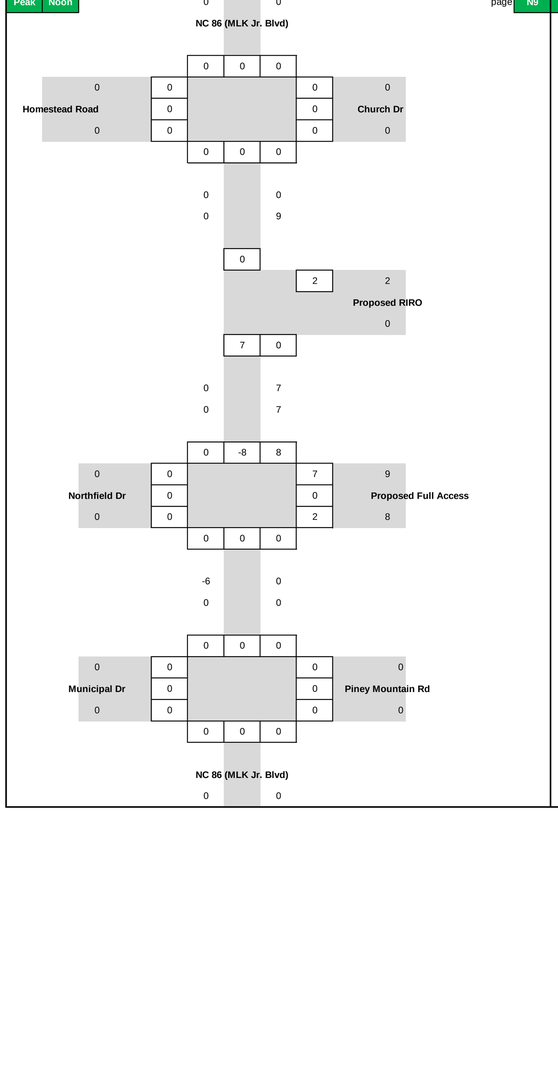


Existing Site Traffic Driveway Reassignment

4/15/19

Peak | Noon

page N9

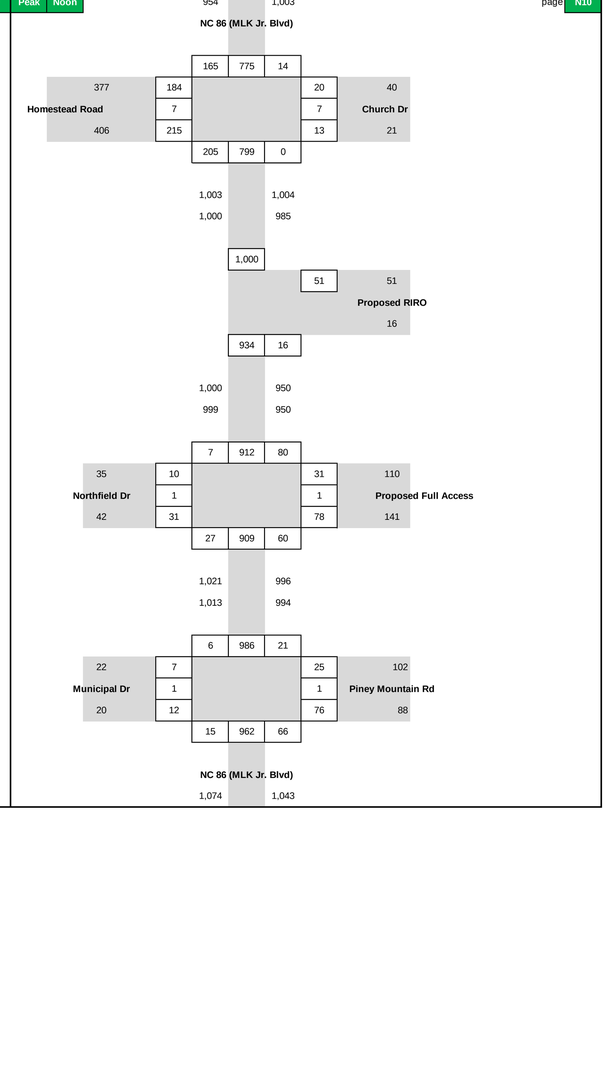


2022 Traffic Volumes With Site

4/15/19

Peak | Noon

page N10

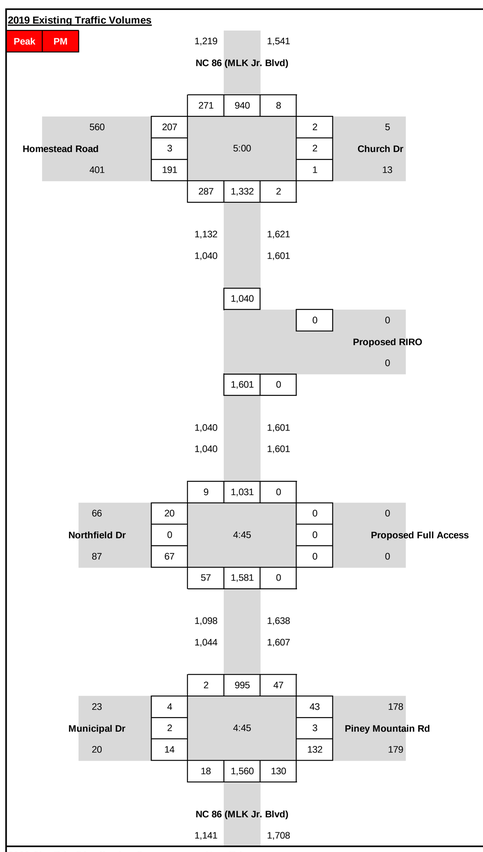


2019 Existing Traffic Volumes

4/25/19

Peak PM

page P1



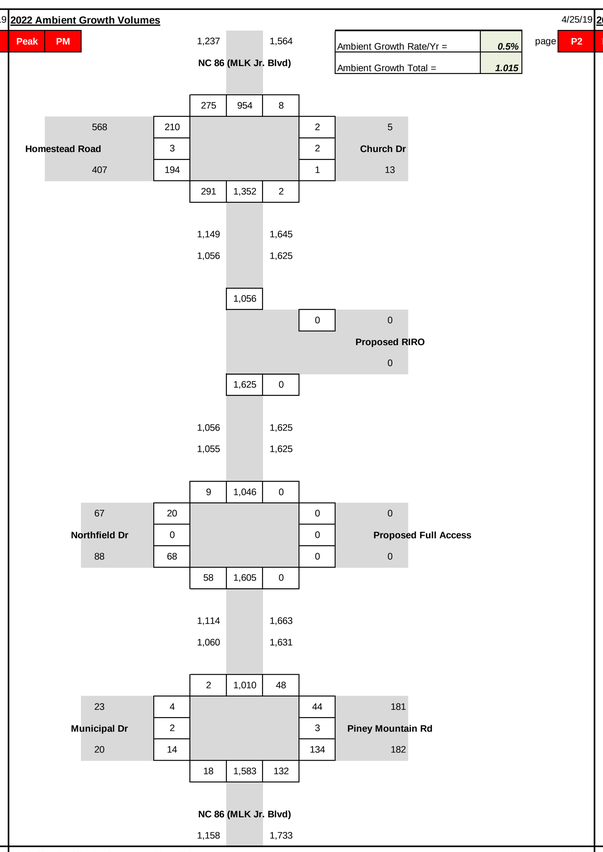
2022 Ambient Growth Volumes

4/25/19

Peak PM

page P2

Ambient Growth Rate/Yr =	*0.5%*
Ambient Growth Total =	*1.015*

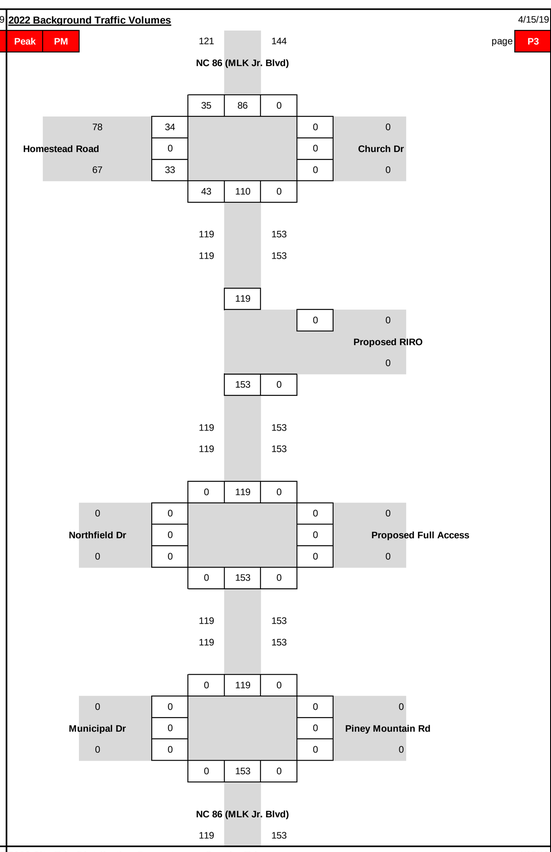


2022 Background Traffic Volumes

4/15/19

Peak PM

page P3

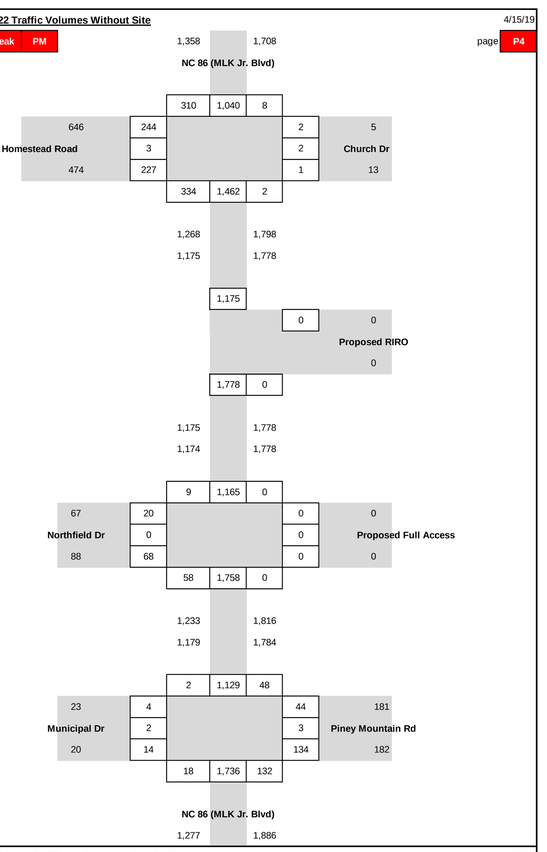


2022 Traffic Volumes Without Site

4/15/19

Peak PM

page P4

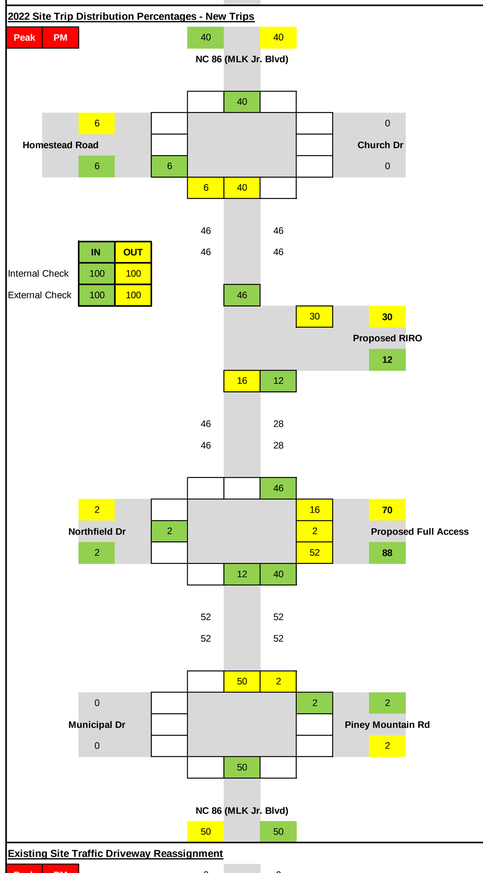


2022 Site Trip Distribution Percentages - New Trips

4/15/19

Peak PM

page P5



2022 Site Traffic Assignment -New Trips

4/15/19

Peak PM

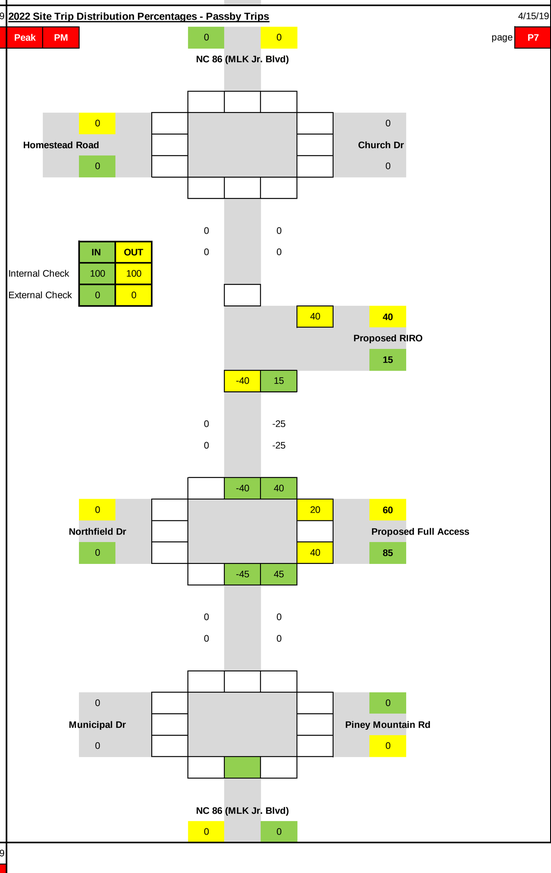
page P6

2022 Site Trip Distribution Percentages - Passby Trips

4/15/19

Peak PM

page P7

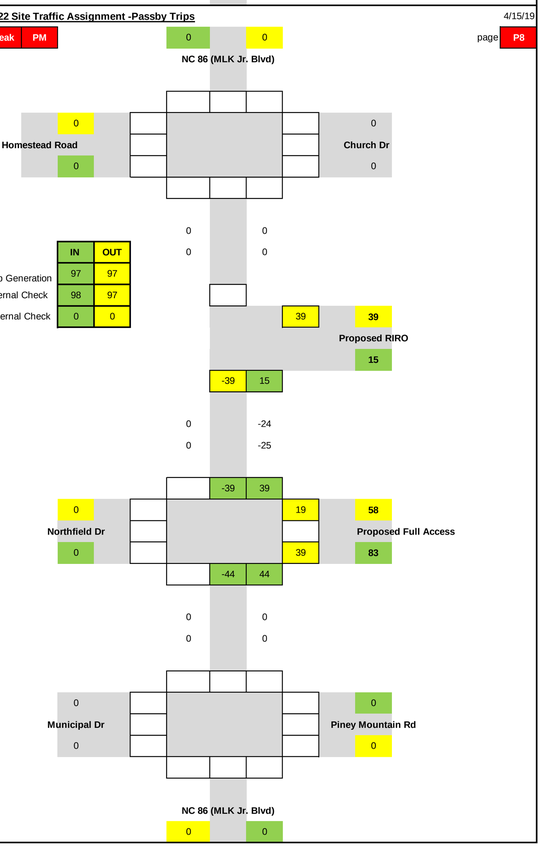


2022 Site Traffic Assignment -Passby Trips

4/15/19

Peak PM

page P8

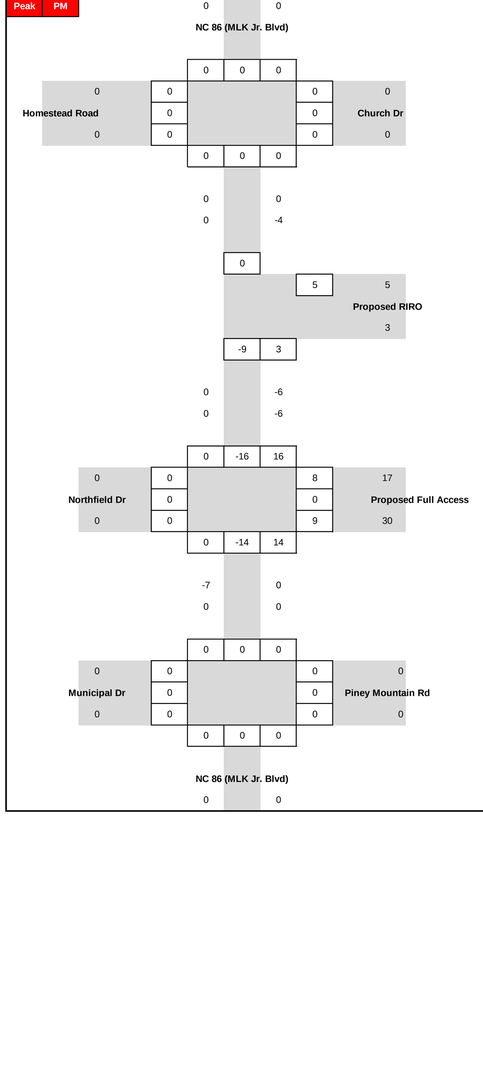


Existing Site Traffic Driveway Reassignment

4/15/19

Peak PM

page P9

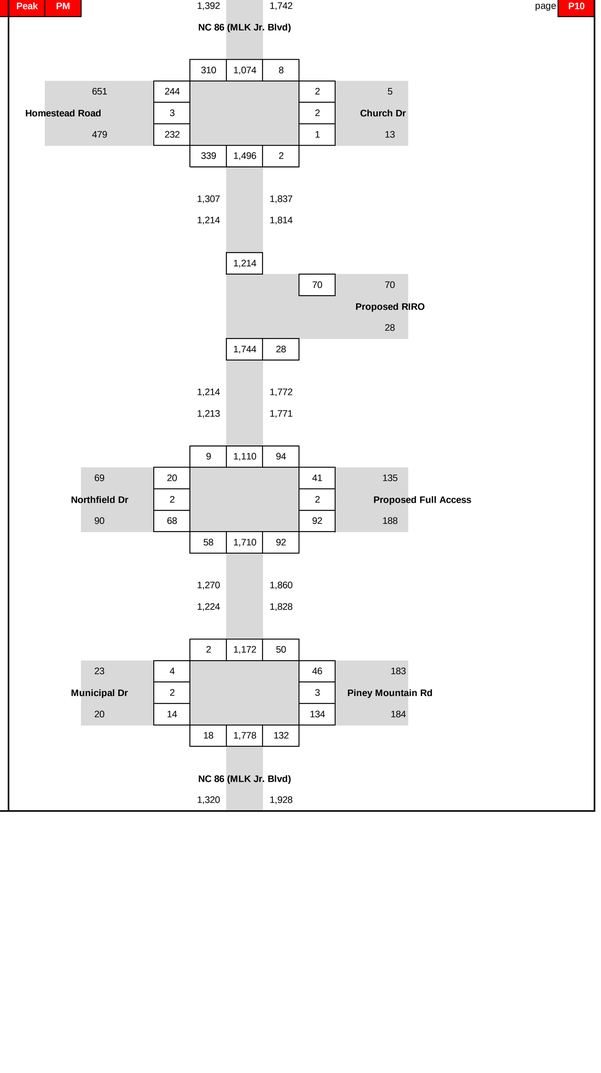


2022 Traffic Volumes With Site

4/15/19

Peak PM

page P10



2022 Total Background Traffic Volumes
4/15/19
Peak AM — page BK1

91 68
NC 86 (MLK Jr. Blvd)
18 73 0
33 24 0 0
Homestead Road 0 0 Church Dr
53 29 0 0
15 44 0
102 59
102 59
102
0 0
Proposed RIRO
0
59 0
102 59
102 59
0 102 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 59 0
102 59
102 59
0 102 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 59 0
NC 86 (MLK Jr. Blvd)
102 59

2022 Total Background Traffic Volumes
4/15/19
Peak Noon — page BK6

117 115
NC 86 (MLK Jr. Blvd)
34 83 0
70 34 0 0
Homestead Road 0 0 Church Dr
72 38 0 0
36 81 0
121 117
121 117
121
0 0
Proposed RIRO
0
117 0
121 117
121 117
0 121 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 117 0
121 117
121 117
0 121 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 117 0
NC 86 (MLK Jr. Blvd)
121 117

2022 Total Background Traffic Volumes
4/15/19
Peak PM — page BK11

121 144
NC 86 (MLK Jr. Blvd)
35 86 0
78 34 0 0
Homestead Road 0 0 Church Dr
67 33 0 0
43 110 0
119 153
119 153
119
0 0
Proposed RIRO
0
153 0
119 153
119 153
0 119 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 153 0
119 153
119 153
0 119 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 153 0
NC 86 (MLK Jr. Blvd)
119 153

2022 Background Traffic Volumes - Active Adult Housing
4/15/19
Peak AM — page BK2

3 6
NC 86 (MLK Jr. Blvd)
3 0 0
10 6 0 0
Homestead Road 0 0 Church Dr
19 13 0 0
7 0 0
13 7
13 7
13
0 0
Proposed RIRO
0
7 0
13 7
13 7
0 13 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 7 0
13 7
13 7
0 13 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 7 0
NC 86 (MLK Jr. Blvd)
13 7

2022 Background Traffic Volumes - Active Adult Housing
4/15/19
Peak Noon — page BK7

5 6
NC 86 (MLK Jr. Blvd)
5 0 0
15 6 0 0
Homestead Road 0 0 Church Dr
18 12 0 0
10 0 0
12 10
12 10
12
0 0
Proposed RIRO
0
10 0
12 10
12 10
0 12 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 10 0
12 10
12 10
0 12 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 10 0
NC 86 (MLK Jr. Blvd)
12 10

2022 Background Traffic Volumes - Active Adult Housing
4/15/19
Peak PM — page BK12

7 6
NC 86 (MLK Jr. Blvd)
7 0 0
20 6 0 0
Homestead Road 0 0 Church Dr
17 11 0 0
13 0 0
11 13
11 13
11
0 0
Proposed RIRO
0
13 0
11 13
11 13
0 11 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 13 0
11 13
11 13
0 11 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 13 0
NC 86 (MLK Jr. Blvd)
11 13

2022 Background Traffic Volumes - Carraway Village Phase 1
4/15/19
Peak AM — page BK3

59 53
NC 86 (MLK Jr. Blvd)
10 49 0
10 12 0 0
Homestead Road 0 0 Church Dr
12 0 0 0
0 41 0
49 41
49 41
49
0 0
Proposed RIRO
0
41 0
49 41
49 41
0 49 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 41 0
49 41
49 41
0 49 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 41 0
NC 86 (MLK Jr. Blvd)
49 41

2022 Background Traffic Volumes - Carraway Village Phase 1
4/15/19
Peak Noon — page BK8

81 79
NC 86 (MLK Jr. Blvd)
15 66 0
15 14 0 0
Homestead Road 0 0 Church Dr
14 0 0 0
0 65 0
66 65
66 65
66
0 0
Proposed RIRO
0
65 0
66 65
66 65
0 66 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 65 0
66 65
66 65
0 66 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 65 0
NC 86 (MLK Jr. Blvd)
66 65

2022 Background Traffic Volumes - Carraway Village Phase 1
4/15/19
Peak PM — page BK13

91 94
NC 86 (MLK Jr. Blvd)
13 78 0
13 14 0 0
Homestead Road 0 0 Church Dr
14 0 0 0
0 80 0
78 80
78 80
78
0 0
Proposed RIRO
0
80 0
78 80
78 80
0 78 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 80 0
78 80
78 80
0 78 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 80 0
NC 86 (MLK Jr. Blvd)
78 80

2022 Background Traffic Volumes - CH Municipal Services Complex
4/15/19
Peak AM — page BK4

24 3
NC 86 (MLK Jr. Blvd)
0 24 0
1 0 0 0
Homestead Road 0 0 Church Dr
8 8 0 0
1 3 0
32 4
32 4
32
0 0
Proposed RIRO
0
4 0
32 4
32 4
0 32 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 4 0
32 4
32 4
0 32 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 4 0
NC 86 (MLK Jr. Blvd)
32 4

2022 Background Traffic Volumes - CH Municipal Services Complex
4/15/19
Peak Noon — page BK9

17 16
NC 86 (MLK Jr. Blvd)
0 17 0
5 0 0 0
Homestead Road 0 0 Church Dr
5 5 0 0
5 16 0
22 21
22 21
22
0 0
Proposed RIRO
0
21 0
22 21
22 21
0 22 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 21 0
22 21
22 21
0 22 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 21 0
NC 86 (MLK Jr. Blvd)
22 21

2022 Background Traffic Volumes - CH Municipal Services Complex
4/15/19
Peak PM — page BK14

8 30
NC 86 (MLK Jr. Blvd)
0 8 0
8 0 0 0
Homestead Road 0 0 Church Dr
2 2 0 0
8 30 0
10 38
10 38
10
0 0
Proposed RIRO
0
38 0
10 38
10 38
0 10 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 38 0
10 38
10 38
0 10 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 38 0
NC 86 (MLK Jr. Blvd)
10 38

2022 Background Traffic Volumes - BridgePoint
4/15/19
Peak AM — page BK5

5 6
NC 86 (MLK Jr. Blvd)
5 0 0
12 6 0 0
Homestead Road 0 0 Church Dr
14 8 0 0
7 0 0
8 7
8 7
8
0 0
Proposed RIRO
0
7 0
8 7
8 7
0 8 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 7 0
8 7
8 7
0 8 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 7 0
NC 86 (MLK Jr. Blvd)
8 7

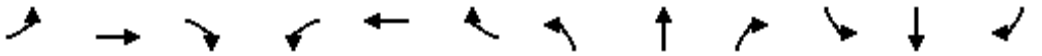
2022 Background Traffic Volumes - BridgePoint
4/15/19
Peak Noon — page BK10

14 14
NC 86 (MLK Jr. Blvd)
14 0 0
35 14 0 0
Homestead Road 0 0 Church Dr
35 21 0 0
21 0 0
21 21
21 21
21
0 0
Proposed RIRO
0
21 0
21 21
21 21
0 21 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 21 0
21 21
21 21
0 21 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 21 0
NC 86 (MLK Jr. Blvd)
21 21

2022 Background Traffic Volumes - BridgePoint
4/15/19
Peak PM — page BK15

15 14
NC 86 (MLK Jr. Blvd)
15 0 0
37 14 0 0
Homestead Road 0 0 Church Dr
34 20 0 0
22 0 0
20 22
20 22
20
0 0
Proposed RIRO
0
22 0
20 22
20 22
0 20 0
0 0 0 0
Northfield Dr 0 0 Proposed Full Access
0 0 0 0
0 22 0
20 22
20 22
0 20 0
0 0 0 0
Municipal Dr 0 0 Piney Mountain Rd
0 0 0 0
0 22 0
NC 86 (MLK Jr. Blvd)
20 22

Appendix D – Synchro Signalized Capacity Analysis Output

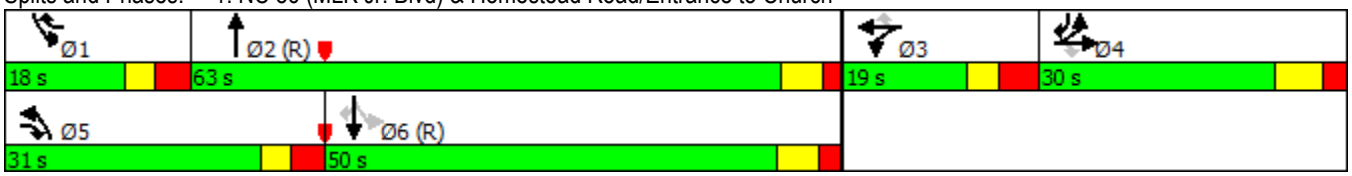


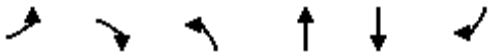
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	2	266	1	1	0	124	843	0	13	1091	173
Future Volume (vph)	250	2	266	1	1	0	124	843	0	13	1091	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.98	0.99						1.00		
Frt			0.850									0.850
Flt Protected	0.950	0.953		0.950			0.950			0.950		
Satd. Flow (prot)	1698	1704	1600	1664	1752	1844	3367	3471	0	1736	3471	1553
Flt Permitted	0.950	0.953		0.950			0.950			0.290		
Satd. Flow (perm)	1697	1702	1568	1653	1752	1844	3367	3471	0	528	3471	1553
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			1193			1007	
Travel Time (s)		18.2			24.0			23.2			19.6	
Confl. Peds. (#/hr)	1		7	7		1			4	4		
Peak Hour Factor	0.92	0.92	0.92	0.50	0.50	0.50	0.91	0.91	0.91	0.97	0.97	0.97
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	272	2	289	2	2	0	136	926	0	13	1125	178
Shared Lane Traffic (%)	50%			10%								
Lane Group Flow (vph)	136	138	289	2	2	0	136	926	0	13	1125	178
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	30.0	30.0	31.0	19.0	19.0	18.0	31.0	63.0		18.0	50.0	30.0
Total Split (%)	23.1%	23.1%	23.8%	14.6%	14.6%	13.8%	23.8%	48.5%		13.8%	38.5%	23.1%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	16.1	16.1	26.8	8.9	8.9		10.7	95.7		93.8	85.4	105.5
Actuated g/C Ratio	0.12	0.12	0.21	0.07	0.07		0.08	0.74		0.72	0.66	0.81
v/c Ratio	0.65	0.65	0.89	0.02	0.02		0.49	0.36		0.03	0.49	0.14
Control Delay	67.8	68.2	74.0	57.0	57.0		69.2	6.2		6.1	14.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	67.8	68.2	74.0	57.0	57.0		69.2	6.2		6.1	14.4	2.9
LOS	E	E	E	E	E		E	A		A	B	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		71.1			57.0			14.3			12.7	
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	116	117	229	2	2		59	85		2	210	19
Queue Length 95th (ft)	181	184	290	6	6		97	135		11	452	46
Internal Link Dist (ft)		852			625			1113			927	
Turn Bay Length (ft)	125		550	150			400			225		325
Base Capacity (vph)	326	327	514	179	188		673	2555		520	2280	1366
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.42	0.42	0.56	0.01	0.01		0.20	0.36		0.03	0.49	0.13

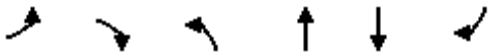
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 26 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 24.5		Intersection LOS: C	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	41	14	987	1220	11
Future Volume (vph)	9	41	14	987	1220	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	1000			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98		1.00		1.00	
Frt	0.889				0.999	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1605	0	1719	3438	3467	0
Flt Permitted	0.991		0.191			
Satd. Flow (perm)	1605	0	345	3438	3467	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			35	35	
Link Distance (ft)	642			2573	1193	
Travel Time (s)	17.5			50.1	23.2	
Confl. Peds. (#/hr)		8	13			13
Peak Hour Factor	0.69	0.69	0.94	0.94	0.92	0.92
Heavy Vehicles (%)	2%	2%	5%	5%	4%	4%
Adj. Flow (vph)	13	59	15	1050	1326	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	0	15	1050	1338	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		10.0	10.0	10.0	
Minimum Split (s)	27.0		17.0	17.0	17.0	
Total Split (s)	30.0		100.0	100.0	100.0	
Total Split (%)	23.1%		76.9%	76.9%	76.9%	
Yellow Time (s)	3.0		4.2	4.2	4.2	
All-Red Time (s)	2.6		1.4	1.4	1.5	
Lost Time Adjust (s)	-0.6		-0.6	-0.6	-0.7	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	
Act Effct Green (s)	10.3		113.2	113.2	113.2	
Actuated g/C Ratio	0.08		0.87	0.87	0.87	
v/c Ratio	0.57		0.05	0.35	0.44	
Control Delay	74.1		0.6	1.7	1.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	74.1		0.6	1.7	1.3	
LOS	E		A	A	A	
Approach Delay	74.1			1.7	1.3	

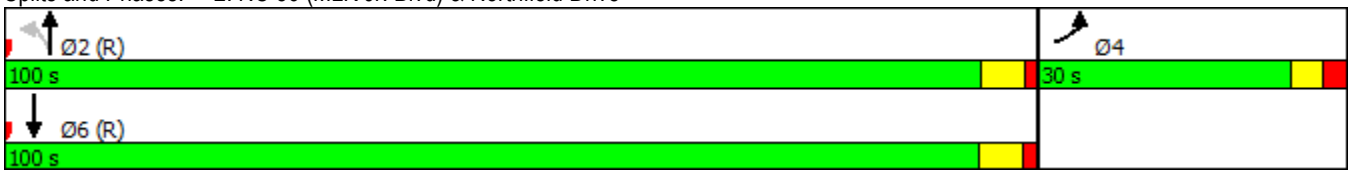


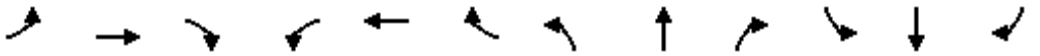
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	E			A	A	
Queue Length 50th (ft)	60		0	2	84	
Queue Length 95th (ft)	81		m0	3	1	
Internal Link Dist (ft)	562			2493	1113	
Turn Bay Length (ft)			1000			
Base Capacity (vph)	308		300	2993	3018	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.23		0.05	0.35	0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 129 (99%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 3.6		Intersection LOS: A	
Intersection Capacity Utilization 51.0%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive



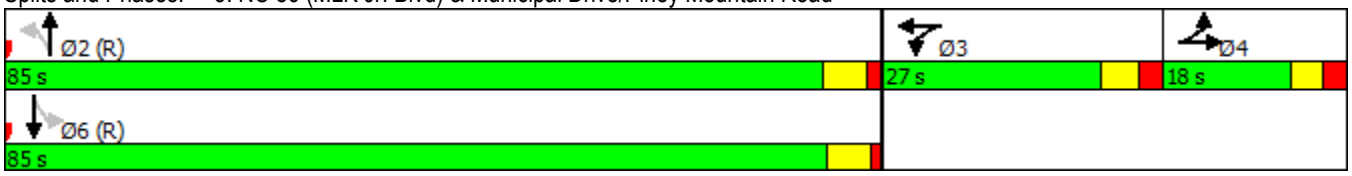


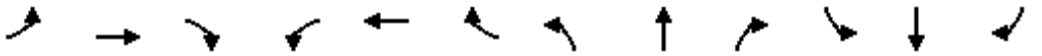
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	12	138	4	45	14	937	89	18	1238	5
Future Volume (vph)	0	2	12	138	4	45	14	937	89	18	1238	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00	1.00	
Frt		0.873			0.862			0.987			0.999	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1727	1508	0	3364	1574	0	1744	3435	0	1752	3501	0
Flt Permitted				0.950			0.156			0.243		
Satd. Flow (perm)	1727	1508	0	3364	1574	0	286	3435	0	448	3501	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Confl. Peds. (#/hr)							1		3	3		1
Peak Hour Factor	0.44	0.44	0.44	0.79	0.79	0.79	0.97	0.97	0.97	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	0	5	27	175	5	57	14	966	92	20	1391	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	175	62	0	14	1058	0	20	1397	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	18.0	18.0		27.0	27.0		85.0	85.0		85.0	85.0	
Total Split (%)	13.8%	13.8%		20.8%	20.8%		65.4%	65.4%		65.4%	65.4%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		8.2		13.0	13.0		98.8	98.8		98.8	98.8	
Actuated g/C Ratio		0.06		0.10	0.10		0.76	0.76		0.76	0.76	
v/c Ratio		0.34		0.52	0.39		0.06	0.41		0.06	0.52	
Control Delay		67.8		60.8	61.6		7.0	6.9		4.6	7.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		67.8		60.8	61.6		7.0	6.9		4.6	7.9	
LOS		E		E	E		A	A		A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		67.8			61.0			6.9			7.9	
Approach LOS		E			E			A			A	
Queue Length 50th (ft)		26		73	50		3	165		4	411	
Queue Length 95th (ft)		29		94	82		12	240		m7	155	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)				250			700			1000		
Base Capacity (vph)		150		569	266		217	2611		340	2662	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.21		0.31	0.23		0.06	0.41		0.06	0.52	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 75 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road



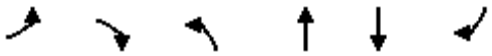


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	7	170	13	7	20	163	682	0	14	656	129
Future Volume (vph)	148	7	170	13	7	20	163	682	0	14	656	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	0.99	1.00					0.99		
Frt			0.850			0.850						0.850
Flt Protected	0.950	0.957		0.950	0.986		0.950			0.950		
Satd. Flow (prot)	1651	1663	1555	1664	1727	1567	3367	3471	0	1736	3471	1553
Flt Permitted	0.950	0.957		0.950	0.986		0.950			0.345		
Satd. Flow (perm)	1651	1663	1522	1650	1723	1567	3367	3471	0	627	3471	1553
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			1193			1007	
Travel Time (s)		18.2			24.0			23.2			19.6	
Confl. Peds. (#/hr)			9	9					7	7		
Peak Hour Factor	0.90	0.90	0.90	0.56	0.56	0.56	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	164	8	189	23	13	36	181	758	0	16	729	143
Shared Lane Traffic (%)	48%			23%								
Lane Group Flow (vph)	85	87	189	18	18	36	181	758	0	16	729	143
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	30.0	30.0	25.0	19.0	19.0	18.0	25.0	53.0		18.0	46.0	30.0
Total Split (%)	25.0%	25.0%	20.8%	15.8%	15.8%	15.0%	20.8%	44.2%		15.0%	38.3%	25.0%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	12.3	12.3	23.6	9.1	9.1	13.9	11.3	78.4		81.2	72.8	87.1
Actuated g/C Ratio	0.10	0.10	0.20	0.08	0.08	0.12	0.09	0.65		0.68	0.61	0.73
v/c Ratio	0.50	0.51	0.63	0.14	0.14	0.20	0.57	0.33		0.03	0.35	0.13
Control Delay	60.7	61.0	48.9	54.5	54.2	33.6	58.7	10.3		6.9	14.2	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	60.7	61.0	48.9	54.5	54.2	33.6	58.7	10.3		6.9	14.2	3.9
LOS	E	E	D	D	D	C	E	B		A	B	A

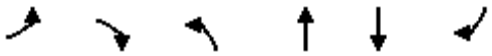
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		54.6			44.0			19.6			12.4	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	67	68	128	13	13	19	64	156		3	155	17
Queue Length 95th (ft)	118	121	186	24	24	25	87	223		12	235	34
Internal Link Dist (ft)		852			625			1113			927	
Turn Bay Length (ft)	125		550	150		75	400			225		325
Base Capacity (vph)	343	346	415	194	201	241	561	2268		568	2106	1292
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.25	0.25	0.46	0.09	0.09	0.15	0.32	0.33		0.03	0.35	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 75 (63%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 52.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church



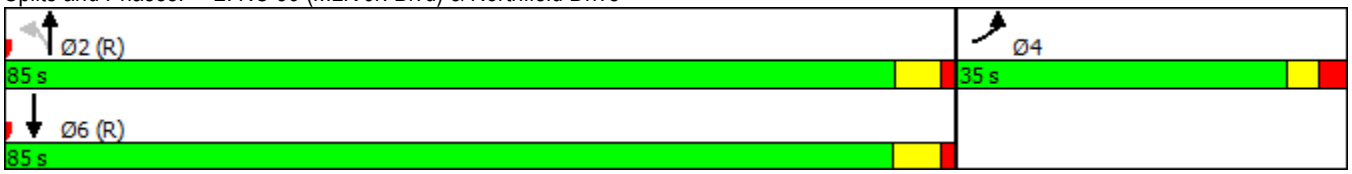
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	31	27	806	829	7
Future Volume (vph)	10	31	27	806	829	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	1000			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98		1.00		1.00	
Frt	0.899				0.999	
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1617	0	1719	3438	3434	0
Flt Permitted	0.988		0.316			
Satd. Flow (perm)	1617	0	570	3438	3434	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			35	35	
Link Distance (ft)	642			2573	1193	
Travel Time (s)	17.5			50.1	23.2	
Confl. Peds. (#/hr)		11	16			16
Peak Hour Factor	0.64	0.64	0.96	0.96	0.94	0.94
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%
Adj. Flow (vph)	16	48	28	840	882	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	28	840	889	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		10.0	10.0	10.0	
Minimum Split (s)	27.0		17.0	17.0	17.0	
Total Split (s)	35.0		85.0	85.0	85.0	
Total Split (%)	29.2%		70.8%	70.8%	70.8%	
Yellow Time (s)	3.0		4.2	4.2	4.2	
All-Red Time (s)	2.6		1.4	1.4	1.5	
Lost Time Adjust (s)	-0.6		-0.6	-0.6	-0.7	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	
Act Effct Green (s)	9.5		104.0	104.0	104.0	
Actuated g/C Ratio	0.08		0.87	0.87	0.87	
v/c Ratio	0.50		0.06	0.28	0.30	
Control Delay	66.0		2.3	2.2	1.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	66.0		2.3	2.2	1.7	
LOS	E		A	A	A	
Approach Delay	66.0			2.2	1.7	

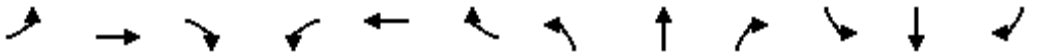


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	E			A	A	
Queue Length 50th (ft)	49		3	52	41	
Queue Length 95th (ft)	65		9	86	66	
Internal Link Dist (ft)	562			2493	1113	
Turn Bay Length (ft)			1000			
Base Capacity (vph)	404		494	2980	2976	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.16		0.06	0.28	0.30	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 40.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive



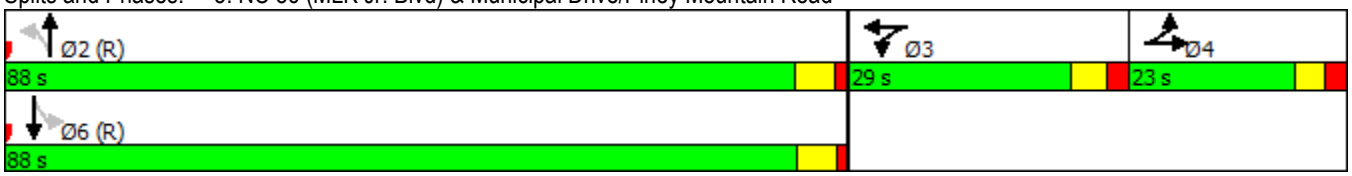


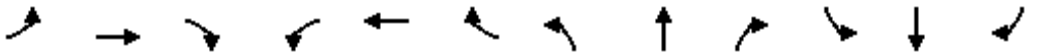
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	1	12	75	1	24	15	800	65	20	820	6
Future Volume (vph)	7	1	12	75	1	24	15	800	65	20	820	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.858			0.856			0.989			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1482	0	3364	1563	0	1728	3417	0	1719	3435	0
Flt Permitted	0.950			0.950			0.284			0.300		
Satd. Flow (perm)	1641	1482	0	3364	1563	0	516	3417	0	543	3435	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Peak Hour Factor	0.71	0.71	0.71	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	10	1	17	81	1	26	16	833	68	23	943	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	18	0	81	27	0	16	901	0	23	950	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	23.0	23.0		29.0	29.0		88.0	88.0		88.0	88.0	
Total Split (%)	16.4%	16.4%		20.7%	20.7%		62.9%	62.9%		62.9%	62.9%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	7.8	7.8		9.8	9.8		112.5	112.5		112.5	112.5	
Actuated g/C Ratio	0.06	0.06		0.07	0.07		0.80	0.80		0.80	0.80	
v/c Ratio	0.11	0.22		0.34	0.25		0.04	0.33		0.05	0.34	
Control Delay	65.6	69.8		65.7	66.6		4.5	4.7		4.5	4.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	65.6	69.8		65.7	66.6		4.5	4.7		4.5	4.8	
LOS	E	E		E	E		A	A		A	A	
Approach Delay		68.3			65.9			4.7			4.8	
Approach LOS		E			E			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	9	16		37	24		3	117		4	126	
Queue Length 95th (ft)	23	34		63	56		10	160		13	163	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)	100			250			700			1000		
Base Capacity (vph)	210	190		576	267		414	2745		436	2759	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.09		0.14	0.10		0.04	0.33		0.05	0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 133 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 41.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road



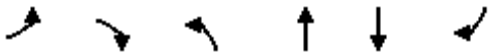


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	3	191	1	2	2	287	1332	2	8	940	271
Future Volume (vph)	207	3	191	1	2	2	287	1332	2	8	940	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.97	0.98		0.99	1.00	1.00				0.98
Frt			0.850			0.850						0.850
Flt Protected	0.950	0.954		0.950			0.950			0.950		
Satd. Flow (prot)	1748	1756	1647	1664	1752	1567	3433	3539	0	1770	3539	1583
Flt Permitted	0.950	0.954		0.950			0.950			0.154		
Satd. Flow (perm)	1745	1752	1591	1633	1752	1546	3428	3539	0	287	3539	1559
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			1193			1007	
Travel Time (s)		18.2			24.0			23.2			19.6	
Confl. Peds. (#/hr)	2		18	18		2	3		17	17		3
Peak Hour Factor	0.91	0.91	0.91	0.42	0.42	0.42	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	227	3	210	2	5	5	312	1448	2	8	979	282
Shared Lane Traffic (%)	49%			10%								
Lane Group Flow (vph)	116	114	210	2	5	5	312	1450	0	8	979	282
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	33.0	33.0	30.0	21.0	21.0	17.0	30.0	69.0		17.0	56.0	33.0
Total Split (%)	23.6%	23.6%	21.4%	15.0%	15.0%	12.1%	21.4%	49.3%		12.1%	40.0%	23.6%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	14.9	14.9	32.2	8.9	8.9	10.2	17.3	106.9		98.4	90.0	105.0
Actuated g/C Ratio	0.11	0.11	0.23	0.06	0.06	0.07	0.12	0.76		0.70	0.64	0.75
v/c Ratio	0.62	0.61	0.56	0.02	0.05	0.04	0.74	0.54		0.03	0.43	0.24
Control Delay	73.8	73.0	48.7	62.0	62.5	47.5	74.9	6.2		6.2	14.9	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	73.8	73.0	48.7	62.0	62.5	47.5	74.9	6.2		6.2	14.9	4.6
LOS	E	E	D	E	E	D	E	A		A	B	A
Approach Delay		61.6			56.2			18.3			12.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	108	106	162	2	4	4	155	116		1	202	50
Queue Length 95th (ft)	171	169	218	5	9	6	205	208		8	391	91
Internal Link Dist (ft)		852			625			1113			927	
Turn Bay Length (ft)	125		550	150		75	400			225		325
Base Capacity (vph)	349	351	463	190	200	154	613	2703		336	2276	1319
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.33	0.32	0.45	0.01	0.03	0.03	0.51	0.54		0.02	0.43	0.21

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 80 (57%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church



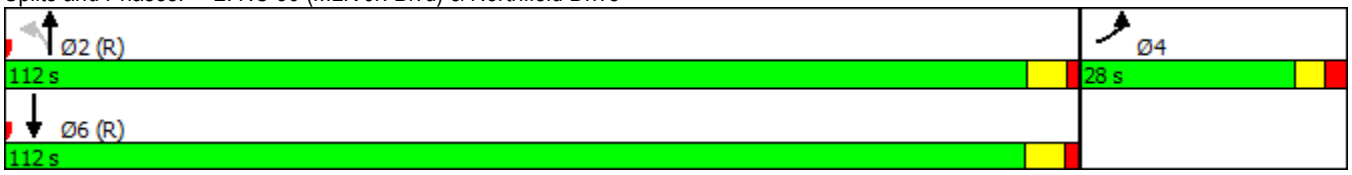
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	67	57	1581	1031	9
Future Volume (vph)	20	67	57	1581	1031	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	1000			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.91		0.99		1.00	
Frt	0.896				0.999	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1504	0	1770	3539	3500	0
Flt Permitted	0.989		0.250			
Satd. Flow (perm)	1502	0	463	3539	3500	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			35	35	
Link Distance (ft)	642			2573	1193	
Travel Time (s)	17.5			50.1	23.2	
Confl. Peds. (#/hr)	2	53	48			48
Peak Hour Factor	0.84	0.84	0.89	0.89	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	24	80	64	1776	1074	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	104	0	64	1776	1083	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		10.0	10.0	10.0	
Minimum Split (s)	27.0		17.0	17.0	17.0	
Total Split (s)	28.0		112.0	112.0	112.0	
Total Split (%)	20.0%		80.0%	80.0%	80.0%	
Yellow Time (s)	3.0		4.2	4.2	4.2	
All-Red Time (s)	2.6		1.4	1.4	1.5	
Lost Time Adjust (s)	-0.6		-0.6	-0.6	-0.7	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	
Act Effct Green (s)	13.7		116.3	116.3	116.3	
Actuated g/C Ratio	0.10		0.83	0.83	0.83	
v/c Ratio	0.71		0.17	0.60	0.37	
Control Delay	85.3		4.3	10.2	2.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	85.3		4.3	10.2	2.5	
LOS	F		A	B	A	
Approach Delay	85.3			10.0	2.5	

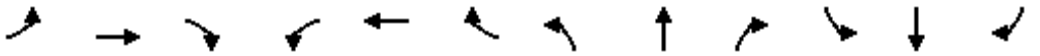
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	F			B	A	
Queue Length 50th (ft)	93		14	569	87	
Queue Length 95th (ft)	141		m24	736	47	
Internal Link Dist (ft)	562			2493	1113	
Turn Bay Length (ft)			1000			
Base Capacity (vph)	247		384	2939	2907	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.42		0.17	0.60	0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 50 (36%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 68.0%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive



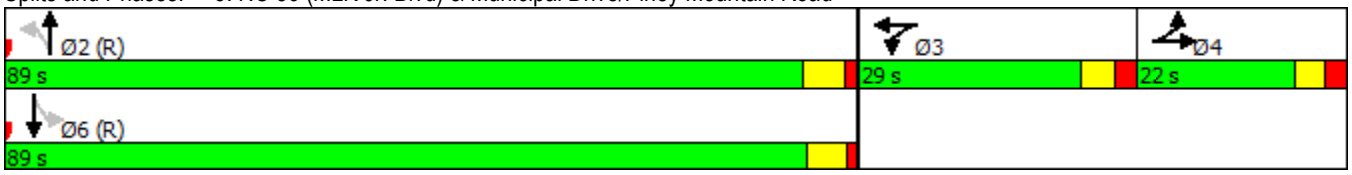


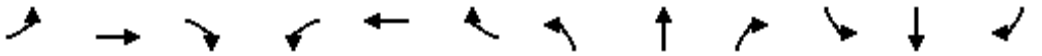
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	2	14	132	3	43	18	1560	130	47	995	2
Future Volume (vph)	4	2	14	132	3	43	18	1560	130	47	995	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor							1.00	1.00			1.00	
Frt		0.870			0.859			0.988				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1621	0	3364	1568	0	1778	3507	0	1752	3505	0
Flt Permitted	0.950			0.950			0.236			0.086		
Satd. Flow (perm)	1770	1621	0	3364	1568	0	442	3507	0	159	3505	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Confl. Peds. (#/hr)							1		2	2		1
Peak Hour Factor	0.71	0.71	0.71	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	6	3	20	142	3	46	20	1696	141	52	1093	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	23	0	142	49	0	20	1837	0	52	1095	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	22.0	22.0		29.0	29.0		89.0	89.0		89.0	89.0	
Total Split (%)	15.7%	15.7%		20.7%	20.7%		63.6%	63.6%		63.6%	63.6%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	7.8	7.8		12.2	12.2		110.1	110.1		110.1	110.1	
Actuated g/C Ratio	0.06	0.06		0.09	0.09		0.79	0.79		0.79	0.79	
v/c Ratio	0.06	0.26		0.49	0.36		0.06	0.67		0.42	0.40	
Control Delay	63.8	70.5		66.2	67.0		5.5	9.4		18.7	5.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	63.8	70.5		66.2	67.0		5.5	9.4		18.7	5.3	
LOS	E	E		E	E		A	A		B	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		69.1			66.4			9.4			5.9	
Approach LOS		E			E			A			A	
Queue Length 50th (ft)	5	21		64	43		4	405		29	313	
Queue Length 95th (ft)	16	40		98	84		13	546		29	125	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)	100			250			700			1000		
Base Capacity (vph)	214	196		576	268		347	2757		125	2755	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.12		0.25	0.18		0.06	0.67		0.42	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 133 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road



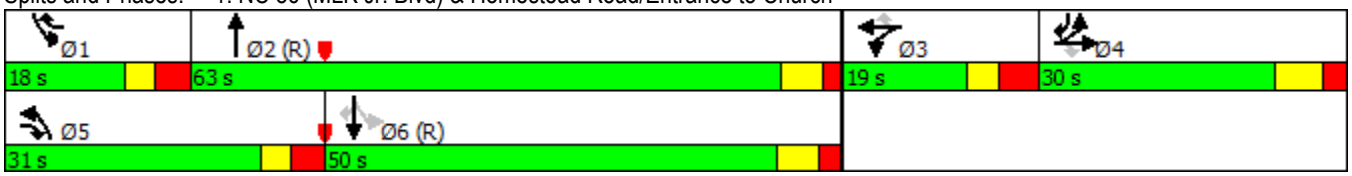


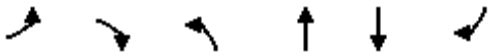
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	2	299	1	1	0	141	900	0	13	1180	194
Future Volume (vph)	278	2	299	1	1	0	141	900	0	13	1180	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.98	0.99						1.00		
Frt			0.850									0.850
Flt Protected	0.950	0.953		0.950			0.950			0.950		
Satd. Flow (prot)	1698	1704	1600	1664	1752	1844	3367	3471	0	1736	3471	1553
Flt Permitted	0.950	0.953		0.950			0.950			0.269		
Satd. Flow (perm)	1697	1702	1568	1654	1752	1844	3367	3471	0	490	3471	1553
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			1193			1007	
Travel Time (s)		18.2			24.0			23.2			19.6	
Confl. Peds. (#/hr)	1		7	7		1			4	4		
Peak Hour Factor	0.92	0.92	0.92	0.50	0.50	0.50	0.91	0.91	0.91	0.97	0.97	0.97
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	302	2	325	2	2	0	155	989	0	13	1216	200
Shared Lane Traffic (%)	50%			10%								
Lane Group Flow (vph)	151	153	325	2	2	0	155	989	0	13	1216	200
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	30.0	30.0	31.0	19.0	19.0	18.0	31.0	63.0		18.0	50.0	30.0
Total Split (%)	23.1%	23.1%	23.8%	14.6%	14.6%	13.8%	23.8%	48.5%		13.8%	38.5%	23.1%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	17.3	17.3	29.1	8.9	8.9		11.8	94.6		91.6	83.2	104.4
Actuated g/C Ratio	0.13	0.13	0.22	0.07	0.07		0.09	0.73		0.70	0.64	0.80
v/c Ratio	0.67	0.68	0.92	0.02	0.02		0.51	0.39		0.03	0.55	0.16
Control Delay	67.7	68.0	76.7	57.0	57.0		68.9	6.6		6.6	16.6	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	67.7	68.0	76.7	57.0	57.0		68.9	6.6		6.6	16.6	3.2
LOS	E	E	E	E	E		E	A		A	B	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		72.4			57.0			15.1			14.7	
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	129	131	259	2	2		68	93		2	250	23
Queue Length 95th (ft)	196	198	316	6	6		108	142		12	537	57
Internal Link Dist (ft)		852			625			1113			927	
Turn Bay Length (ft)	125		550	150			400			225		325
Base Capacity (vph)	326	327	528	179	188		673	2525		487	2220	1339
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.46	0.47	0.62	0.01	0.01		0.23	0.39		0.03	0.55	0.15

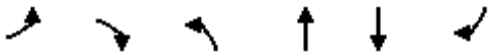
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 26 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 26.2		Intersection LOS: C	
Intersection Capacity Utilization 71.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	42	14	1061	1340	11
Future Volume (vph)	9	42	14	1061	1340	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	1000			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98		1.00		1.00	
Frt	0.889				0.999	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1605	0	1719	3438	3467	0
Flt Permitted	0.991		0.164			
Satd. Flow (perm)	1605	0	296	3438	3467	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			35	35	
Link Distance (ft)	642			2573	1193	
Travel Time (s)	17.5			50.1	23.2	
Confl. Peds. (#/hr)		8	13			13
Peak Hour Factor	0.69	0.69	0.94	0.94	0.92	0.92
Heavy Vehicles (%)	2%	2%	5%	5%	4%	4%
Adj. Flow (vph)	13	61	15	1129	1457	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	0	15	1129	1469	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		10.0	10.0	10.0	
Minimum Split (s)	27.0		17.0	17.0	17.0	
Total Split (s)	30.0		100.0	100.0	100.0	
Total Split (%)	23.1%		76.9%	76.9%	76.9%	
Yellow Time (s)	3.0		4.2	4.2	4.2	
All-Red Time (s)	2.6		1.4	1.4	1.5	
Lost Time Adjust (s)	-0.6		-0.6	-0.6	-0.7	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	
Act Effct Green (s)	10.5		113.0	113.0	113.0	
Actuated g/C Ratio	0.08		0.87	0.87	0.87	
v/c Ratio	0.57		0.06	0.38	0.49	
Control Delay	74.3		0.7	1.8	1.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	74.3		0.7	1.8	1.3	
LOS	E		A	A	A	
Approach Delay	74.3			1.8	1.3	

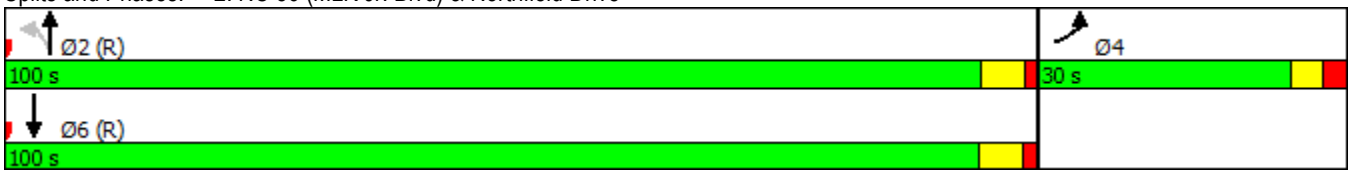


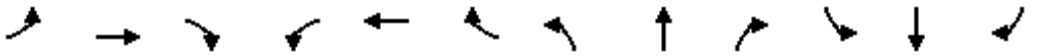
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	E			A	A	
Queue Length 50th (ft)	61		0	2	86	
Queue Length 95th (ft)	83		m0	4	1	
Internal Link Dist (ft)	562			2493	1113	
Turn Bay Length (ft)			1000			
Base Capacity (vph)	308		257	2989	3014	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.24		0.06	0.38	0.49	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 129 (99%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 3.6		Intersection LOS: A	
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive



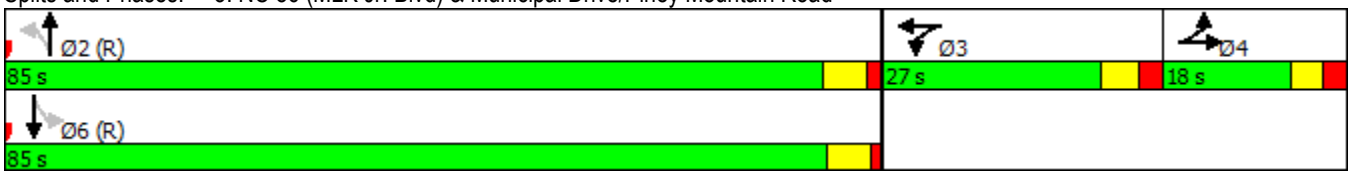


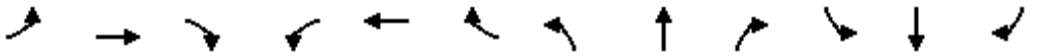
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	12	140	4	46	14	1010	90	18	1359	5
Future Volume (vph)	0	2	12	140	4	46	14	1010	90	18	1359	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00	1.00	
Frt		0.873			0.862			0.988			0.999	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1727	1508	0	3364	1574	0	1744	3439	0	1752	3501	0
Flt Permitted				0.950			0.129			0.221		
Satd. Flow (perm)	1727	1508	0	3364	1574	0	237	3439	0	407	3501	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Confl. Peds. (#/hr)							1		3	3		1
Peak Hour Factor	0.44	0.44	0.44	0.79	0.79	0.79	0.97	0.97	0.97	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	0	5	27	177	5	58	14	1041	93	20	1527	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	177	63	0	14	1134	0	20	1533	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	18.0	18.0		27.0	27.0		85.0	85.0		85.0	85.0	
Total Split (%)	13.8%	13.8%		20.8%	20.8%		65.4%	65.4%		65.4%	65.4%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		8.2		13.1	13.1		98.8	98.8		98.8	98.8	
Actuated g/C Ratio		0.06		0.10	0.10		0.76	0.76		0.76	0.76	
v/c Ratio		0.34		0.52	0.40		0.08	0.43		0.06	0.58	
Control Delay		67.8		60.8	61.6		7.4	7.3		4.4	8.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		67.8		60.8	61.6		7.4	7.3		4.4	8.2	
LOS		E		E	E		A	A		A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		67.8			61.0			7.3			8.1	
Approach LOS		E			E			A			A	
Queue Length 50th (ft)		26		74	51		3	183		4	476	
Queue Length 95th (ft)		29		95	83		12	265		m6	170	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)				250			700			1000		
Base Capacity (vph)		150		569	266		180	2612		309	2659	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.21		0.31	0.24		0.08	0.43		0.06	0.58	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 75 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 12.7		Intersection LOS: B	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road



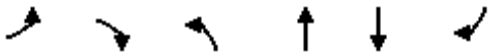


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	7	211	13	7	20	201	773	0	14	749	165
Future Volume (vph)	184	7	211	13	7	20	201	773	0	14	749	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	0.99	1.00					1.00		
Frt			0.850			0.850						0.850
Flt Protected	0.950	0.956		0.950	0.986		0.950			0.950		
Satd. Flow (prot)	1651	1662	1555	1664	1727	1567	3367	3471	0	1736	3471	1553
Flt Permitted	0.950	0.956		0.950	0.986		0.950			0.305		
Satd. Flow (perm)	1651	1662	1522	1651	1723	1567	3367	3471	0	555	3471	1553
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			1193			1007	
Travel Time (s)		18.2			24.0			23.2			19.6	
Confl. Peds. (#/hr)			9	9					7	7		
Peak Hour Factor	0.90	0.90	0.90	0.56	0.56	0.56	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	204	8	234	23	13	36	223	859	0	16	832	183
Shared Lane Traffic (%)	48%			23%								
Lane Group Flow (vph)	106	106	234	18	18	36	223	859	0	16	832	183
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	30.0	30.0	25.0	19.0	19.0	18.0	25.0	53.0		18.0	46.0	30.0
Total Split (%)	25.0%	25.0%	20.8%	15.8%	15.8%	15.0%	20.8%	44.2%		15.0%	38.3%	25.0%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	13.5	13.5	26.2	9.1	9.1	13.9	12.7	77.2		78.7	70.3	85.8
Actuated g/C Ratio	0.11	0.11	0.22	0.08	0.08	0.12	0.11	0.64		0.66	0.59	0.72
v/c Ratio	0.57	0.57	0.70	0.14	0.14	0.20	0.63	0.38		0.04	0.41	0.16
Control Delay	61.8	61.5	50.2	54.5	54.2	32.9	58.0	11.4		7.7	16.6	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	61.8	61.5	50.2	54.5	54.2	32.9	58.0	11.4		7.7	16.6	4.4
LOS	E	E	D	D	D	C	E	B		A	B	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		55.6			43.6			21.0			14.3	
Approach LOS		E			D			C			B	
Queue Length 50th (ft)	83	83	159	13	13	19	75	190		4	195	24
Queue Length 95th (ft)	140	140	219	24	24	24	98	269		13	295	48
Internal Link Dist (ft)		852			625			1113			927	
Turn Bay Length (ft)	125		550	150		75	400			225		325
Base Capacity (vph)	343	346	430	194	201	241	561	2233		512	2032	1258
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.31	0.31	0.54	0.09	0.09	0.15	0.40	0.38		0.03	0.41	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 75 (63%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 24.9		Intersection LOS: C	
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church

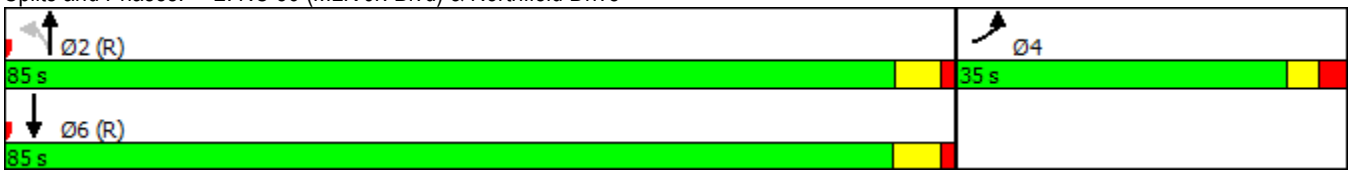


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	31	27	935	962	7
Future Volume (vph)	10	31	27	935	962	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	1000			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98		1.00		1.00	
Frt	0.899				0.999	
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1617	0	1719	3438	3434	0
Flt Permitted	0.988		0.271			
Satd. Flow (perm)	1617	0	489	3438	3434	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			35	35	
Link Distance (ft)	642			2573	1193	
Travel Time (s)	17.5			50.1	23.2	
Confl. Peds. (#/hr)		11	16			16
Peak Hour Factor	0.64	0.64	0.96	0.96	0.94	0.94
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%
Adj. Flow (vph)	16	48	28	974	1023	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	28	974	1030	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		10.0	10.0	10.0	
Minimum Split (s)	27.0		17.0	17.0	17.0	
Total Split (s)	35.0		85.0	85.0	85.0	
Total Split (%)	29.2%		70.8%	70.8%	70.8%	
Yellow Time (s)	3.0		4.2	4.2	4.2	
All-Red Time (s)	2.6		1.4	1.4	1.5	
Lost Time Adjust (s)	-0.6		-0.6	-0.6	-0.7	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	
Act Effct Green (s)	9.5		104.0	104.0	104.0	
Actuated g/C Ratio	0.08		0.87	0.87	0.87	
v/c Ratio	0.50		0.07	0.33	0.35	
Control Delay	66.0		2.4	2.4	1.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	66.0		2.4	2.4	1.7	
LOS	E		A	A	A	
Approach Delay	66.0			2.4	1.7	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	E			A	A	
Queue Length 50th (ft)	49		3	63	48	
Queue Length 95th (ft)	65		9	104	77	
Internal Link Dist (ft)	562			2493	1113	
Turn Bay Length (ft)			1000			
Base Capacity (vph)	404		424	2980	2976	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.16		0.07	0.33	0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 4.0		Intersection LOS: A	
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive

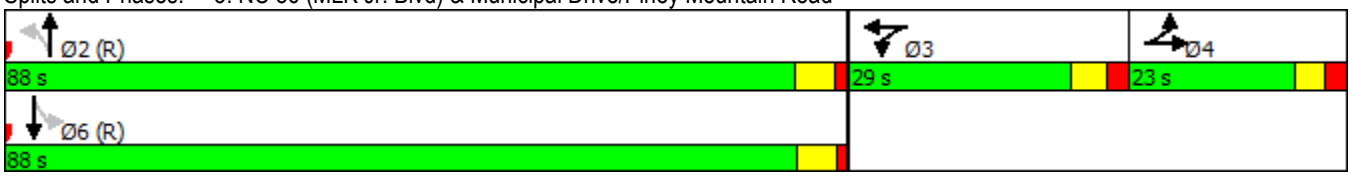


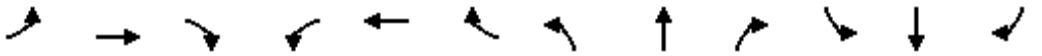
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	1	12	76	1	24	15	929	66	20	953	6
Future Volume (vph)	7	1	12	76	1	24	15	929	66	20	953	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.858			0.856			0.990			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1482	0	3364	1563	0	1728	3421	0	1719	3435	0
Flt Permitted	0.950			0.950			0.237			0.256		
Satd. Flow (perm)	1641	1482	0	3364	1563	0	431	3421	0	463	3435	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Peak Hour Factor	0.71	0.71	0.71	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	10	1	17	82	1	26	16	968	69	23	1095	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	18	0	82	27	0	16	1037	0	23	1102	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	23.0	23.0		29.0	29.0		88.0	88.0		88.0	88.0	
Total Split (%)	16.4%	16.4%		20.7%	20.7%		62.9%	62.9%		62.9%	62.9%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	7.8	7.8		9.8	9.8		112.5	112.5		112.5	112.5	
Actuated g/C Ratio	0.06	0.06		0.07	0.07		0.80	0.80		0.80	0.80	
v/c Ratio	0.11	0.22		0.35	0.25		0.05	0.38		0.06	0.40	
Control Delay	65.6	69.8		65.7	66.5		4.6	5.0		4.7	5.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	65.6	69.8		65.7	66.5		4.6	5.0		4.7	5.2	
LOS	E	E		E	E		A	A		A	A	
Approach Delay		68.3			65.9			5.0			5.1	
Approach LOS		E			E			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	9	16		37	24		3	143		4	156	
Queue Length 95th (ft)	23	34		64	56		10	193		13	198	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)	100			250			700			1000		
Base Capacity (vph)	210	190		576	267		346	2748		371	2759	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.09		0.14	0.10		0.05	0.38		0.06	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 133 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road



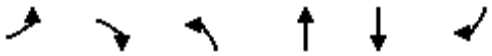


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	3	227	1	2	2	334	1462	2	8	1040	310
Future Volume (vph)	244	3	227	1	2	2	334	1462	2	8	1040	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.97	0.98		0.99	1.00	1.00				0.98
Frt			0.850			0.850						0.850
Flt Protected	0.950	0.953		0.950			0.950			0.950		
Satd. Flow (prot)	1748	1754	1647	1664	1752	1567	3433	3539	0	1770	3539	1583
Flt Permitted	0.950	0.953		0.950			0.950			0.122		
Satd. Flow (perm)	1745	1751	1591	1634	1752	1546	3429	3539	0	227	3539	1559
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			1193			1007	
Travel Time (s)		18.2			24.0			23.2			19.6	
Confl. Peds. (#/hr)	2		18	18		2	3		17	17		3
Peak Hour Factor	0.91	0.91	0.91	0.42	0.42	0.42	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	268	3	249	2	5	5	363	1589	2	8	1083	323
Shared Lane Traffic (%)	49%			10%								
Lane Group Flow (vph)	137	134	249	2	5	5	363	1591	0	8	1083	323
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	33.0	33.0	30.0	21.0	21.0	17.0	30.0	69.0		17.0	56.0	33.0
Total Split (%)	23.6%	23.6%	21.4%	15.0%	15.0%	12.1%	21.4%	49.3%		12.1%	40.0%	23.6%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	16.6	16.6	35.8	8.9	8.9	10.2	19.2	105.3		94.8	86.4	103.0
Actuated g/C Ratio	0.12	0.12	0.26	0.06	0.06	0.07	0.14	0.75		0.68	0.62	0.74
v/c Ratio	0.66	0.65	0.60	0.02	0.05	0.04	0.77	0.60		0.03	0.50	0.28
Control Delay	73.6	72.6	47.3	62.0	62.5	47.0	74.5	8.4		7.1	17.9	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	73.6	72.6	47.3	62.0	62.5	47.0	74.5	8.4		7.1	17.9	5.4
LOS	E	E	D	E	E	D	E	A		A	B	A
Approach Delay		60.8			56.0			20.7			15.0	

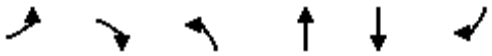
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			E			C			B	
Queue Length 50th (ft)	127	124	191	2	4	4	180	130		1	254	65
Queue Length 95th (ft)	195	191	246	5	9	6	234	292		8	478	116
Internal Link Dist (ft)		852			625			1113			927	
Turn Bay Length (ft)	125		550	150		75	400			225		325
Base Capacity (vph)	349	350	482	190	200	154	613	2660		291	2183	1279
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.39	0.38	0.52	0.01	0.03	0.03	0.59	0.60		0.03	0.50	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 80 (57%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 24.1		Intersection LOS: C	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	68	58	1758	1165	9
Future Volume (vph)	20	68	58	1758	1165	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	1000			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.91		0.99		1.00	
Frt	0.896				0.999	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1503	0	1770	3539	3500	0
Flt Permitted	0.989		0.213			
Satd. Flow (perm)	1502	0	395	3539	3500	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			35	35	
Link Distance (ft)	642			2573	1193	
Travel Time (s)	17.5			50.1	23.2	
Confl. Peds. (#/hr)	2	53	48			48
Peak Hour Factor	0.84	0.84	0.89	0.89	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	24	81	65	1975	1214	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	65	1975	1223	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		10.0	10.0	10.0	
Minimum Split (s)	27.0		17.0	17.0	17.0	
Total Split (s)	28.0		112.0	112.0	112.0	
Total Split (%)	20.0%		80.0%	80.0%	80.0%	
Yellow Time (s)	3.0		4.2	4.2	4.2	
All-Red Time (s)	2.6		1.4	1.4	1.5	
Lost Time Adjust (s)	-0.6		-0.6	-0.6	-0.7	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	
Act Effct Green (s)	13.8		116.2	116.2	116.2	
Actuated g/C Ratio	0.10		0.83	0.83	0.83	
v/c Ratio	0.71		0.20	0.67	0.42	
Control Delay	85.4		4.5	11.8	2.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	85.4		4.5	11.8	2.5	
LOS	F		A	B	A	
Approach Delay	85.4			11.6	2.5	

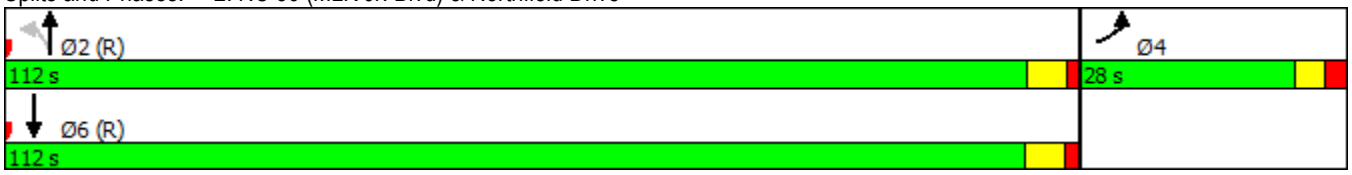


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	F			B	A	
Queue Length 50th (ft)	94		13	716	98	
Queue Length 95th (ft)	142		m21	920	50	
Internal Link Dist (ft)	562			2493	1113	
Turn Bay Length (ft)			1000			
Base Capacity (vph)	246		327	2937	2905	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.43		0.20	0.67	0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 50 (36%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive

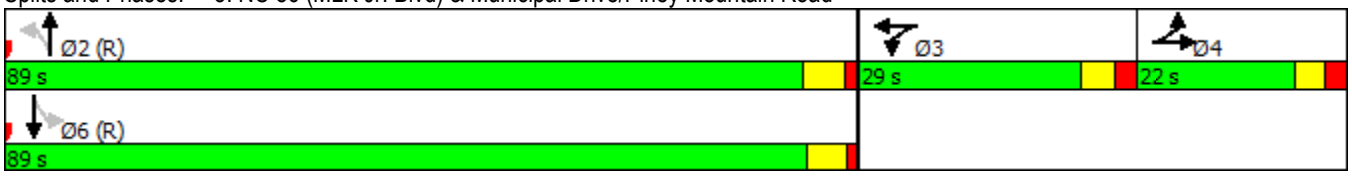


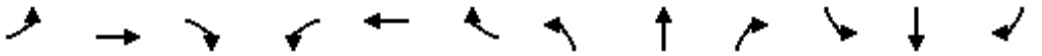
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	2	14	134	3	44	18	1736	132	48	1129	2
Future Volume (vph)	4	2	14	134	3	44	18	1736	132	48	1129	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00			1.00	
Frt		0.870			0.859			0.989				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1621	0	3364	1568	0	1778	3511	0	1752	3505	0
Flt Permitted	0.950			0.950			0.197			0.061		
Satd. Flow (perm)	1770	1621	0	3364	1568	0	369	3511	0	113	3505	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Confl. Peds. (#/hr)							1		2	2		1
Peak Hour Factor	0.71	0.71	0.71	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	6	3	20	144	3	47	20	1887	143	53	1241	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	23	0	144	50	0	20	2030	0	53	1243	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	22.0	22.0		29.0	29.0		89.0	89.0		89.0	89.0	
Total Split (%)	15.7%	15.7%		20.7%	20.7%		63.6%	63.6%		63.6%	63.6%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	7.8	7.8		12.2	12.2		110.0	110.0		110.0	110.0	
Actuated g/C Ratio	0.06	0.06		0.09	0.09		0.79	0.79		0.79	0.79	
v/c Ratio	0.06	0.26		0.49	0.37		0.07	0.74		0.60	0.45	
Control Delay	63.8	70.5		66.3	67.2		5.7	11.2		41.5	5.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	63.8	70.5		66.3	67.2		5.7	11.2		41.5	5.2	
LOS	E	E		E	E		A	B		D	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		69.1			66.5			11.1			6.7	
Approach LOS		E			E			B			A	
Queue Length 50th (ft)	5	21		65	44		4	507		35	253	
Queue Length 95th (ft)	16	40		100	86		14	683		#117	142	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)	100			250			700			1000		
Base Capacity (vph)	214	196		576	268		289	2758		88	2753	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.12		0.25	0.19		0.07	0.74		0.60	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 133 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road



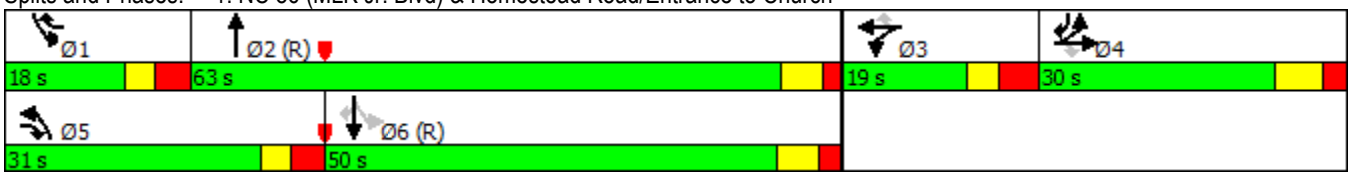


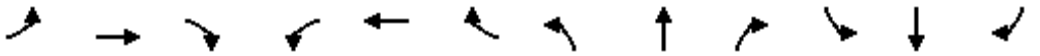
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	2	304	1	1	0	146	933	0	13	1214	194
Future Volume (vph)	278	2	304	1	1	0	146	933	0	13	1214	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.98	0.99						1.00		
Frt			0.850									0.850
Flt Protected	0.950	0.953		0.950			0.950			0.950		
Satd. Flow (prot)	1698	1704	1600	1664	1752	1844	3367	3471	0	1736	3471	1553
Flt Permitted	0.950	0.953		0.950			0.950			0.257		
Satd. Flow (perm)	1697	1702	1568	1654	1752	1844	3367	3471	0	469	3471	1553
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			971			1007	
Travel Time (s)		18.2			24.0			18.9			19.6	
Confl. Peds. (#/hr)	1		7	7		1			4	4		
Peak Hour Factor	0.92	0.92	0.92	0.50	0.50	0.50	0.91	0.91	0.91	0.97	0.97	0.97
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	302	2	330	2	2	0	160	1025	0	13	1252	200
Shared Lane Traffic (%)	50%			10%								
Lane Group Flow (vph)	151	153	330	2	2	0	160	1025	0	13	1252	200
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	30.0	30.0	31.0	19.0	19.0	18.0	31.0	63.0		18.0	50.0	30.0
Total Split (%)	23.1%	23.1%	23.8%	14.6%	14.6%	13.8%	23.8%	48.5%		13.8%	38.5%	23.1%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	17.3	17.3	29.4	8.9	8.9		12.1	94.6		91.3	82.9	104.1
Actuated g/C Ratio	0.13	0.13	0.23	0.07	0.07		0.09	0.73		0.70	0.64	0.80
v/c Ratio	0.67	0.68	0.92	0.02	0.02		0.51	0.41		0.03	0.57	0.16
Control Delay	67.7	68.0	77.2	57.0	57.0		66.4	4.9		6.7	17.2	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	67.7	68.0	77.2	57.0	57.0		66.4	4.9		6.7	17.2	3.3
LOS	E	E	E	E	E		E	A		A	B	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		72.7			57.0			13.2			15.2	
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	129	131	263	2	2		74	65		2	263	23
Queue Length 95th (ft)	196	198	319	6	6		108	110		12	565	58
Internal Link Dist (ft)		852			625			891			927	
Turn Bay Length (ft)	125		550	150			400			225		325
Base Capacity (vph)	326	327	528	179	188		673	2525		472	2212	1336
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.46	0.47	0.63	0.01	0.01		0.24	0.41		0.03	0.57	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 26 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 25.6		Intersection LOS: C	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church





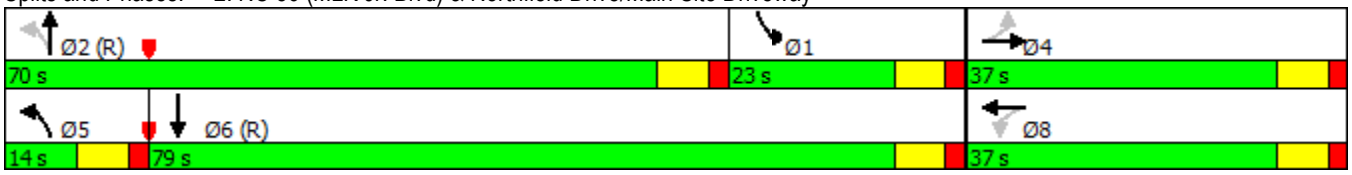
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2	42	132	2	54	14	1020	85	117	1262	11
Future Volume (vph)	9	2	42	132	2	54	14	1020	85	117	1262	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	1000		0	200		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.98									1.00	
Frt		0.892			0.961			0.988			0.999	
Flt Protected		0.992			0.966		0.950			0.950		
Satd. Flow (prot)	0	1613	0	0	1729	0	1719	3405	0	1770	3466	0
Flt Permitted		0.938			0.736		0.100			0.950		
Satd. Flow (perm)	0	1525	0	0	1318	0	181	3405	0	1770	3466	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		642			328			2573			218	
Travel Time (s)		17.5			11.2			50.1			4.2	
Confl. Peds. (#/hr)			8				13					13
Peak Hour Factor	0.69	0.90	0.69	0.90	0.90	0.90	0.94	0.94	0.90	0.90	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	2%	2%	4%	4%
Adj. Flow (vph)	13	2	61	147	2	60	15	1085	94	130	1372	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	209	0	15	1179	0	130	1384	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		14.0	23.0		14.0	23.0	
Total Split (s)	37.0	37.0		37.0	37.0		14.0	70.0		23.0	79.0	
Total Split (%)	28.5%	28.5%		28.5%	28.5%		10.8%	53.8%		17.7%	60.8%	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)		25.1			25.1		71.9	71.9		18.0	89.3	
Actuated g/C Ratio		0.19			0.19		0.55	0.55		0.14	0.69	
v/c Ratio		0.26			0.82		0.07	0.63		0.53	0.58	
Control Delay		44.8			74.3		9.6	18.6		52.2	7.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		44.8			74.3		9.6	18.6		52.2	7.8	
LOS		D			E		A	B		D	A	
Approach Delay		44.8			74.3			18.4			11.6	

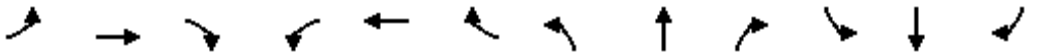
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			B			B	
Queue Length 50th (ft)		55			169		5	364		106	153	
Queue Length 95th (ft)		95			249		m9	483		157	160	
Internal Link Dist (ft)		562			248			2493			138	
Turn Bay Length (ft)							1000			200		
Base Capacity (vph)		375			324		206	1882		245	2379	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.20			0.65		0.07	0.63		0.53	0.58	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 16 (12%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 19.6		Intersection LOS: B	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive/Main Site Driveway



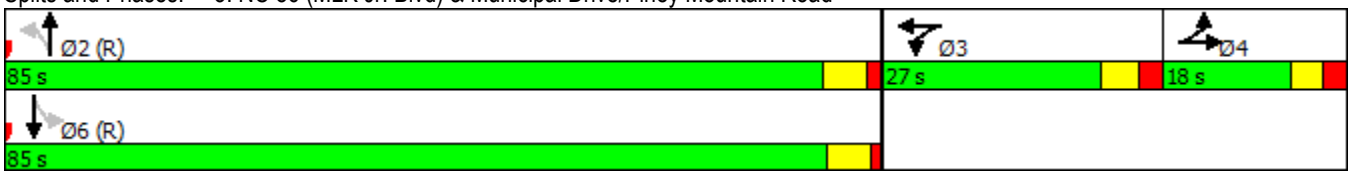


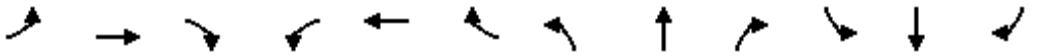
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	12	140	4	48	14	1053	90	20	1401	5
Future Volume (vph)	0	2	12	140	4	48	14	1053	90	20	1401	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00	1.00	
Frt		0.873			0.861			0.988			0.999	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1727	1508	0	3364	1572	0	1744	3439	0	1752	3501	0
Flt Permitted				0.950			0.120			0.208		
Satd. Flow (perm)	1727	1508	0	3364	1572	0	220	3439	0	383	3501	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Confl. Peds. (#/hr)							1		3	3		1
Peak Hour Factor	0.44	0.44	0.44	0.79	0.79	0.79	0.97	0.97	0.97	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	0	5	27	177	5	61	14	1086	93	22	1574	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	177	66	0	14	1179	0	22	1580	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	18.0	18.0		27.0	27.0		85.0	85.0		85.0	85.0	
Total Split (%)	13.8%	13.8%		20.8%	20.8%		65.4%	65.4%		65.4%	65.4%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		8.2		13.1	13.1		98.8	98.8		98.8	98.8	
Actuated g/C Ratio		0.06		0.10	0.10		0.76	0.76		0.76	0.76	
v/c Ratio		0.34		0.52	0.42		0.08	0.45		0.08	0.59	
Control Delay		67.8		60.8	62.3		7.6	7.4		2.8	6.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		67.8		60.8	62.3		7.6	7.4		2.8	6.0	
LOS		E		E	E		A	A		A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		67.8			61.2			7.4			6.0	
Approach LOS		E			E			A			A	
Queue Length 50th (ft)		26		74	53		3	195		5	509	
Queue Length 95th (ft)		29		95	86		12	281		m3	58	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)				250			700			1000		
Base Capacity (vph)		150		569	266		167	2612		290	2659	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.21		0.31	0.25		0.08	0.45		0.08	0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 75 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road



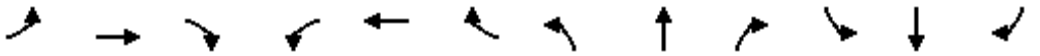


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	7	215	13	7	20	205	799	0	14	775	165
Future Volume (vph)	184	7	215	13	7	20	205	799	0	14	775	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98	0.99	1.00					1.00		
Frt			0.850			0.850						0.850
Flt Protected	0.950	0.956		0.950	0.986		0.950			0.950		
Satd. Flow (prot)	1651	1662	1555	1664	1727	1567	3367	3471	0	1736	3471	1553
Flt Permitted	0.950	0.956		0.950	0.986		0.950			0.294		
Satd. Flow (perm)	1651	1662	1522	1651	1723	1567	3367	3471	0	535	3471	1553
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			965			1007	
Travel Time (s)		18.2			24.0			18.8			19.6	
Confl. Peds. (#/hr)			9	9					7	7		
Peak Hour Factor	0.90	0.90	0.90	0.56	0.56	0.56	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	204	8	239	23	13	36	228	888	0	16	861	183
Shared Lane Traffic (%)	48%			23%								
Lane Group Flow (vph)	106	106	239	18	18	36	228	888	0	16	861	183
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	30.0	30.0	25.0	19.0	19.0	18.0	25.0	53.0		18.0	46.0	30.0
Total Split (%)	25.0%	25.0%	20.8%	15.8%	15.8%	15.0%	20.8%	44.2%		15.0%	38.3%	25.0%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	13.5	13.5	26.4	9.1	9.1	13.9	12.8	77.2		78.5	70.1	85.6
Actuated g/C Ratio	0.11	0.11	0.22	0.08	0.08	0.12	0.11	0.64		0.65	0.58	0.71
v/c Ratio	0.57	0.57	0.71	0.14	0.14	0.20	0.64	0.40		0.04	0.42	0.17
Control Delay	61.8	61.5	50.7	54.5	54.2	32.9	77.5	3.7		7.7	16.9	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	61.8	61.5	50.7	54.5	54.2	32.9	77.5	3.7		7.7	16.9	4.5
LOS	E	E	D	D	D	C	E	A		A	B	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		55.9			43.6			18.8			14.6	
Approach LOS		E			D			B			B	
Queue Length 50th (ft)	83	83	162	13	13	19	90	49		4	205	24
Queue Length 95th (ft)	140	140	223	24	24	24	123	65		13	310	48
Internal Link Dist (ft)		852			625			885			927	
Turn Bay Length (ft)	125		550	150		75	400			225		325
Base Capacity (vph)	343	346	430	194	201	241	561	2233		500	2027	1256
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.31	0.31	0.56	0.09	0.09	0.15	0.41	0.40		0.03	0.42	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 75 (63%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 24.0		Intersection LOS: C	
Intersection Capacity Utilization 56.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church

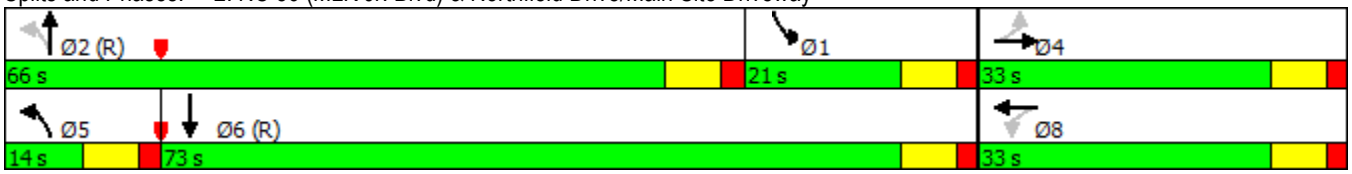


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1	31	78	1	31	27	909	60	80	912	7
Future Volume (vph)	10	1	31	78	1	31	27	909	60	80	912	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	1000		0	200		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.98									1.00	
Frt		0.900			0.962			0.990			0.999	
Flt Protected		0.988			0.966		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1731	0	1719	3410	0	1770	3433	0
Flt Permitted		0.914			0.763		0.224			0.950		
Satd. Flow (perm)	0	1498	0	0	1367	0	405	3410	0	1770	3433	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		642			330			2573			225	
Travel Time (s)		17.5			11.3			50.1			4.4	
Confl. Peds. (#/hr)			11				16					16
Peak Hour Factor	0.64	0.90	0.64	0.90	0.90	0.90	0.96	0.96	0.90	0.90	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	2%	2%	5%	5%
Adj. Flow (vph)	16	1	48	87	1	34	28	947	67	89	970	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	122	0	28	1014	0	89	977	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		14.0	23.0		14.0	23.0	
Total Split (s)	33.0	33.0		33.0	33.0		14.0	66.0		21.0	73.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		11.7%	55.0%		17.5%	60.8%	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)		16.1			16.1		72.9	72.9		16.0	85.4	
Actuated g/C Ratio		0.13			0.13		0.61	0.61		0.13	0.71	
v/c Ratio		0.33			0.67		0.08	0.49		0.38	0.40	
Control Delay		49.5			66.0		11.5	14.9		39.7	5.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		49.5			66.0		11.5	14.9		39.7	5.2	
LOS		D			E		B	B		D	A	
Approach Delay		49.5			66.0			14.8			8.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			B			A	
Queue Length 50th (ft)		46			91		8	216		67	76	
Queue Length 95th (ft)		86			148		24	312		93	108	
Internal Link Dist (ft)		562			250			2493			145	
Turn Bay Length (ft)							1000			200		
Base Capacity (vph)		349			318		346	2071		236	2442	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.19			0.38		0.08	0.49		0.38	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 46 (38%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive/Main Site Driveway

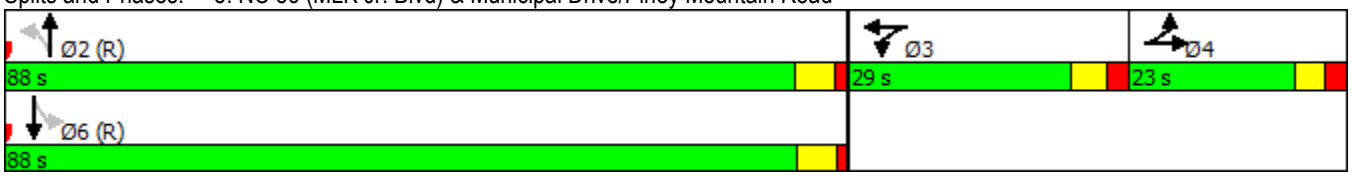


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	1	12	76	1	25	15	962	66	21	986	6
Future Volume (vph)	7	1	12	76	1	25	15	962	66	21	986	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.858			0.855			0.990			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1482	0	3364	1561	0	1728	3421	0	1719	3435	0
Flt Permitted	0.950			0.950			0.227			0.246		
Satd. Flow (perm)	1641	1482	0	3364	1561	0	413	3421	0	445	3435	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Peak Hour Factor	0.71	0.71	0.71	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	10	1	17	82	1	27	16	1002	69	24	1133	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	18	0	82	28	0	16	1071	0	24	1140	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	23.0	23.0		29.0	29.0		88.0	88.0		88.0	88.0	
Total Split (%)	16.4%	16.4%		20.7%	20.7%		62.9%	62.9%		62.9%	62.9%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	7.8	7.8		9.8	9.8		112.5	112.5		112.5	112.5	
Actuated g/C Ratio	0.06	0.06		0.07	0.07		0.80	0.80		0.80	0.80	
v/c Ratio	0.11	0.22		0.35	0.26		0.05	0.39		0.07	0.41	
Control Delay	65.6	69.8		65.7	66.8		4.6	5.1		4.7	5.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	65.6	69.8		65.7	66.8		4.6	5.1		4.7	5.3	
LOS	E	E		E	E		A	A		A	A	
Approach Delay		68.3			66.0			5.1			5.2	
Approach LOS		E			E			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	9	16		37	25		3	150		5	164	
Queue Length 95th (ft)	23	34		64	57		10	202		13	208	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)	100			250			700			1000		
Base Capacity (vph)	210	190		576	267		331	2748		357	2759	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.09		0.14	0.10		0.05	0.39		0.07	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 133 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 45.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	3	232	1	2	2	339	1496	2	8	1074	310
Future Volume (vph)	244	3	232	1	2	2	339	1496	2	8	1074	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-8%			2%			0%			0%	
Storage Length (ft)	125		550	150		75	400		0	225		325
Storage Lanes	1		1	1		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.97	0.98		0.99	1.00	1.00				0.98
Frt			0.850			0.850						0.850
Flt Protected	0.950	0.953		0.950			0.950			0.950		
Satd. Flow (prot)	1748	1754	1647	1664	1752	1567	3433	3539	0	1770	3539	1583
Flt Permitted	0.950	0.953		0.950			0.950			0.115		
Satd. Flow (perm)	1745	1751	1591	1634	1752	1546	3429	3539	0	214	3539	1559
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			20			35			35	
Link Distance (ft)		932			705			968			1007	
Travel Time (s)		18.2			24.0			18.9			19.6	
Confl. Peds. (#/hr)	2		18	18		2	3		17	17		3
Peak Hour Factor	0.91	0.91	0.91	0.42	0.42	0.42	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	268	3	255	2	5	5	368	1626	2	8	1119	323
Shared Lane Traffic (%)	49%			10%								
Lane Group Flow (vph)	137	134	255	2	5	5	368	1628	0	8	1119	323
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA		pm+pt	NA	pm+ov
Protected Phases	4	4	5	3	3	1	5	2		1	6	4
Permitted Phases			4			3				6		6
Detector Phase	4	4	5	3	3	1	5	2		1	6	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0		7.0	12.0	7.0
Minimum Split (s)	44.0	44.0	15.0	50.0	50.0	14.0	15.0	28.0		14.0	46.0	44.0
Total Split (s)	33.0	33.0	30.0	21.0	21.0	17.0	30.0	69.0		17.0	56.0	33.0
Total Split (%)	23.6%	23.6%	21.4%	15.0%	15.0%	12.1%	21.4%	49.3%		12.1%	40.0%	23.6%
Yellow Time (s)	4.5	4.5	3.0	3.0	3.0	3.0	3.0	4.2		3.0	4.2	4.5
All-Red Time (s)	2.6	2.6	3.3	3.9	3.9	3.4	3.3	1.8		3.4	2.2	2.6
Lost Time Adjust (s)	-2.1	-2.1	-1.3	-1.9	-1.9	-1.4	-1.3	-1.0		-1.4	-1.4	-2.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?						Yes		Yes		Yes		
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None
Act Effct Green (s)	16.6	16.6	36.0	8.9	8.9	10.2	19.4	105.3		94.7	86.3	102.9
Actuated g/C Ratio	0.12	0.12	0.26	0.06	0.06	0.07	0.14	0.75		0.68	0.62	0.74
v/c Ratio	0.66	0.65	0.61	0.02	0.05	0.04	0.78	0.61		0.03	0.51	0.28
Control Delay	73.6	72.6	47.8	62.0	62.5	47.0	75.2	6.8		7.2	18.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	73.6	72.6	47.8	62.0	62.5	47.0	75.2	6.8		7.2	18.3	5.5
LOS	E	E	D	E	E	D	E	A		A	B	A
Approach Delay		60.8			56.0			19.4			15.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	127	124	196	2	4	4	181	110		1	267	65
Queue Length 95th (ft)	195	191	251	5	9	6	m210	315		8	502	117
Internal Link Dist (ft)		852			625			888			927	
Turn Bay Length (ft)	125		550	150		75	400			225		325
Base Capacity (vph)	349	350	482	190	200	154	613	2660		283	2180	1277
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.39	0.38	0.53	0.01	0.03	0.03	0.60	0.61		0.03	0.51	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 80 (57%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 155			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 1: NC 86 (MLK Jr. Blvd) & Homestead Road/Entrance to Church

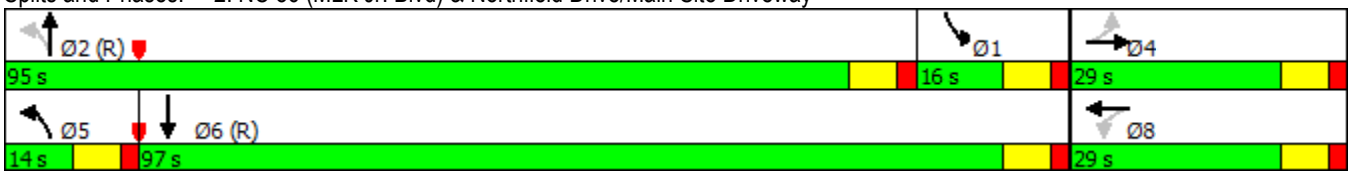
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	2	68	92	2	41	58	1710	62	94	1110	9
Future Volume (vph)	20	2	68	92	2	41	58	1710	62	94	1110	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	1000		0	200		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.91									1.00	
Frt		0.898			0.959			0.995			0.999	
Flt Protected		0.989			0.967		0.950			0.950		
Satd. Flow (prot)	0	1509	0	0	1727	0	1770	3522	0	1770	3495	0
Flt Permitted		0.909			0.641		0.177			0.950		
Satd. Flow (perm)	0	1386	0	0	1145	0	330	3522	0	1770	3495	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		642			347			2573			222	
Travel Time (s)		17.5			11.8			50.1			4.3	
Confl. Peds. (#/hr)	2		53				48					48
Peak Hour Factor	0.84	0.90	0.84	0.90	0.90	0.90	0.89	0.89	0.90	0.90	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	24	2	81	102	2	46	65	1921	69	104	1156	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	150	0	65	1990	0	104	1165	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		14.0	23.0		14.0	23.0	
Total Split (s)	29.0	29.0		29.0	29.0		14.0	95.0		16.0	97.0	
Total Split (%)	20.7%	20.7%		20.7%	20.7%		10.0%	67.9%		11.4%	69.3%	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)		21.4			21.4		92.6	92.6		11.0	97.4	
Actuated g/C Ratio		0.15			0.15		0.66	0.66		0.08	0.70	
v/c Ratio		0.51			0.86		0.21	0.85		0.75	0.48	
Control Delay		62.5			96.1		3.9	15.0		82.1	6.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		62.5			96.1		3.9	15.0		82.1	6.6	
LOS		E			F		A	B		F	A	
Approach Delay		62.5			96.1			14.6			12.8	

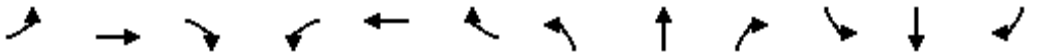
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			F			B			B	
Queue Length 50th (ft)		89			132		9	752		95	147	
Queue Length 95th (ft)		152			#244		m8	617		#192	131	
Internal Link Dist (ft)		562			267			2493			142	
Turn Bay Length (ft)							1000			200		
Base Capacity (vph)		237			196		310	2329		139	2431	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.45			0.77		0.21	0.85		0.75	0.48	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 51 (36%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			

\# 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.

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive/Main Site Driveway



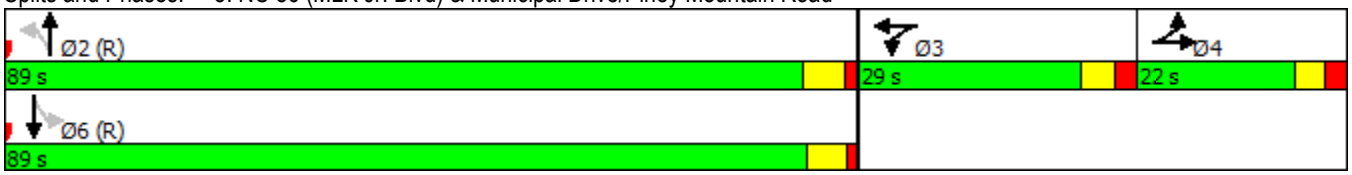


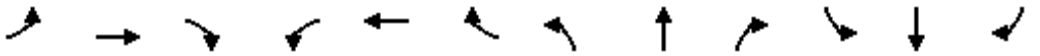
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	2	14	134	3	46	18	1778	132	50	1172	2
Future Volume (vph)	4	2	14	134	3	46	18	1778	132	50	1172	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			4%			-1%			0%	
Storage Length (ft)	100		0	250		150	700		0	1000		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00			1.00	
Frt		0.870			0.859			0.990				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1621	0	3364	1568	0	1778	3515	0	1752	3505	0
Flt Permitted	0.950			0.950			0.186			0.056		
Satd. Flow (perm)	1770	1621	0	3364	1568	0	348	3515	0	103	3505	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		566			607			1060			2573	
Travel Time (s)		15.4			11.8			20.6			50.1	
Confl. Peds. (#/hr)							1		2	2		1
Peak Hour Factor	0.71	0.71	0.71	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	6	3	20	144	3	49	20	1933	143	55	1288	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	23	0	144	52	0	20	2076	0	55	1290	0
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		3	3			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		3	3		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		28.0	28.0		18.0	18.0	
Total Split (s)	22.0	22.0		29.0	29.0		89.0	89.0		89.0	89.0	
Total Split (%)	15.7%	15.7%		20.7%	20.7%		63.6%	63.6%		63.6%	63.6%	
Yellow Time (s)	3.0	3.0		3.6	3.6		4.2	4.2		4.2	4.2	
All-Red Time (s)	2.6	2.6		2.3	2.3		1.6	1.6		1.3	1.3	
Lost Time Adjust (s)	-0.6	-0.6		-0.9	-0.9		-0.8	-0.8		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	7.8	7.8		12.2	12.2		110.0	110.0		110.0	110.0	
Actuated g/C Ratio	0.06	0.06		0.09	0.09		0.79	0.79		0.79	0.79	
v/c Ratio	0.06	0.26		0.49	0.38		0.07	0.75		0.68	0.47	
Control Delay	63.8	70.5		66.3	67.7		5.8	11.6		51.1	4.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	63.8	70.5		66.3	67.7		5.8	11.6		51.1	4.1	
LOS	E	E		E	E		A	B		D	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		69.1			66.7			11.6			6.0	
Approach LOS		E			E			B			A	
Queue Length 50th (ft)	5	21		65	46		4	535		36	276	
Queue Length 95th (ft)	16	40		100	89		14	721		m#121	161	
Internal Link Dist (ft)		486			527			980			2493	
Turn Bay Length (ft)	100			250			700			1000		
Base Capacity (vph)	214	196		576	268		273	2761		81	2753	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.12		0.25	0.19		0.07	0.75		0.68	0.47	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 133 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 12.9		Intersection LOS: B	
Intersection Capacity Utilization 72.2%		ICU Level of Service C	
Analysis Period (min) 15			
# 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.			

Splits and Phases: 3: NC 86 (MLK Jr. Blvd) & Municipal Drive/Piney Mountain Road





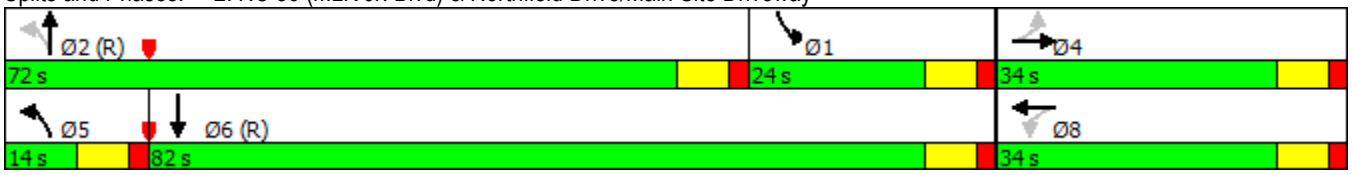
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2	42	132	2	54	14	1020	85	117	1262	11
Future Volume (vph)	9	2	42	132	2	54	14	1020	85	117	1262	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	1000		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.98									1.00	
Frt		0.892			0.855			0.988			0.999	
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1613	0	1770	1593	0	1719	3405	0	1770	3466	0
Flt Permitted		0.946		0.677			0.116			0.950		
Satd. Flow (perm)	0	1538	0	1261	1593	0	210	3405	0	1770	3466	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		642			328			2573			218	
Travel Time (s)		17.5			11.2			50.1			4.2	
Confl. Peds. (#/hr)			8				13					13
Peak Hour Factor	0.69	0.90	0.69	0.90	0.90	0.90	0.94	0.94	0.90	0.90	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	2%	2%	4%	4%
Adj. Flow (vph)	13	2	61	147	2	60	15	1085	94	130	1372	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	147	62	0	15	1179	0	130	1384	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		14.0	23.0		14.0	23.0	
Total Split (s)	34.0	34.0		34.0	34.0		14.0	72.0		24.0	82.0	
Total Split (%)	26.2%	26.2%		26.2%	26.2%		10.8%	55.4%		18.5%	63.1%	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)		20.0		20.0	20.0		76.0	76.0		19.0	94.4	
Actuated g/C Ratio		0.15		0.15	0.15		0.58	0.58		0.15	0.73	
v/c Ratio		0.32		0.76	0.25		0.07	0.59		0.50	0.55	
Control Delay		50.6		75.5	48.7		8.0	15.4		50.3	5.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		50.6		75.5	48.7		8.0	15.4		50.3	5.7	
LOS		D		E	D		A	B		D	A	
Approach Delay		50.6			67.6			15.3			9.6	

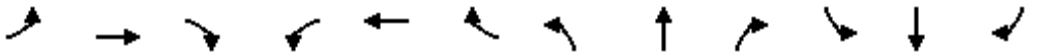
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			B			A	
Queue Length 50th (ft)		58		120	47		3	336		105	111	
Queue Length 95th (ft)		99		184	84		m7	462		154	136	
Internal Link Dist (ft)		562			248			2493			138	
Turn Bay Length (ft)				150			1000			200		
Base Capacity (vph)		343		281	355		227	1989		258	2515	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.22		0.52	0.17		0.07	0.59		0.50	0.55	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 13 (10%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive/Main Site Driveway



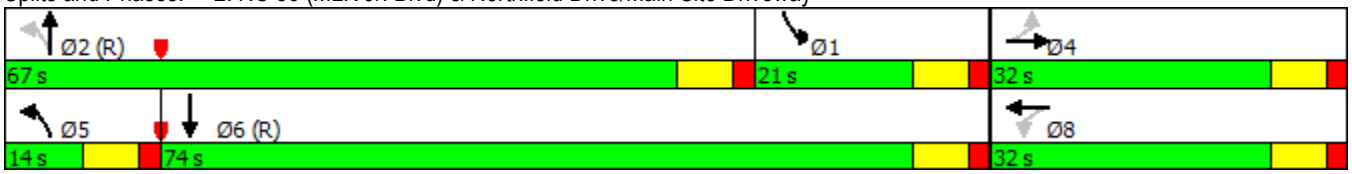


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1	31	78	1	31	27	909	60	80	912	7
Future Volume (vph)	10	1	31	78	1	31	27	909	60	80	912	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	1000		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.98									1.00	
Frt		0.900			0.854			0.990			0.999	
Flt Protected		0.988		0.950			0.950			0.950		
Satd. Flow (prot)	0	1619	0	1770	1591	0	1719	3410	0	1770	3433	0
Flt Permitted		0.915		0.720			0.232			0.950		
Satd. Flow (perm)	0	1499	0	1341	1591	0	420	3410	0	1770	3433	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		642			330			2573			225	
Travel Time (s)		17.5			11.3			50.1			4.4	
Confl. Peds. (#/hr)			11				16					16
Peak Hour Factor	0.64	0.90	0.64	0.90	0.90	0.90	0.96	0.96	0.90	0.90	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	2%	2%	5%	5%
Adj. Flow (vph)	16	1	48	87	1	34	28	947	67	89	970	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	87	35	0	28	1014	0	89	977	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		14.0	23.0		14.0	23.0	
Total Split (s)	32.0	32.0		32.0	32.0		14.0	67.0		21.0	74.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%		11.7%	55.8%		17.5%	61.7%	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)		13.4		13.4	13.4		75.6	75.6		16.0	88.2	
Actuated g/C Ratio		0.11		0.11	0.11		0.63	0.63		0.13	0.74	
v/c Ratio		0.39		0.58	0.20		0.08	0.47		0.38	0.39	
Control Delay		55.2		65.6	49.3		9.9	13.0		39.7	4.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		55.2		65.6	49.3		9.9	13.0		39.7	4.4	
LOS		E		E	D		A	B		D	A	
Approach Delay		55.2			60.9			12.9			7.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			E			B			A	
Queue Length 50th (ft)		48		65	25		8	200		67	76	
Queue Length 95th (ft)		90		115	55		22	284		93	88	
Internal Link Dist (ft)		562			250			2493			145	
Turn Bay Length (ft)				150			1000			200		
Base Capacity (vph)		337		301	357		363	2149		236	2521	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.19		0.29	0.10		0.08	0.47		0.38	0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive/Main Site Driveway



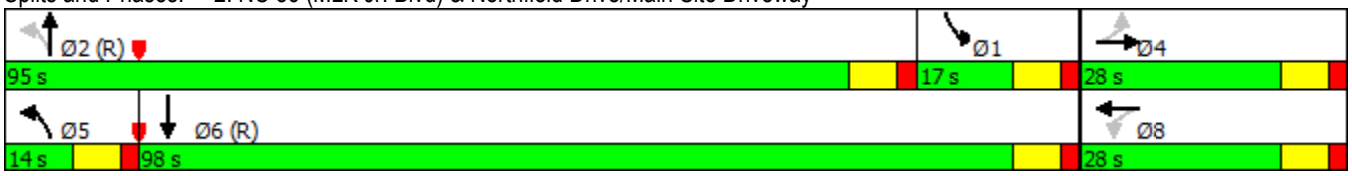
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	2	68	92	2	41	58	1710	62	94	1110	9
Future Volume (vph)	20	2	68	92	2	41	58	1710	62	94	1110	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	1000		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.91									1.00	
Frt		0.898			0.856			0.995			0.999	
Flt Protected		0.989		0.950			0.950			0.950		
Satd. Flow (prot)	0	1509	0	1770	1595	0	1770	3522	0	1770	3495	0
Flt Permitted		0.918		0.544			0.184			0.950		
Satd. Flow (perm)	0	1400	0	1013	1595	0	343	3522	0	1770	3495	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		642			347			2573			222	
Travel Time (s)		17.5			11.8			50.1			4.3	
Confl. Peds. (#/hr)	2		53				48					48
Peak Hour Factor	0.84	0.90	0.84	0.90	0.90	0.90	0.89	0.89	0.90	0.90	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	24	2	81	102	2	46	65	1921	69	104	1156	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	102	48	0	65	1990	0	104	1165	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		14.0	23.0		14.0	23.0	
Total Split (s)	28.0	28.0		28.0	28.0		14.0	95.0		17.0	98.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%		10.0%	67.9%		12.1%	70.0%	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)		17.6		17.6	17.6		95.4	95.4		12.0	101.0	
Actuated g/C Ratio		0.13		0.13	0.13		0.68	0.68		0.09	0.72	
v/c Ratio		0.61		0.80	0.24		0.20	0.83		0.69	0.46	
Control Delay		71.6		98.7	56.0		3.3	12.5		74.0	5.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		71.6		98.7	56.0		3.3	12.5		74.0	5.7	
LOS		E		F	E		A	B		E	A	
Approach Delay		71.6			85.0			12.2			11.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			F			B			B	
Queue Length 50th (ft)		93		91	40		6	679		94	140	
Queue Length 95th (ft)		153		#155	78		m8	617		#180	125	
Internal Link Dist (ft)		562			267			2493			142	
Turn Bay Length (ft)				150			1000			200		
Base Capacity (vph)		230		166	262		327	2399		151	2520	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.47		0.61	0.18		0.20	0.83		0.69	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 51 (36%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 16.7 Intersection LOS: B
Intersection Capacity Utilization 84.7% ICU Level of Service E
Analysis Period (min) 15
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.

Splits and Phases: 2: NC 86 (MLK Jr. Blvd) & Northfield Drive/Main Site Driveway



Appendix E – Synchro Unsignalized HCM Analysis Output

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	70	1059	24	0	1390
Future Vol, veh/h	0	70	1059	24	0	1390
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	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	94	90	90	92
Heavy Vehicles, %	2	2	5	2	2	4
Mvmt Flow	0	78	1127	27	0	1511

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	577	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	460	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	460	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	460	-
HCM Lane V/C Ratio	-	-	0.169	-
HCM Control Delay (s)	-	-	14.4	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.6	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	51	934	16	0	1000
Future Vol, veh/h	0	51	934	16	0	1000
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	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	96	90	90	94
Heavy Vehicles, %	2	2	5	2	2	5
Mvmt Flow	0	57	973	18	0	1064

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	496	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	519	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	519	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	519	-
HCM Lane V/C Ratio	-	-	0.109	-
HCM Control Delay (s)	-	-	12.8	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	70	1744	28	0	1214
Future Vol, veh/h	0	70	1744	28	0	1214
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	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	89	90	90	96
Heavy Vehicles, %	2	2	2	2	2	3
Mvmt Flow	0	78	1960	31	0	1265

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	996	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	243	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	243	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	243	-
HCM Lane V/C Ratio	-	-	0.32	-
HCM Control Delay (s)	-	-	26.6	-
HCM Lane LOS	-	-	D	-
HCM 95th %tile Q(veh)	-	-	1.3	-

Appendix F – Crash Data

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Study Criteria Summary

County: ORANGE **City:** All and Rural
Date: 04/01/2014 **to** 03/31/2019 **Study:** MLKTIA
Location: NC 86 (Martin Luther King Jr. Blvd) from 150 ft. S of Piney Mountain Rd/Municipal Dr to 150 ft. N of SR 1777 (Homestead Rd)

Report Details

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries F	A	B	C	Condition R	L	W	Road Ch	Ci	Trfc Ctl Dv	Op
1	**104547035**	3.341	10/28/2015 11:49	REAR END, SLOW OR STOP	$ 1400	0	0	0	0	2	1	3	1	0	14	1
Unit 1 : 2	**Alchl/Drgs:** 0	**Speed:** 5 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**											
Unit 2 : 1	**Alchl/Drgs:** 0	**Speed:** 30 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
2	**104889332**	3.341	09/21/2016 08:40	REAR END, SLOW OR STOP	$ 4100	0	0	0	0	1	1	1	1	0	0	
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**											
Unit 2 : 1	**Alchl/Drgs:** 0	**Speed:** 5 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**											
3	**105568687**	3.341	08/03/2018 07:32	REAR END, SLOW OR STOP	$ 3000	0	0	0	0	2	1	3	1	0	3	1
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 20 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**											
Unit 2 : 2	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**											
4	**104436650**	3.348	07/14/2015 08:01	REAR END, SLOW OR STOP	$ 9750	0	0	0	0	1	1	1	1	0		3
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**											
Unit 2 : 2	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**											
Unit 3 : 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
5	**105605075**	3.360	09/04/2018 10:37	REAR END, SLOW OR STOP	$ 9080	0	0	0	0	1	1	2	1	0	3	1
Unit 1 : 4	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**											
Unit 2 : 3	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
6	**104355920**	3.365	04/08/2015 17:55	REAR END, SLOW OR STOP	$ 1250	0	0	0	0	1	1	1		0		
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**											
Unit 2 : 1	**Alchl/Drgs:** 7	**Speed:** 10 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
7	**104061203**	3.369	05/07/2014 15:31	LEFT TURN, SAME ROADWAY	$ 4000	0	0	0	0	1	1	1	1	0	3	2
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 15 MPH	**Dir:** E	**Veh Mnvr/Ped Actn:** 8	**Obj Strk:**											
Unit 2 : 5	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries F	A	B	C	Condition R	L	W	Road Ch	Ci	Trfc Ctl Dv	Op
8	**104355625**	3.369	03/06/2015 09:34	ANGLE	$ 2200	0	0	0	0	1	1	1	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 10 MPH	**Dir:** NW	**Veh Mnvr/Ped Actn:** 8	**Obj Strk:**										
Unit	**2 :** 2	**Alchl/Drgs:** 0	**Speed:** 25 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
9	**105307178**	3.369	11/30/2017 09:15	LEFT TURN, SAME ROADWAY	$ 7000	0	0	0	0	1	1	1		0		
Unit	**1 :** 4	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
Unit	**2 :** 4	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 8	**Obj Strk:**										
10	**105365499**	3.369	01/12/2018 08:53	REAR END, SLOW OR STOP	$ 1650	0	0	0	0	2	1	2	1	0	3	1
Unit	**1 :** 2	**Alchl/Drgs:** 0	**Speed:** 15 MPH	**Dir:** SE	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 1	**Speed:** 5 MPH	**Dir:** SE	**Veh Mnvr/Ped Actn:** 16	**Obj Strk:**										
Unit	**3 :** 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** SE	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
11	**104509987**	3.377	09/25/2015 17:15	REAR END, SLOW OR STOP	$ 6000	0	0	0	0	2	1	3	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 10 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**										
12	**105433929**	3.441	03/13/2018 16:33	REAR END, SLOW OR STOP	$ 5500	0	0	0	0	1	1	1		0	3	1
Unit	**1 :** 4	**Alchl/Drgs:** 0	**Speed:** 15 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 20 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 5	**Obj Strk:**										
13	**104333766**	3.464	01/27/2015 07:42	REAR END, SLOW OR STOP	$ 10000	0	0	0	2	1	1	2	1	0	0	
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
14	**104889132**	3.464	09/24/2016 19:53	REAR END, SLOW OR STOP	$ 2200	0	0	0	0	1	4	1	1	0	0	
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
15	**104933884**	3.464	11/05/2016 13:34	RAN OFF ROAD - LEFT	$ 2600	0	0	0	0	1	1	1	3	0	14	1
Unit	**1 :** 4	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
Unit	**2 :** 4	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
Unit	**3 :** 12	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
16	**104932738**	3.464	11/11/2016 12:19	REAR END, SLOW OR STOP	$ 0	0	0	0	1	1	1	1	1	0	9	1
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**										
Unit	**2 :** 10	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**										

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries F	A	B	C	Condition R	L	W	Road Ch	Ci	Trfc Ctl Dv	Op
17	**105046020**	3.464	03/17/2017 15:09	REAR END, SLOW OR STOP	$ 9000	0	0	0	2	1	1	2	1	0	9	1
Unit	**1 :** 4	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				11			**Obj Strk:**			
Unit	**2 :** 5	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
18	**105236010**	3.464	09/21/2017 09:39	REAR END, SLOW OR STOP	$ 26000	0	0	0	1	1	1	1	1	0	5	1
Unit	**1 :** 4	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 45 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
19	**104074582**	3.523	05/25/2014 16:47	LEFT TURN, DIFFERENT ROADWAYS	$ 6000	0	0	0	4	1	1	2	3	0	1	1
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 15 MPH	**Dir:** SW	**Veh Mnvr/Ped Actn:**				8			**Obj Strk:**			
20	**104106978**	3.611	07/08/2014 09:00	REAR END, SLOW OR STOP	$ 1200	0	0	0	0	1	1	1	1	0	0	2
Unit	**1 :** 5	**Alchl/Drgs:**	0	**Speed:** 30 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
21	**104511444**	3.615	09/24/2015 20:53	RAN OFF ROAD - RIGHT	$ 400	0	0	0	0	2	4	3	3	0		
Unit	**1 :** 4	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**		38	
22	**104576487**	3.616	11/12/2015 15:49	ANIMAL	$ 7000	0	0	0	0	1	1	1	2	0		
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 40 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**		17	
23	**105294043**	3.695	11/16/2017 02:00	RAN OFF ROAD - RIGHT	$ 1100	0	0	0	0	1	4	1		0		
Unit	**1 :** 4	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**		60	
24	**104102837**	3.700	07/03/2014 07:50	ANIMAL	$ 3000	0	0	0	0	1	1	2	3	0		
Unit	**1 :** 2	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**		17	
25	**104685932**	3.709	03/17/2016 09:05	REAR END, SLOW OR STOP	$ 500	0	0	0	1	1	1	1	1	0	0	
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 20 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				11			**Obj Strk:**			
Unit	**2 :** 4	**Alchl/Drgs:**	0	**Speed:** 20 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				11			**Obj Strk:**			
26	**104967378**	3.728	12/14/2016 17:42	REAR END, SLOW OR STOP	$ 15000	0	0	0	0	1	2	1	1	0	0	2
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 10 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				11			**Obj Strk:**			

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries F	A	B	C	Condition R	L	W	Road Ch	Ci	Trfc Ctl Dv	Op
Unit	**3 :** 1	**Alchl/Drgs:**	0	**Speed:** 10 MPH **Dir:** S		**Veh Mnvr/Ped Actn:**				11			**Obj Strk:**			
27	**105146550**	3.769	06/24/2017 15:37	SIDESWIPE, SAME DIRECTION	$ 1400	0	0	0	0	1	1	2	1	0	0	
Unit	**1 :** 2	**Alchl/Drgs:**	0	**Speed:** 35 MPH **Dir:** S		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 40 MPH **Dir:** S		**Veh Mnvr/Ped Actn:**				5			**Obj Strk:**			
28	**105454954**	3.791	04/10/2018 07:57	RAN OFF ROAD - STRAIGHT	$ 2300	0	0	0	0	1	1	2	1	0	1	1
Unit	**1 :** 2	**Alchl/Drgs:**	0	**Speed:** 15 MPH **Dir:** NE		**Veh Mnvr/Ped Actn:**				12			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 20 MPH **Dir:** S		**Veh Mnvr/Ped Actn:**				5			**Obj Strk:**			
29	**105564984**	3.791	07/31/2018 16:10	LEFT TURN, DIFFERENT ROADWAYS	$ 10500	0	0	0	1	2	1	2	1	0	1	1
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 35 MPH **Dir:** S		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 4	**Alchl/Drgs:**	0	**Speed:** 10 MPH **Dir:** NE		**Veh Mnvr/Ped Actn:**				8			**Obj Strk:**			
30	**105607966**	3.799	09/06/2018 20:51	REAR END, SLOW OR STOP	$ 5500	0	0	0	0	1	4	1	1	0	0	
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 25 MPH **Dir:** N		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 4	**Alchl/Drgs:**	0	**Speed:** 0 MPH **Dir:** N		**Veh Mnvr/Ped Actn:**				11			**Obj Strk:**			
31	**104355638**	3.800	03/09/2015 13:06	SIDESWIPE, SAME DIRECTION	$ 3000	0	0	0	0	1	1	1	1	0	0	1
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 15 MPH **Dir:** N		**Veh Mnvr/Ped Actn:**				5			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 25 MPH **Dir:** N		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
32	**104481884**	3.820	08/28/2015 10:20	HEAD ON	$ 36000	0	0	2	0	1	1	1	1	0		
Unit	**1 :** 5	**Alchl/Drgs:**	0	**Speed:** 20 MPH **Dir:** N		**Veh Mnvr/Ped Actn:**				8			**Obj Strk:**			
Unit	**2 :** 5	**Alchl/Drgs:**	0	**Speed:** 40 MPH **Dir:** N		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**		64	
33	**105310133**	3.820	11/22/2017 12:45	RIGHT TURN, DIFFERENT ROADWAYS	$ 5500	0	0	0	0	1	1	1	1	0		
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 35 MPH **Dir:** S		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 5 MPH **Dir:** SE		**Veh Mnvr/Ped Actn:**				7			**Obj Strk:**			
34	**105338590**	3.820	12/19/2017 06:20	ANGLE	$ 52000	0	0	0	2	1	4	1		0		
Unit	**1 :** 5	**Alchl/Drgs:**	0	**Speed:** 0 MPH **Dir:** S		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 0 MPH **Dir:** E		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
35	**105046424**	3.840	03/20/2017 08:31	SIDESWIPE, SAME DIRECTION	$ 4500	0	0	1	0	1	1	1	3	0	3	1
Unit	**1 :** 7	**Alchl/Drgs:**	0	**Speed:** 25 MPH **Dir:** N		**Veh Mnvr/Ped Actn:**				5			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 30 MPH **Dir:** N		**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries F	A	B	C	Condition R	L	W	Road Ch	Ci	Trfc Ctl Dv	Op
36	**104067757**	3.843	05/20/2014 16:59	REAR END, SLOW OR STOP	$ 1300	0	0	0	0	1	1	1	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**3 :** 1	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
37	**104231203**	3.843	11/25/2014 13:14	RIGHT TURN, SAME ROADWAY	$ 7875	0	0	0	0	1	1	2	1	0	0	
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 15 MPH	**Dir:** NE	**Veh Mnvr/Ped Actn:**				7			**Obj Strk:**			
38	**104292726**	3.843	01/08/2015 16:00	REAR END, SLOW OR STOP	$ 4900	0	0	0	0	1	1	1	1	0	0	
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
Unit	**3 :** 1	**Alchl/Drgs:**	0	**Speed:** 30 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
39	**104737337**	3.843	04/28/2016 08:35	REAR END, SLOW OR STOP	$ 7000	0	0	0	1	1	1	1	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
Unit	**2 :** 4	**Alchl/Drgs:**	0	**Speed:** 40 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
40	**104770020**	3.843	05/31/2016 09:10	REAR END, SLOW OR STOP	$ 5700	0	0	0	0	1	1	1	3	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
Unit	**2 :** 4	**Alchl/Drgs:**	0	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
41	**104812979**	3.843	07/17/2016 13:54	RAN OFF ROAD - LEFT	$ 5500	0	0	0	1	1	1	1	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 5 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				8			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 5 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				12			**Obj Strk:**			
42	**105373904**	3.843	01/16/2018 06:44	REAR END, SLOW OR STOP	$ 5500	0	0	0	0	1	3	1	1	0	3	1
Unit	**1 :** 2	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
Unit	**2 :** 4	**Alchl/Drgs:**	0	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
43	**105455633**	3.843	04/16/2018 18:18	ANGLE	$ 3500	0	0	0	0	1	1	1	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:**	5	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 10 MPH	**Dir:** W	**Veh Mnvr/Ped Actn:**				8			**Obj Strk:**			
44	**105726081**	3.843	12/13/2018 07:55	RAN OFF ROAD - RIGHT	$ 6500	0	0	0	1	1	1	1	1	0	0	
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**		34	

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries F	A	B	C	Condition R	L	W	Road Ch	Ci	Trfc Ctl Dv	Op
45	**105731458**	3.843	12/13/2018 12:40	SIDESWIPE, SAME DIRECTION	$ 6050	0	0	0	0	1	1	1	1	0	3	1
Unit 1 : 3	**Alchl/Drgs:** 0	**Speed:** 20 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:** 64											
Unit 2 : 1	**Alchl/Drgs:** 0	**Speed:** 5 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**											
46	**104761796**	3.850	05/24/2016 12:36	REAR END, SLOW OR STOP	$ 10000	0	0	0	3	1	1	1	1	0	3	1
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
Unit 2 : 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**											
47	**104471800**	3.854	08/15/2015 14:20	RIGHT TURN, SAME ROADWAY	$ 1200	0	0	1	0	1	1	1	1	0	3	1
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 7	**Obj Strk:**											
Unit 2 : 23	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:**	**Veh Mnvr/Ped Actn:**	**Obj Strk:** 15											
48	**104711024**	3.862	04/02/2016 12:28	REAR END, SLOW OR STOP	$ 9750	0	0	0	2	1	1	2	1	0	3	1
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**											
Unit 2 : 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
49	**104945781**	3.887	11/15/2016 10:58	REAR END, SLOW OR STOP	$ 2800	0	0	0	0	1	1	1	1	0		
Unit 1 : 4	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**											
Unit 2 : 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
50	**104900774**	3.900	10/05/2016 19:55	REAR END, SLOW OR STOP	$ 7200	0	0	0	1	1	4	2	1	0	0	
Unit 1 : 4	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**											
Unit 2 : 2	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
51	**104654588**	3.950	02/17/2016 17:28	LEFT TURN, DIFFERENT ROADWAYS	$ 3600	0	0	0	0	1	1	1	1	0		
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 30 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
Unit 2 : 17	**Alchl/Drgs:** 0	**Speed:** 10 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 8	**Obj Strk:**											
52	**104433895**	3.960	07/11/2015 20:18	SIDESWIPE, SAME DIRECTION	$ 4000	0	0	0	2	1	2	1	3	0	0	2
Unit 1 : 20	**Alchl/Drgs:** 0	**Speed:** 10 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 5	**Obj Strk:**											
Unit 2 : 26	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:**	**Veh Mnvr/Ped Actn:**	**Obj Strk:**											
53	**105148763**	3.980	06/26/2017 18:00	REAR END, SLOW OR STOP	$ 4500	0	0	0	2	1	1	1	1	0	0	
Unit 1 : 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**											
Unit 2 : 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 7	**Obj Strk:**											

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries F	A	B	C	Condition R	L	W	Road Ch	Ci	Trfc Ctl Dv	Op
54	**105271567**	3.980	10/23/2017 16:14	REAR END, SLOW OR STOP	$ 19500	0	0	0	1	1	1	2	1	0	0	
Unit	**1 :** 2	**Alchl/Drgs:** 0	**Speed:** 5 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:** 20										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 40 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
55	**105468997**	4.051	05/01/2018 16:13	RAN OFF ROAD - LEFT	$ 5500	0	0	0	1	1	1	1	3	0	0	2
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 8	**Obj Strk:**										
56	**105439913**	4.062	03/26/2018 10:44	REAR END, SLOW OR STOP	$ 10000	0	0	0	1	1	1	1	1	0	0	
Unit	**1 :** 2	**Alchl/Drgs:** 0	**Speed:** 25 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
Unit	**2 :** 4	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
57	**105226198**	4.063	09/13/2017 14:47	REAR END, SLOW OR STOP	$ 1900	0	0	0	0	1	1	1	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
58	**104770016**	4.078	06/02/2016 20:31	REAR END, SLOW OR STOP	$ 1500	0	0	0	0	1	4	1	1	0	3	1
Unit	**1 :** 4	**Alchl/Drgs:** 0	**Speed:** 10 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 12	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 5 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**										
59	**104125936**	4.080	07/21/2014 18:47	REAR END, SLOW OR STOP	$ 2000	0	0	0	1	2	1	2	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 5 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 12	**Obj Strk:**										
60	**104518491**	4.080	09/28/2015 19:38	REAR END, SLOW OR STOP	$ 10000	0	0	0	3	2	4	3	1	0	3	1
Unit	**1 :** 4	**Alchl/Drgs:** 0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 11	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
Unit	**3 :** 1	**Alchl/Drgs:** 0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 1	**Obj Strk:**										
61	**104770000**	4.080	05/31/2016 14:46	ANGLE	$ 4000	0	0	0	0	1	1	1	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:** 0	**Speed:** 5 MPH	**Dir:** W	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
Unit	**2 :** 4	**Alchl/Drgs:** 0	**Speed:** 30 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 4	**Obj Strk:**										
62	**104787036**	4.080	06/28/2016 11:15	SIDESWIPE, SAME DIRECTION	$ 3000	0	0	0	0	2	1	2	1	0	3	1
Unit	**1 :** 10	**Alchl/Drgs:** 0	**Speed:** 15 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 8	**Obj Strk:**										
Unit	**2 :** 1	**Alchl/Drgs:** 0	**Speed:** 15 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:** 8	**Obj Strk:**										

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries F	A	B	C	Condition R	L	W	Road Ch	Ci	Trfc Ctl Dv	Op
63	**104916592**	4.080	11/10/2016 08:04	PEDESTRIAN	$ 200	0	0	1	0	1	1	1	3	0	3	1
Unit	**1 :** 24	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:**	**Veh Mnvr/Ped Actn:**							**Obj Strk:**		14	
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** SE	**Veh Mnvr/Ped Actn:**				7			**Obj Strk:**		14	
64	**104960372**	4.080	11/30/2016 14:02	RIGHT TURN, DIFFERENT ROADWAYS	$ 1500	0	0	0	0	1	1	2	1	0	3	1
Unit	**1 :** 2	**Alchl/Drgs:**	0	**Speed:** 15 MPH	**Dir:** SE	**Veh Mnvr/Ped Actn:**				7			**Obj Strk:**			
Unit	**2 :** 5	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
65	**104998725**	4.080	01/18/2017 08:06	HEAD ON	$ 19000	0	0	0	0	2	1	2	1	0	3	1
Unit	**1 :** 2	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 4	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**3 :** 4	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
66	**105438884**	4.080	03/23/2018 14:37	REAR END, SLOW OR STOP	$ 6500	0	0	0	0	1	1	1	3	0	3	1
Unit	**1 :** 4	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
67	**105491259**	4.080	05/24/2018 17:22	RAN OFF ROAD - RIGHT	$ 5000	0	0	0	0	1	1	1	3	0	3	1
Unit	**1 :** 4	**Alchl/Drgs:**	1	**Speed:** 25 MPH	**Dir:** N	**Veh Mnvr/Ped Actn:**				8			**Obj Strk:**		55	
68	**105618643**	4.080	09/23/2018 20:13	REAR END, SLOW OR STOP	$ 3300	0	0	0	0	1	4	1	1	0	3	2
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 10 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
69	**104518481**	4.083	09/28/2015 16:47	SIDESWIPE, SAME DIRECTION	$ 1000	0	0	0	0	2	1	3	1	0	3	1
Unit	**1 :** 32	**Alchl/Drgs:**	7	**Speed:** 35 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 4	**Alchl/Drgs:**	0	**Speed:** 25 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				11			**Obj Strk:**			
70	**105162303**	4.089	07/10/2015 12:23	RAN OFF ROAD - LEFT	$ 1450	0	0	0	1	1	1	1	1	0	3	1
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 10 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				4			**Obj Strk:**			
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
Unit	**3 :** 1	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			
71	**105359899**	4.093	01/03/2018 19:51	REAR END, SLOW OR STOP	$ 3400	0	0	0	1	5	4	4	1	0	3	2
Unit	**1 :** 1	**Alchl/Drgs:**	0	**Speed:** 15 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				11			**Obj Strk:**			
Unit	**2 :** 2	**Alchl/Drgs:**	0	**Speed:** 0 MPH	**Dir:** S	**Veh Mnvr/Ped Actn:**				1			**Obj Strk:**			

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
						F	A	B	C	R	L	W	Ch	Ci	Dv	Op
72	**105225584**	4.096	09/10/2017 17:17	SIDESWIPE, OPPOSITE DIRECTION	$ 10500	0	0	0	1	1	1	2	1	0	3	1
Unit	**1 :** 4	**Alchl/Drgs:**	0	**Speed:**	0 MPH	**Dir:**	N	**Veh Mnvr/Ped Actn:**		1		**Obj Strk:**				
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:**	35 MPH	**Dir:**	S	**Veh Mnvr/Ped Actn:**		4		**Obj Strk:**				
73	**105638231**	4.104	10/10/2018 13:05	REAR END, SLOW OR STOP	$ 1250	0	0	0	0	2	1	2	1	0	3	1
Unit	**1 :** 5	**Alchl/Drgs:**	0	**Speed:**	0 MPH	**Dir:**	S	**Veh Mnvr/Ped Actn:**		1		**Obj Strk:**				
Unit	**2 :** 1	**Alchl/Drgs:**	0	**Speed:**	35 MPH	**Dir:**	S	**Veh Mnvr/Ped Actn:**		4		**Obj Strk:**				

Legend for Report Details:

Acc No - Accident Number
Injuries: F - Fatal, A - Class A, B - Class B, C - Class C
Condition: R - Road Surface, L - Ambient Light, W - Weather
Rd Ch - Road Character
Rd Ci - Roadway Contributing Circumstances
Trfc Ctl - Traffic Control: Dv - Device, Op - Operating
Alchl/Drgs - Alcohol Drugs Suspected
Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
Obj Strk - Object Struck

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	73	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	28	38.36
Total Injury Crashes	28	38.36
Property Damage Only Crashes	45	61.64
Night Crashes	10	13.70
Wet Crashes	12	16.44
Alcohol/Drugs Involvement Crashes	3	4.11

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	73	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	4	5.48
Class C Crashes	24	32.88
Property Damage Only Crashes	45	61.64

Vehicle Exposure Statistics

Annual ADT = 26200

Total Length = 0.767 (Miles) **1.234 (Kilometers)**

Total Vehicle Exposure = 36.69 (MVMT) **59.05 (MVKMT)**

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	198.94	123.62
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	76.31	47.41
Night Crash Rate	27.25	16.93
Wet Crash Rate	32.70	20.32
EPDO Rate	763.61	474.48

Miscellaneous Statistics

Severity Index =	3.84
EPDO Crash Index =	280.20
Estimated Property Damage Total = $	467005.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANGLE	4	5.48
ANIMAL	2	2.74
HEAD ON	2	2.74
LEFT TURN, DIFFERENT ROADWAYS	3	4.11
LEFT TURN, SAME ROADWAY	2	2.74
PEDESTRIAN	1	1.37
RAN OFF ROAD - LEFT	4	5.48
RAN OFF ROAD - RIGHT	4	5.48
RAN OFF ROAD - STRAIGHT	1	1.37
REAR END, SLOW OR STOP	38	52.05
RIGHT TURN, DIFFERENT ROADWAYS	2	2.74
RIGHT TURN, SAME ROADWAY	2	2.74
SIDESWIPE, OPPOSITE DIRECTION	1	1.37
SIDESWIPE, SAME DIRECTION	7	9.59

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	5	11.90
Class C Injuries	37	88.10
Total Non-Fatal Injuries	42	100.00
Total Injuries	42	100.00

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	6	8.22
Feb	1	1.37
Mar	8	10.96
Apr	5	6.85
May	8	10.96
Jun	4	5.48
Jul	8	10.96
Aug	3	4.11
Sep	12	16.44
Oct	4	5.48
Nov	10	13.70
Dec	4	5.48

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	9	12.33
Tue	17	23.29
Wed	13	17.81
Thu	15	20.55
Fri	9	12.33
Sat	6	8.22
Sun	4	5.48

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	1	1.37
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	2	2.74
0700-0759	5	6.85
0800-0859	7	9.59
0900-0959	6	8.22
1000-1059	4	5.48
1100-1159	2	2.74
1200-1259	6	8.22
1300-1359	5	6.85
1400-1459	5	6.85
1500-1559	4	5.48
1600-1659	8	10.96
1700-1759	6	8.22
1800-1859	3	4.11
1900-1959	4	5.48
2000-2059	5	6.85
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	0	0.00

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	50	10	0	60
Dark	7	2	1	10
Other	3	0	0	3
Total	60	12	1	73

Object Struck Summary

Object Type	Times Struck	Percent of Total
ANIMAL	2	16.67
MAILBOX	1	8.33
OFFICIAL HIGHWAY SIGN BREAKAWAY	1	8.33
OTHER FIXED OBJECT	2	16.67
PARKED MOTOR VEHICLE	1	8.33
PEDALCYCLIST	1	8.33
PEDESTRIAN	2	16.67
TRAFFIC ISLAND CURB OR MEDIAN	1	8.33
UTILITY POLE	1	8.33

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
LIGHT TRUCK (MINI-VAN, PANEL)	2	1.34
MOTORCYCLE	1	0.67
OTHER	1	0.67
PASSENGER CAR	86	57.72
PEDALCYCLE	1	0.67
PEDESTRIAN	1	0.67
PICKUP	15	10.07
SCHOOL BUS	1	0.67
SINGLE UNIT TRUCK (2-AXLE, 6-TIRE)	2	1.34
SPORT UTILITY	28	18.79
TAXICAB	1	0.67
TRUCK/TRAILER	1	0.67
UNKNOWN	1	0.67
VAN	8	5.37

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2014	7	0	2	5
2015	16	0	6	10
2016	19	0	8	11
2017	13	0	7	6
2018	18	0	5	13
2019	0	0	0	0
Total	73	0	28	45

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2014	0	5
2015	0	11
2016	0	11
2017	0	10
2018	0	5
2019	0	0
Total	0	42

Miscellaneous Totals

Year	Property Damage	EPDO Index
2014	$ 25375	21.80
2015	$ 99550	60.40
2016	$ 86150	78.20
2017	$ 161900	64.80
2018	$ 94030	55.00
2019	$ 0	0.00
Total	$ 467005	280.20

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road & Fixed Object	Angle	Side Swipe	Other
2014	2	1	3	0	0	0	1
2015	0	1	7	2	1	3	2

Year	Left Turn	Right Turn	Rear End	Run Off Road & Fixed Object	Angle	Side Swipe	Other
2016	1	1	12	2	1	1	1
2017	1	1	5	1	1	3	1
2018	1	0	11	4	1	1	0
2019	0	0	0	0	0	0	0
Total	5	4	38	9	4	8	5

Strip Diagram

Features	Milepost	Crash IDs
BEGIN STUDY 150 FT. S OF PINEY MTN	3.34	104547035 | 104889332 | 105568687
	3.35	104436650
	3.36	105605075
MUNICIPAL (CORRECT MP) | PINEY MOUNTAIN	3.37	104355920 | 104061203 | 104355625 | 105307178 |
		105365499
	3.38	104509987
	3.39	
	3.40	
	3.41	
	3.42	
MUNICIPAL	3.43	
	3.44	105433929
	3.45	
	3.46	104333766 | 104889132 | 104933884 | 104932738 |
		105046020 | 105236010
	3.47	
	3.48	
	3.49	
	3.50	
	3.51	
TIMBER HOLLOW	3.52	104074582
	3.53	
	3.54	
	3.55	
	3.56	
	3.57	
	3.58	
	3.59	
	3.60	
	3.61	104106978
	3.62	104511444 | 104576487
	3.63	
	3.64	
	3.65	
	3.66	
	3.67	
	3.68	
	3.69	105294043
	3.70	104102837
ASHLEY FOREST	3.71	104685932
	3.72	
	3.73	104967378

Features	Milepost	Crash IDs
	3.74	
	3.75	
	3.76	
	3.77	105146550
	3.78	
CRITZ	3.79	105454954 | 105564984
	3.80	105607966 | 104355638
	3.81	
FAMILY FARE | TAYLOR	3.82	104481884 | 105310133 | 105338590
	3.83	
MINI MART | NORTHFIELD	3.84	105046424 | 104067757 | 104231203 | 104292726 | 104737337 | 104770020 | 104812979 | 105373904 | 105455633 | 105726081 | 105731458
	3.85	104761796 | 104471800
	3.86	104711024
	3.87	
	3.88	
	3.89	104945781
	3.90	104900774
	3.91	
	3.92	
	3.93	
	3.94	
	3.95	104654588
	3.96	104433895
	3.97	
SPEEDWAY	3.98	105148763 | 105271567
	3.99	
	4.00	
	4.01	
	4.02	
	4.03	
	4.04	
	4.05	105468997
	4.06	105439913 | 105226198
	4.07	
SR 1777 | HOMESTEAD	4.08	104770016 | 104125936 | 104518491 | 104770000 | 104787036 | 104916592 | 104960372 | 104998725 | 105438884 | 105491259 | 105618643 | 104518481
	4.09	105162303 | 105359899
	4.10	105225584 | 105638231
END STUDY 150 FT. N OF SR 1777	4.11	

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
MLKTIA				76.8	8.4	26200	30000086

Request Date	Courier Service	Phone No.	Ext.	Fax No.

County			Municipality					
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
ORANGE	68	7	All and Rural		0	04/01/2014	03/31/2019	5.00

Location Text

NC 86 (Martin Luther King Jr. Blvd) from 150 ft. S of Piney Mountain Rd/Municipal Dr to 150 ft. N of SR 1777 (Homestead Rd)

Requestor

Included Accidents	Old MP	New MP	Type
105731458		3.843	I
105726081		3.843	I
105568687		3.341	I
105564984		3.791	I
105455633		3.843	I
105373904		3.843	I
105365499		3.369	I
105338590		3.82	I
105310133		3.82	I
105307178		3.369	I
105294043		3.695	I
105236010		3.464	I
105046020		3.464	I
104933884		3.464	I
104932738		3.464	I
104889332		3.341	I
104889132		3.464	I
104770020		3.843	I
104654588		3.95	I
104518491		4.08	I
104509987		3.377	I
104481884		3.82	I
104436650		3.348	I
104433895		3.96	I
104355625		3.369	I
104333766		3.464	I

104292726	3.843	I
104231203	3.843	I
104125936	4.08	I
104106978	3.611	I

Excluded Accidents

104654600
104232664
104063872
104355982
105636955
104357865
105310223

Fiche Roads

Name	Code
NC 86	30000086
MARTIN LUTHER KING	50019060
COLUMBIA	50006670
US 15	20000015
US 501	20000501
US 15BUS	29000015
US 501BUS	29000501

Strip Road

Name	Code	Begin MP	End MP	Miles	Kilometers
NC 86	30000086	3.341	4.108	0.767	1.234