

**EAST ROSEMARY STREET
TOWN PARKING DECK REDEVELOPMENT**

TRAFFIC IMPACT STUDY - *DRAFT*



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

April 2020

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I. EXISTING CONDITIONS

A. Project Overview

A new office building and parking deck are being proposed as a combined redevelopment project along E. Rosemary Street, just east of its intersection with NC 86 (N. Columbia Street) in Chapel Hill, NC. Based on traffic impact study scoping discussions with Town of Chapel Hill staff and the Applicant, there will be two separate traffic impact studies conducted for this project. This report contains the initial study of the impacts of the proposed 1,100 space parking deck. A second report will detail the impacts of the proposed office building development after the new parking deck is complete. The overall project proposes to replace the current Town-owned Wallace Parking Deck with a 200,000 square foot office building and to create a new parking deck (with 1,100 spaces) where the existing Rosemary Deck (and adjacent private surface parking lot) are located, just east of PNC Bank. **Figure 1** (found in **Appendix A**) shows the general location of the site. The project is anticipated to be completed in two stages – with the new Parking Deck constructed by 2021 and the office building by 2022. This report analyzes the full build-out scenario for the year 2022 (one year after full build-out of the new parking deck), the no-build scenario for 2022, as well as 2020 existing year traffic conditions.

The proposed site concept plan shows a provision for two full movement access driveways that connect the new parking deck to E. Rosemary Street. Additionally, the concept plan displays a potential parking deck access point onto NC 86 (N. Columbia Street). Additional access could be accommodated along North Street and consideration for this was also included in this study. **Figure 2** displays the initial preliminary concept plan of the new Rosemary Parking Deck and nearby land uses and roadways. The proposed office building and parking deck would likely increase parking availability for the E. Rosemary Street parking deck, surface lot, and Wallace Parking Deck from approximately 850 existing parking spaces to 1,100 parking spaces.

B. Site Location and Study Area

This report analyzes and presents the transportation impacts that the new E. Rosemary Street parking deck will have on the following intersections in the project study area:

- W. Rosemary Street and Church Street
- W. Rosemary Street and NC 86 (N. Columbia Street)
- E. Rosemary Street and Henderson Street
- E. Rosemary Street and Hillsborough Street
- SR 1010 (W. Franklin Street) and Church Street
- SR 1010 (Franklin Street) and NC 86 (Columbia Street)
- SR 1010 (E. Franklin Street) and Henderson Street
- SR 1010 (E. Franklin Street) and Hillsborough Street / Raleigh Street
- NC 86 (N. Columbia Street / MLK Jr. Boulevard) and N. Columbia Street / North Street
- NC 86 (MLK Jr. Boulevard) and Longview Street / Mill Creek Condominiums
- W. Cameron Avenue and NC 86 SB (Pittsboro Street)
- Cameron Avenue and NC 86 (S. Columbia Street)
- E. Cameron Avenue / Country Club Road and Raleigh Street

In addition to these existing intersections, several existing and future driveway access points to/from the existing parking facilities and proposed parking deck will be studied. They include the following:

- E. Rosemary Street and Rosemary Parking Deck Access



- E. Rosemary Street and Private Surface Lot Access
- E. Rosemary Street and West Alley Entrance / West Deck Exit (Wallace Deck Entrance / Exit 1)
- E. Rosemary Street and Wallace Deck East Exit / East Alley Full Access (Wallace Deck Entrance / Exit 2)
- NC 86 (N. Columbia Street) and New E. Rosemary Deck Potential Connection
- North Street and New E. Rosemary Deck Potential Connection
- E. Rosemary Street and New E. Rosemary Deck Proposed Main Entrances / Exits

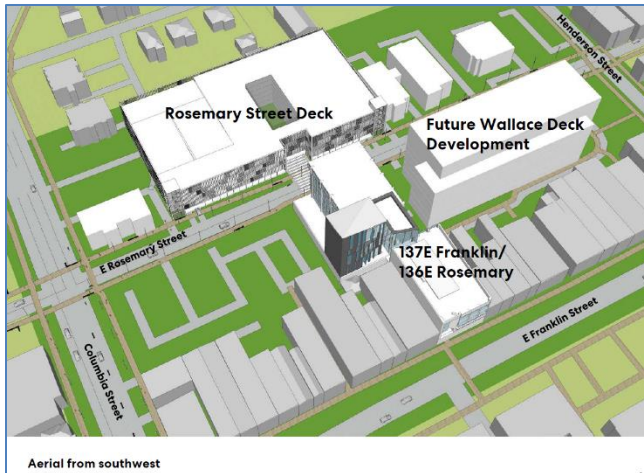
The impacts of the proposed site at the study area intersections will be evaluated during the AM, noon, and PM peak hours of an average weekday. The following study is based on background traffic for the existing year, 2020, the year following the estimated site build-out (2022), as well as the estimated site-generated traffic produced by the proposed parking deck (which will be considered a “net” impact, as the construction of the deck includes the demolition of the current Rosemary Deck and adjacent private surface lot. It also assumes that in the 2022 build-out year, the Wallace Deck will be demolished to allow future construction of the proposed office building.

There is one Town-approved development in the project study area, Union Chapel Hill Apartments, currently under construction and scheduled to open in fall 2020 that will generate additional background traffic. To account for on-going planned growth beyond the immediate project study area, and in consideration the most of the immediately project study area is already nearly built-out, an area-wide ambient future traffic growth percentage of 1.0 percent per year was applied to the existing traffic volumes, which also includes a review of historical average annual daily traffic (AADT) growth rate data provided by the Town of Chapel Hill and NCDOT.

C. Site Description

The proposed parking deck site is currently the location of the Town’s Rosemary Parking Deck with three levels and 285 spaces as well as a private surface parking lot with 109 spaces. Access is only provided in one location along E. Rosemary Street to the existing parking deck and to the private parking lot. The deck borders PNC Bank property to the west and several commercial businesses and additional parking lots to the east (serving the BB&T, Rosemary East and former Bub O’Malley’s buildings). To the north, it borders the North Street residential neighborhood and commercial office development along NC 86 (N. Columbia Street). The rest of the project study area encompasses a large portion of downtown Chapel Hill and parts of UNC’s Main Campus. It is an urban environment with higher density commercial, residential and institutional development mixed with several historic residential neighborhoods.





The proposed parking deck's frontage along E. Rosemary Street which provide all vehicular access at two full movement entrance/exits in the initial build-out scenario. The exits as shown conceptually in **Figure 2**, are located approximately 250 feet apart at either end of the deck structure, with the western access point located approximately 300 feet from NC 86 (N. Columbia Street). Additional access points with NC 86 and North Street were also considered in this study. The parking deck is part of a larger plan to redevelop the existing Wallace Deck into an office building. Wallace Deck space would be consolidated in the proposed size (1,100 spaces) of the new proposed deck facility.

D. Existing and Proposed Uses in Vicinity of Site

The land uses and development in the study area form a large portion of the core of downtown Chapel Hill and are primarily medium to high density commercial, residential and institutional. The Existing Land Use Plan shown in the 2020 *Town of Chapel Hill Comprehensive Plan* and adopted September 25, 2012, indicates that the proposed site is currently designated as "Town/Village Center". The Future Land Use Plan, that is also a part of the Town Comprehensive Plan, indicates that the parcel would continue in "Town/Village Center" designation, as well as be part of a "Downtown Future Focus Discussion Area". The parcel is currently zoned "TC-2" – delineating it as "Town Center-2".

E. Existing and Committed Surface Transportation Network

Roadways

The E. Rosemary Street Parking Deck project study area includes a large portion of Downtown Chapel Hill and features several principal arterials, minor arterials, and collector/local roads serving areas throughout Downtown Chapel Hill and points beyond. **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 (most recently published data available). **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:

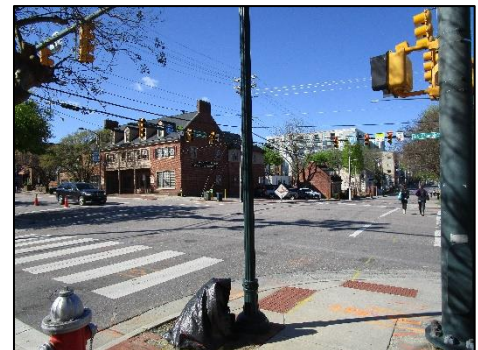
- **NC 86 (Columbia Street / MLK Jr. Boulevard)** is a principal arterial in the study area, serving areas from I-40 (via Martin Luther King Jr. Boulevard) to downtown Chapel Hill. In the study vicinity, NC 86 (Columbia Street / MLK Jr. Boulevard) varies from a four-lane undivided cross-section to a five-lane roadway with center two-way left-turn lane, with left-turn and right-turn lanes at select intersections. There are a few driveway access points along the roadway and several major street intersections. On-street parking is permitted in some designated areas along Columbia Street. Several bus stops are located along the facility. The posted speed limit is 35 mph in the study area north of Rosemary Street and drops to 25 mph through the downtown and UNC Main Campus area.
- **NC 86 Northbound (S. Columbia Street)** becomes a northbound one-way street south of Cameron Avenue. It is a principal arterial in the study area with a three-lane undivided cross-section. On-street parking is not permitted in the study area and the posted speed limit is 25 mph.



- **NC 86 Southbound (Pittsboro Street)** is a southbound one-way street south of Cameron Avenue. It is a principal arterial in the study area with a two-lane undivided cross-section. On-street parking is not permitted in the study area and the posted speed limit is 25 mph.
- **SR 1010 (Franklin Street)** is an arterial (E. Franklin Street is a principal arterial and W. Franklin Street is a minor arterial) in the study area, serving areas from downtown Chapel Hill to downtown Carrboro. In the study area vicinity, Franklin Street varies from a five-lane roadway with center two-way left-turn lane west of NC 86 (Columbia Street) to a four-lane undivided cross-section east of NC 86 (Columbia Street) with left-turn storage bays at select intersections. There are numerous driveway access points along the roadway and several minor street intersections. On-street parking is permitted in some designated areas along Franklin Street. Several bus stops are located along the facility in the study area vicinity. The posted speed limit is 20 mph in the project vicinity.
- **Rosemary Street** is designated a local street by NCDOT in the study area, serving areas from downtown Chapel Hill to downtown Carrboro. In the study area vicinity, Rosemary Street varies between a two-lane and a three-lane roadway. There are numerous driveway access points along the roadway and several minor street intersections. On-street parking is permitted in some designated areas along Rosemary Street. Several bus stops are located along the facility. The posted speed limit is 20 mph in the project study area.
- **Cameron Avenue** is predominantly a local street (as designated by NCDOT) in the study area and serves areas that include east Chapel Hill, the UNC campus, and southeast Carrboro. For a brief stretch from NC 86 (Pittsboro Street) to NC 86 (S. Columbia Street), Cameron Avenue is designated NC 86, is a principal arterial, and has a four-lane undivided cross-section. Otherwise, Cameron Avenue is a two-lane in the study area. There are numerous cross walks along the E. Cameron Avenue that provide pedestrian access for the UNC campus and on-street parking is permitted at some designated areas. The posted speed limit is 25 mph in the project study area.
- The other study area public roadways are two-lane undivided local access facilities with 25 or 35 mph posted speed limits. Most feature sidewalks on at least one side of the roadway.

Intersections

Table 2 summarizes all major 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 in Downtown Chapel Hill features a mixture of signalized and unsignalized intersections, with many of the signalized intersections in the downtown area included in this study. The Rosemary Street, SR 1010 (Franklin Street), NC 86 (Columbia Street / MLK Jr. Boulevard), and Cameron Avenue corridors feature coordinated signal operation at most signals for weekday peak hours.



Bicycle Routes and Sidewalks

Specific bicycle facilities are present within the study area, with striped bicycle lanes on W. Rosemary Street west of NC 86 (N. Columbia Street), on W. Cameron Avenue west of NC 86 Southbound (Pittsboro Street), and on NC 86 Southbound (Pittsboro Street) south of W. Cameron Avenue. No other exclusive-use bicycle facilities are currently present, though several roadways have painted “sharrows” to delineate space for bicycling. Pedestrian sidewalks are found on both sides of the road on the major Rosemary Street, SR 1010 (Franklin Street), NC 86 (Columbia Street / MLK Jr. Boulevard), and Cameron Avenue corridors and along at least one side of every road throughout the study area. Crosswalks and pedestrian signals are present at all 12 signalized intersections in the study area, with additional unsignalized



crosswalks at many locations throughout the study area. There is currently an “over street” walkway bridge that connects the existing Rosemary parking deck to the office building on the other side of E. Rosemary Street. **Figure 4** displays a schematic of existing pedestrian and bicycle facilities in the project study area.

Table 1. Existing Study Area Roadways

Road Name	Functional Classification*	Study Area Cross-Section	2017 AADT	Speed Limit	Sidewalk	On-Street Parking
NC 86 (MLK Jr. Boulevard)	Principal Arterial	5-lane undivided with TWLTL	19,000	35	Y	N
NC 86 (Columbia Street)	Principal Arterial	4- to 5-lane undivided	15,000	25 / 35	Y	S
NC 86 (Columbia Street) Northbound One-Way Street	Principal Arterial	3-lane undivided	9,300	25	Y	N
NC 86 (Pittsboro Street)	Principal Arterial	2-lane undivided	8,500	25	Y	N
SR 1010 (E. Franklin Street)	Principal Arterial	4-lane undivided	14,000	20	Y	Y
SR 1010 (W. Franklin Street)	Minor Arterial	5-lane undivided with TWLTL	13,000	20	Y	S
E. Rosemary Street	Local	2- to 3-lane undivided	N/A	20	Y	N
W. Rosemary Street	Local	2-lane undivided	N/A	20	Y	N
E. Longview Street	Local	2-lane undivided	N/A	25	S	N
N. Columbia Street	Local	2-lane undivided	N/A	25 / 35	S	N
North Street	Local	2-lane undivided	N/A	20	S	N
Church Street	Local	2-lane undivided	N/A	25	Y	N
W. Cameron Avenue	Local	2-lane undivided	7,100	25	Y	S
NC 86 (W. Cameron Ave)	Principal Arterial	4-lane undivided	13,000	25	Y	N
E. Cameron Avenue	Local	2-lane undivided	N/A	25	Y	N
Henderson Street	Local	2-lane undivided	N/A	25	Y	Y
Hillsborough Street	Local	2-lane undivided	8,100 ^S	25	S	N
Raleigh Street	Local	2-lane undivided	4,800	25	S	S
Country Club Road	Local	2-lane undivided	12,000	25	Y	S

S – Some Sidewalk/Parking Present TWLTL – Two-Way Left-turn Lane \$ - 2015 AADT Data

* - As defined on the NCDOT Functional Classification web page <http://ncdot.maps.arcgis.com/home/webmap/viewer.html>

Table 2. Existing Study Area Intersection Details

Intersection	Traffic Control	Signal Phases	Signal Operation	Cross walk	Ped Signals
W. Rosemary Street and Church Street	Signal	2	Coordinated	Yes (4)	Yes (4)
W. Rosemary Street and NC 86 (N. Columbia Street)	Signal	6	Coordinated	Yes (4)	Yes (4)
E. Rosemary Street and Henderson Street	Signal	2	Coordinated	Yes (4)	Yes (4)
E. Rosemary Street and Hillsborough Street	Signal	3	Coordinated	Yes (4)	Yes (4)
W. Franklin Street and Church Street	Signal	2	Coordinated	Yes (4)	Yes (4)
Franklin Street and NC 86 (Columbia Street)	Signal	8	Coordinated	Yes (4)	Yes (4)
E. Franklin Street and Henderson Street	Signal	2	Coordinated	Yes (3)	Yes (3)
E. Franklin Street and Hillsborough St. / Raleigh Street	Signal	3	Coordinated	Yes (4)	Yes (4)
NC 86 (MLK Jr. Blvd) and N. Columbia St. / North St	TWSC	N/A	N/A	No	No
NC 86 (MLK Jr. Boulevard) and Longview Street	Signal	2	Free-Run	Yes (3)	Yes (3)
W. Cameron Avenue and NC 86 SB (Pittsboro Street)	Signal	3	Coordinated	Yes (2)	Yes (2)
Cameron Avenue and NC 86 (S. Columbia Street)	Signal	4*	Coordinated	Yes (4)	Yes (4)
E. Cameron Ave. / Country Club Rd and Raleigh Street	Signal	6	Free-Run	Yes (4)	Yes (4)

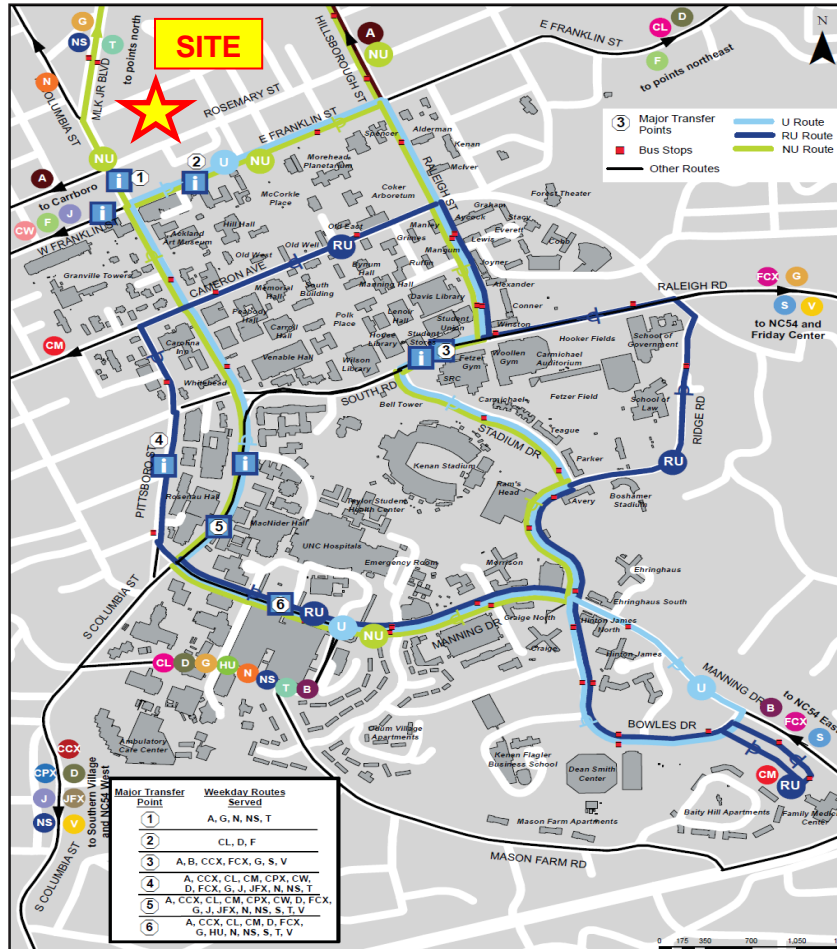
TWSC = Two-Way Stop Controlled Intersection * - The 4th phase is an all-pedestrian phase



Transit Routes

Various Chapel Hill Transit (CHT) routes currently serve the study area in Downtown Chapel Hill with weekday bus service and Saturday service. Numerous bus stops, with a range of amenities (shelters, benches, bus pull-outs), are present in the study area. **Exhibit 1** details the current CHT routes serving the downtown Chapel Hill and the study area.

Exhibit 1. Current Study Area Weekday Transit Service



Source: CHT 2019 Fall Ride Guide

The potential for transit trips related to the parking deck land use is low and compared to other development projects the evaluation of transit impacts for this particular study is limited. As shown on the Exhibit above, access and connectivity from the deck to transit options serving all areas of Chapel Hill is currently very good.

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 2020 – 2022 STIP. There is one Town of Chapel Hill transportation-related project in the project study area expected to be complete by 2022 – the West Franklin Lane Reallocation that will eliminate a through travel lane in each direction from Merritt Mill Road to NC 86 (Columbia Street). The reallocation will improve facilities for pedestrian, bicycle, transit, and commercial vehicle loading zones. 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

Figures 5 and 5A show 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 January and February 2020 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 3** provides a detailed listing of each intersection count, peak hour, and count date.

Traffic count information in **Figures 5 and 5A** shows traffic flows inbound to the downtown Chapel Hill and UNC Main Campus area were relatively heavy during the AM peak count period. Activity was also relatively high during the noon peak hour, with generally equal traffic directional distributions throughout the downtown network on higher volume arterial roadway facilities. Highest overall traffic volumes in the project study area were generally in the PM peak hour. Traffic on E. Rosemary Street adjacent to the project site was moderate during the peak commuting periods, with a considerable proportion of the overall traffic flow on this block originating or terminating at the existing parking facilities. Traffic flows were light to moderate on the remaining study area roadways that function as collector or local streets.

II. FUTURE 2022 BUILD-OUT YEAR+1 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 1.0 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 growth over the last 15 years. However, as described in the following section, anticipated traffic volume growth from development projects outside the immediate project study area may lead to growth on study area roadways over the next several years, which is accounted for in the conservative 1.0 percent per year ambient growth rate.

B. Approved Background Development Traffic Estimation

Per information from Town of Chapel Hill staff and the Town's Development Activity Report, potential future developments that are either currently in the concept plan phase, approved, 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. In the downtown project study area specifically, on development, Union Chapel Hill Apartments is nearing completion and would be expected to affect 2022 analysis year traffic volumes. **Figure 6** shows the relative location of the Union Chapel Hill Apartments background development as well as location of future transportation network improvement projects. **Figures 7 and 7A** show the total background peak hour traffic volumes estimated for the 2022 Without Site analysis scenario. These volumes include the projected ambient area-wide traffic growth which includes the specific background generator effects beyond the study area.

C. Proposed Project Traffic

i. Trip Generation

Projected trips for the proposed parking deck redevelopment were generated based on existing traffic count data collected at the current Rosemary Parking Deck, adjacent private surface parking lot facility and Wallace Parking Deck. Existing peak hour activity data for these facilities (trips in/out of the parking facilities) was compared to information provided by the Town and Applicant regarding



Table 3. Traffic Count Information

Count Location	Period Counted	Peak Hour	Date of Count
W. Rosemary Street & Church Street	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
W. Rosemary Street & NC 86 (N. Columbia St)	AM Peak	7:45 – 8:45 AM	2/25/20
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
E. Rosemary Street & Rosemary Parking Deck	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	11:45 AM–12:45 PM	
	PM Peak	4:45 – 5:45 PM	2/19/20
E. Rosemary Street & Surface Lot	AM Peak	7:30 – 8:30 AM	2/25/20
	Noon Peak	12:15 – 1:15 PM	
	PM Peak	4:30 – 5:30 PM	2/19/20
E. Rosemary Street & W Alley Entrance	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
E. Rosemary Street & Wallace Deck West Exit	AM Peak	7:15 – 8:15 AM	2/25/20
	Noon Peak	11:45 AM–12:45 PM	
	PM Peak	4:45 – 5:45 PM	2/19/20
E. Rosemary Street & Wallace Deck East Exit	AM Peak	7:45 – 8:45 AM	2/25/20
	Noon Peak	11:45 AM–12:45 PM	
	PM Peak	4:00 – 5:00 PM	2/19/20
E. Rosemary Street & East Alley Full Access	AM Peak	7:45 – 8:45 AM	2/25/20
	Noon Peak	12:15 – 1:15 PM	
	PM Peak	4:45 – 5:45 PM	2/19/20
E. Rosemary Street & Henderson Street	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	11:45 AM–12:45 PM	
	PM Peak	4:45 – 5:45 PM	2/19/20
E. Rosemary Street & Hillsborough Street	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	11:45 AM–12:45 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20

Count Location	Period Counted	Peak Hour	Date of Count
SR 1010 (W. Franklin Street) & Church Street	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	5:00 – 6:00 PM	1/21/20
SR 1010 (Franklin Street) & NC 86 (Columbia Street)	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	5:00 – 6:00 PM	1/21/20
SR 1010 (E. Franklin Street) & Henderson Street	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	11:45 AM–12:45 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
SR 1010 (E. Franklin Street) & Hillsborough Street / Raleigh Street	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
NC 86 (MLK Jr. Blvd) & N. Columbia Street / North Street	AM Peak	7:45 – 8:45 AM	2/25/20
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
NC 86 (MLK Jr. Boulevard) & Longview Street	AM Peak	7:30 – 8:30 AM	2/25/20
	Noon Peak	11:30 AM–12:30 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
W. Cameron Avenue & NC 86 SB (Pittsboro Street)	AM Peak	7:30 – 8:30 AM	2/25/20
	Noon Peak	11:45 AM–12:45 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
Cameron Avenue & NC 86 (S. Columbia Street)	AM Peak	7:30 – 8:30 AM	2/25/20
	Noon Peak	11:45 AM–12:45 PM	
	PM Peak	5:00 – 6:00 PM	2/19/20
E. Cameron Avenue / Country Club Road & Raleigh Street	AM Peak	8:00 – 9:00 AM	2/25/20
	Noon Peak	12:00 – 1:00 PM	
	PM Peak	4:45 – 5:45 PM	2/19/20



existing parking occupancies, capacities and future projected deck size. The method of “generating” parking trips was to consider existing parking deck/lot capacities and utilization and compare to future deck planned capacity and utilization (occupancy). Data from the *Town of Chapel Hill Parking Study*, (Walker Parking Consultants, 2018) is shown below regarding existing parking lot occupancy from the current facilities between 10 AM and 2 PM on a typical weekday.

Table 4. Existing Parking Occupancy Data

Parking Facility	Occupied Spaces	Total Spaces	Occupancy Rate
Rosemary Deck	205	285	72%
Private Surface Lot	93	109	85%
Wallace Deck	300	306	98%
Total	598	700	85%

Data from the Town staff indicate that in total, there are approximately 840 existing parking spaces from these facilities and others nearby that may be transferred to the proposed new parking deck. An additional 260 spaces for future growth have been proposed. The resulting existing capacity/new capacity ratio is 1100 divided by 840 or approximately **1.24**. This “growth factor” was applied to existing traffic volumes under the assumption that the current overall 85%+ utilization rate in existing facilities is desired for the new parking deck and future usage rates during AM, noon, and PM peak hours would remain generally the same as the field data collected. The following text from page 4 of the Town Parking Study explains the occupancy rate and its relation to efficiency and correlation when a parking facility is “full”.

“A parking supply operates at peak efficiency when parking occupancy, including both transient and monthly parking patrons, is approximately 85 percent to 95 percent of the supply. When occupancy exceeds this level, patrons may experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though there are some spaces available in the parking system.”

Translating the parking occupancy “goals” with peak hour vehicular trips, if the current parking options collectively on E. Rosemary Street are 85% occupancy or above, they are being efficiently utilized on a typical weekday and the corresponding traffic count data for peak hour operations can reasonably be assumed to have a growth factor applied to it as the number of expansion spaces would likely “produce” similar numbers of trips on a per space basis assuming the same desired occupancy rates.

Table 5 shows the total number of vehicular trips that may be generated by East Rosemary Parking Deck during the weekday 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.

ii.) Adjustments to Trip Generation Rates/Results

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 East Rosemary Street Parking Deck redevelopment.

a.) Internal Capture

The East Rosemary Street Parking Deck would not exhibit any potential for internally captured peak period trips for any on-site uses, as its sole function is to serve as a parking deck for downtown activity. No additional modifications or reductions were made to trip generation results to account for internal capture.



Table 5. Weekday Vehicle Trip Generation Summary

Facility	Units	Daily Estimate [@]			AM Peak Hour			Noon Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Rosemary Deck Counts	285	310	310	620	40	2	42	62	29	91	12	50	62
Private Lot Counts	109	110	110	220	22	0	22	5	1	6	1	18	19
Wallace Deck/Alley Counts	306	945	945	1890	121	14	135	75	78	153	59	130	189
Existing Total Parking Trips (Reallocated to new deck)	700	1365	1365	2730	183	16	199	142	108	250	72	198	270
Proposed Lot Ratio (1100 / 842) – “Net” New Trips	0.235	321	321	643	43	4	47	33	25	58	17	47	64
Total Trips To/From New Deck		1686	1686	3373	226	20	246	175	133	308	89	245	334

@ - No Daily Count Information Available, Estimate is a Factor of 10X the Highest Total Peak Hour Count

b.) Modal Split

No mode split adjustments were made for this trip generation analysis, as trips to/from the parking deck are considered to be “vehicle” trips, as the primary function of the deck is to serve vehicular traffic. The deck design may also contain provisions for bicycle parking/storage, but these effects were not considered in the trip generation process.

c.) Pass-by Trips

No pass-by trips were accounted for in this study, since the proposed East Rosemary Parking Deck redevelopment is not a typical pass-by trip generator.

d.) Trip Generation Budget

Current plans for East Rosemary Parking Deck are for the project to be built in a single phase over a 2 year period. This report considers the full build-out of the entire deck and closure of parking facilities on the site on which it is located, along with the Wallace Deck to the east of the site. The study results will be taken into consideration for the subsequent traffic impact study for the proposed office building that will be located on the location of the current Wallace Deck. At this point, no trip generation budget (or potential parking deck size cap) is necessary for future scenarios if the development is built to the size and intensity as indicated on the site concept plans.

e.) Demolition of Existing Parking Facilities

Table 5 includes the total estimates of existing trips that will be transferred to the new parking deck with the demolition of the adjacent existing parking facilities. With new additional spaces being built above the total existing parking lot capacity along the E. Rosemary Street corridor, a growth ratio was used to calculate “net” new trips.

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. No local trips to/from lower volume collector and residential streets were estimated, though the possibility exists a small portion of trip-making may occur to/from these local



streets. Basic distribution estimates for site traffic flow utilized existing peak hour turning movement counts and overall comparison to local and regional trip attractors. Consideration was also given to existing entry/exit patterns from the existing parking facilities along E. Rosemary Street.

Figures 8, 8A, and 8B present the projected trip distribution traffic percentages for the proposed site in 2022. It was assumed that a majority of site-related trips would use the nearest proposed entrance along E. Rosemary Street for access to the deck internal parking circulation and would exit in a similar fashion from that specific access location. In **Figure 8B**, with potential proposed access modifications along N. Columbia and North Streets, it was assumed that all trips from NC 86 (Martin Luther King Jr. Blvd) would use these locations for ingress/egress and that no other site-related traffic would use utilize them, though it is probable that some trips may enter on E. Rosemary and exit, in this case, on NC 86.

iv.) Trip Assignment

Figures 9, 9A and 9B shows the corresponding East Rosemary Parking Deck site traffic volumes distributed on the 2022 study area network. Total volumes into and out of the site correspond to total external vehicular trips generated, based on the trip generation methodology developed previously.

In the traffic volume development process for the 2022 With Site scenarios, existing trips into/out of the existing parking facilities along E. Rosemary Street were removed from the network in 2022. This was done by taking turning movements in/out of each facility along the E. Rosemary Street corridor and balancing the negative numbers of trips at the NC 86 and Henderson Street intersections and then applying a distribution of these “removed” trips throughout the study area based on existing traffic count data, similar to the distribution process for site trips described above. Then, the total trip generation data for the new deck (existing transferred trips and “net” new trips due to deck parking capacity expansion) were distributed on the network for both scenarios.

D. Future Traffic Forecasts with the Proposed Parking Deck Redevelopment

Figures 10, 10A and 10B display the 2022 Build-out+1 year projected study area traffic volumes with site traffic added for the two trip distribution scenarios outlined previously. These traffic volumes represent the aggregate traffic growth over existing traffic volumes for a) ambient traffic growth, b) specific background development traffic generation, and c) estimated site traffic assignment from East Rosemary Parking Deck in each scenario. **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 *Highway Capacity Manual 6th Edition (HCM 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 6**.

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 four conditions were evaluated:

Condition 1 - Existing Traffic

Condition 2 - 2022 Traffic without Site Traffic

Condition 3 - 2022 Traffic with Site Traffic Volumes Added (Current Site Concept Plan with E. Rosemary Access Only – Elimination of Current Rosemary and Wallace Decks)

Condition 4 - 2022 Traffic with Site Traffic Volumes and Necessary Mitigation Improvements Including Alternative Access Scenario

Table 6. 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 *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 Version 6 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 or due to effects of committed background improvement projects. 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. No changes to free run signal inputs were made for Conditions 2 and 3.
- **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 and account for queue storage issues.

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 2 and 3 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 under study.

ii.) 2020 Existing Conditions Results

Table 7 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 2020 peak hours, though several are near capacity and have approaches and individual turn movements that are at/over capacity in at least one peak hour. The stop-controlled minor street westbound approach at North Street with its intersection with NC 86 operates at a deficient LOS F in the PM peak hour, currently. No other two-way stop-controlled intersection critical movements have deficient peak hour operations in 2020.



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

Table 8 presents the results for the 2022 Build-out+1 analysis year estimated traffic conditions without the impacts of the new parking deck and closure of the adjacent existing parking facilities. This analysis includes ambient area-wide growth over the next two years and assumes the roadway geometric and signal timing changes due to the anticipated Town's W. Franklin Lane Reallocation project. It was assumed that because of signal timing changes necessary specifically at the W. Franklin Street intersections with Church Street and NC 86 (Columbia Street) the entire coordinated signal system in the downtown area would have at least minor adjustments to upstream/downstream signal timings, particularly with signal offsets, due to the change in roadway configuration on W. Franklin Street and the changes envisioned at the Franklin Street/Columbia Street intersection related to signal phasing.

During Condition 2 - 2022 Without Site Traffic, some delays marginally increase for most study area intersections/critical movements, with the same deficient LOS E or F approaches in the AM and PM peak hours at signalized intersections. With anticipated retiming of intersections along the Franklin Street corridor due to the W. Franklin Street Lane Reallocation project, some intersections (based on projected traffic volumes taken from existing traffic counts) may benefit from the overall retiming to allow slightly better operations that what was reported for Condition 1 – 2020 Existing Traffic. The projected overall intersection LOS at Franklin Street/Columbia Street drops to a LOS E from a LOS D (49.8 to 58.7 seconds/vehicle) in the 2022 Without Site Scenario. This is primarily due to the Lane Reallocation project removing a westbound through travel lane at this intersection.

Maximum queue analyses indicate that at higher volume intersections, queue storage for some left-turn lane may not be adequate in at least one peak hour, similar to conditions experienced in the 2020 Existing conditions scenario. No other operational deficiencies for signalized or unsignalized intersections in the project study area are expected in any of the three peak hours analyzed.

iv.) 2022 Build Scenario (Condition 3) Results

Table 9 presents results for 2022 Build-out+1 year estimated traffic conditions, including impacts of site-related traffic with the current site concept plan. The effects of the proposed parking deck compared to No-Build conditions are “net” impacts focused on traffic volume increases due to increased parking deck capacity and potential traffic redistribution due to existing parking deck and lot closures along E. Rosemary Street and the surrounding streets providing connectivity.

In general, the addition of “net additional” 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. Due to potential traffic redistributions throughout the network by removing existing parking deck/lot trips and then adding the total deck trip generation demand in estimated distribution patterns, some intersections are shown to slightly “improve” from 2022 Without site conditions. .

Overall projected queue and queue storage issues are expected to marginally lengthen/worsen in the Build scenario if additional “net” traffic volumes at a particular location/movement increase. This is also true at the NC 86 / Rosemary Street intersection for the critical westbound approach. In the 2022 PM peak hour, it is likely that the proposed western deck access point would be blocked by westbound queued traffic.



Table 7. Capacity Analysis Results for Study Area Intersections Condition 1 – 2020 Existing Traffic

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95 th % Queue Length (Ft)			Existing Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
W. Rosemary Street & Church Street	B	B	B	11.3	10.8	15.8				
EB LT-THRU-RT	A	A	A	5.6	5.8	9.5	100	125	225	N/A
WB LT-THRU-RT	A	A	B	8.4	3.0	12.5	200	50	m250	
NB LT-THRU-RT	C	D	C	25.9	40.3	33.2	75	125	150	
SB LT-THRU-RT	C	C	C	26.8	26.2	26.7	75	50	100	
W. Rosemary Street & NC 86	C	C	C	25.4	32.4	34.6				
EB LT	D	D	F	38.9	43.1	86.0	150	125	#325	100
EB THRU-RT	C	C	D	30.3	34.1	37.7	200	250	300	150
WB LT	D	D	E	36.3	46.7	60.6	m25	m75	100	
WB THRU-RT	E	E	F	62.8	74.3	95.5	250	325	#425	75
NB LT	A	B	A	8.4	12.4	9.0	m25	m50	m25	
NB THRU-RT	B	B	B	11.6	15.2	13.0	75	150	100	
SB LT	B	B	B	13.8	17.5	16.7	75	75	75	
SB THRU	C	C	C	21.6	24.3	24.9	250	175	225	150
SB RT	B	B	B	10.2	17.1	16.1	125	150	175	
E. Rosemary St & Rosemary Parking Dk	N/A	N/A	N/A	N/A	N/A	N/A				
EB LT	A	A	A	8.0	8.0	7.9	0	25	0	125
SB LT-RT	B	B	B	11	11.7	11.6	0	25	25	
E. Rosemary St & Wallace Deck West Dr	N/A	N/A	N/A	N/A	N/A	N/A				
WB LT	A	A	A	8.0	8.2	8.5	25	25	25	75
NB LT-RT	B	B	B	11.6	12.1	12.7	25	25	25	
E. Rosemary St & Wallace Deck East Dr	N/A	N/A	N/A	N/A	N/A	N/A				
WB LT	A	A	A	7.7	8.0	8.4	0	0	0	0
NB LT-RT	B	B	B	10.5	11.2	12.9	25	25	25	
E. Rosemary St & Henderson St	A	B	B	8.0	12.7	13.4				
EB LT	A	A	A	2.8	4.5	4.2	m25	m25	m25	75
EB THRU-RT	A	A	A	3.0	6.5	7.5	50	150	300	
WB LT-THRU-RT	A	A	A	5.3	4.6	7.7	125	75	150	
NB LT-THRU-RT	C	D	D	26.9	37.8	40.7	50	50	100	
SB LT-THRU-RT	C	C	C	23.9	22.6	27.2	50	50	75	
E. Rosemary St & Hillsborough St	B	B	B	14.8	18.9	17.5				
EB LT-THRU-RT	C	D	C	20.4	44.6	26.9	50	150	150	100
WB LT-THRU-RT	C	C	C	28.8	21.5	26.3	75	50	100	
NB LT	A	A	A	6.8	6.4	8.3	75	75	75	
NB THRU-RT	A	A	A	5.8	5.6	8.7	75	75	125	
SB LT	B	B	B	11.5	13.6	16.0	25	25	50	100
SB THRU-RT	B	B	B	13.9	14.5	16.4	200	125	150	
W. Franklin St & Church St	A	B	B	6.4	10.7	15.0				
EB LT	A	A	B	4.8	6.7	10.4	25	25	50	150
EB THRU-RT	A	A	A	4.3	5.4	8.0	50	75	100	
WB LT	A	A	B	4.4	6.1	13.5	m25	m25	m50	200
WB THRU-RT	A	A	B	3.4	6.8	13.9	75	50	275	
NB LT-THRU	B	B	C	19.9	19.9	21.0	25	25	75	100
NB RT	C	C	B	20.4	20.2	19.3	25	25	50	
SB LT-THRU-RT	C	D	C	22.2	38.5	33.0	75	75	125	
Cameron Ave/Country Club Rd & Raleigh	C	C	C	22.8	20.4	29.6				
EB LT-THRU-RT	C	C	C	22.1	25.1	34.7	100	125	225	150
WB LT	B	B	B	12.4	13.5	14.9	25	25	50	
WB THRU-RT	C	C	C	24.8	22.1	24.6	250	175	250	125
NB LT	B	B	B	14.6	12.3	17.3	25	25	50	
NB THRU-RT	C	C	D	31.7	29.4	42.7	75	100	175	
SB LT	C	B	C	20.3	14.5	25.1	#200	125	#225	
SB THRU-RT	C	B	C	21.9	18.8	32.1	175	125	250	75

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95 th % Queue Length (Ft)			Existing Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
Franklin St & NC 86 (Columbia St)	C	D	D	33.1	40.8	49.8				
EB LT	E	F	F	70.2	86.8	91.9	100	150	#275	250
EB THRU-RT	C	C	D	29.2	26.7	35.8	200	200	275	
WB LT	E	E	E	78.2	62.1	79.4	125	100	175	125
WB THRU-RT	B	C	E	15.1	28.4	57.2	75	250	400	
NB LT	D	E	D	36.2	73.7	46.9	m50	100	m75	475
NB THRU-RT	C	D	D	34.9	37.6	48.3	225	225	#500	
SB LT	F	F	F	92.5	91.7	104.0	75	100	m150	125
SB THRU-RT	C	D	C	31.0	41.3	26.9	125	100	125	
E. Franklin St & Henderson St	A	B	B	7.4	12.7	15.8				
EB LT-THRU	A	A	A	5.8	6.3	6.7	100	125	m75	N/A
WB THRU-RT	A	A	B	5.4	9.2	13.3	175	175	300	
SB LT-RT	C	C	D	24.1	35.0	46.6	50	75	175	
E. Franklin St & Hillsborough/Raleigh St	C	C	C	32.0	29.9	31.9				
EB LT	B	B	B	19.1	12.9	14.6	50	m75	m75	75
EB THRU-RT	B	B	B	15.8	11.8	16.0	175	200	350	
WB LT	B	B	B	16.3	11.0	10.2	50	50	50	75
WB THRU-RT	B	B	B	15.7	10.5	10.1	200	175	275	
NB LT-THRU-RT	E	F	F	73.2	94.9	136.6	300	325	#400	100
SB LT	C	D	E	30.1	39.8	55.6	50	75	75	
SB THRU-RT	D	D	E	42.7	45.0	57.9	375	175	200	
NC 86 & N. Columbia St / North St	N/A	N/A	N/A	N/A	N/A	N/A				
NB LT	A	A	A	9.8	9.0	9.9	25	25	25	150
SB LT	A	A	B	8.5	8.7	10.5	0	0	25	
EB LT-THRU-RT	C	B	C	15.1	13.3	21.4	25	25	50	350
WB LT-THRU-RT	B	B	F	13.2	14.6	85.5	25	25	125	
NC 86 (MLK Jr. Blvd) & Longview St	A	A	A	9.4	5.5	8.0				
EB LT-THRU-RT	B	B	B	17.5	12.3	18.3	50	25	75	225
WB LT-THRU-RT	B	B	B	12.0	10.3	15.5	25	25	50	
NB LT	A	A	A	6.5	5.6	6.0	25	25	25	250
NB THRU-RT	A	A	A	7.2	5.0	7.4	75	75	150	
SB LT	N/A	A	A	N/A	5.0	6.1	N/A	25	25	
SB THRU-RT	A	A	A	8.9	5.1	6.6	125	75	100	
W. Cameron Ave & NC 86 (Pittsboro St)	C	C	C	24.0	21.5	30.8				
EB THRU-RT	E	C	E	58.1	32.3	66.0	#225	225	450	75
WB LT	B	C	C	11.3	22.2	24.4	250	200	m250	
WB THRU	A	A	A	5.0	5.1	2.5	m75	m100	m50	
Cameron Ave & NC 86 (S. Columbia St)	C	C	D	32.1	33.4	47.9				
EB LT	C	F	E	30.8	86.0	74.7	m25	m25	m25	100
EB THRU	D	F	E	35.9	83.1	73.7	m75	m75	m175	
WB THRU-RT	E	E	F	62.4	71.6	90.3	150	175	#375	300
NB LT	C	C	C	26.9	24.2	34.4	125	175	250	
NB LT-THRU-RT	C	C	D	29.9	24.2	45.0	225	200	450	
SB LT	C	B	C	23.8	14.5	30.4	m50	m50	100	
SB RT	C	C	D	28.0	27.4	36.3	150	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
PURPLE – Maximum Queue May Exceed Storage Bay Distance
 m – Volume for 95th percentile queue is metered by upstream signal
 # – 95th percentile volume exceeds capacity, queue may be longer (queue shown is maximum after 2 cycles)



Table 8. Capacity Analysis Results for Study Area Intersections Condition 2 – 2022 Traffic Without Proposed Parking Deck

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95 th % Queue Length (Ft)			Future Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
W. Rosemary Street & Church Street	A	A	B	9.2	9.5	13.9				
EB LT-THRU-RT	A	A	A	5.7	6.0	9.9	125	125	225	N/A
WB LT-THRU-RT	A	A	A	3.3	2.6	5.9	50	50	m100	
NB LT-THRU-RT	C	C	D	24.6	31.6	36.9	75	75	m100	
SB LT-THRU-RT	C	C	C	27.1	26.2	26.6	75	50	100	
W. Rosemary Street & NC 86	C	C	D	26.6	29.6	35.9				
EB LT	D	C	F	38.8	29.6	100.5	150	125	#375	100
EB THRU-RT	C	C	D	33.5	27.3	44.3	225	225	400	150
WB LT	D	D	D	36.5	40.9	54.3	m25	75	100	
WB THRU-RT	E	D	F	58.7	54.4	92.5	200	#400	#450	75
NB LT	B	B	A	11.0	16.4	5.6	m25	m50	m25	
NB THRU-RT	B	C	B	14.1	20.3	10.1	100	125	m75	150
SB LT	B	C	B	15.3	21.9	17.3	75	75	75	
SB THRU	C	C	C	23.8	30.3	25.6	275	175	250	400
SB RT	B	B	B	10.8	17.4	16.9	125	125	200	
E. Rosemary St & Rosemary Parking Dk	N/A	N/A	N/A	N/A	N/A	N/A				
EB LT	A	A	A	8.0	8.1	8.0	0	25	0	125
SB LT-RT	B	B	B	11.1	11.8	11.7	0	25	25	
E. Rosemary St & Wallace Deck West Dr	N/A	N/A	N/A	N/A	N/A	N/A				
WB LT	A	A	A	8.0	8.2	8.5	25	25	25	75
NB LT-RT	B	B	B	11.8	12.3	12.9	25	25	25	
E. Rosemary St & Wallace Deck East Dr	N/A	N/A	N/A	N/A	N/A	N/A				
WB LT	A	A	A	7.7	8.0	8.4	0	0	0	0
NB LT-RT	B	B	B	10.6	11.4	13.1	25	25	25	
E. Rosemary St & Henderson St	A	B	B	8.6	12.4	11.3				
EB LT	A	A	A	5.8	5.5	6.1	m25	m25	m25	75
EB THRU-RT	A	A	A	5.5	5.6	7.8	100	100	250	
WB LT-THRU-RT	A	A	A	5.1	6.6	5.2	100	125	125	
NB LT-THRU-RT	C	D	C	27.1	36.1	28.4	75	75	50	
SB LT-THRU-RT	C	C	C	24.0	21.4	26.2	50	50	75	
E. Rosemary St & Hillsborough St	B	B	B	15.0	15.5	17.4				
EB LT-THRU-RT	C	C	C	28.5	31.5	29.9	100	100	125	100
WB LT-THRU-RT	C	C	C	29.0	21.3	25.6	100	50	100	
NB LT	A	A	A	3.4	6.5	6.9	25	75	75	
NB THRU-RT	A	A	A	2.3	5.7	7.5	25	100	175	
SB LT	B	B	B	11.0	13.0	16.2	25	25	50	100
SB THRU-RT	B	B	B	14.3	14.7	17.0	225	150	150	
W. Franklin St & Church St	A	B	B	7.8	11.8	18.3				
EB LT	A	A	B	5.0	7.2	12.0	25	50	50	150
EB THRU-RT	A	A	B	6.4	8.7	13.3	125	175	275	
WB LT	A	A	A	2.4	7.5	9.9	m25	m50	m25	200
WB THRU-RT	A	A	B	4.3	8.7	17.4	50	300	m325	
NB LT-THRU	B	B	C	19.7	19.1	20.6	25	25	75	100
NB RT	C	B	B	20.2	19.3	19.0	25	25	50	
SB LT-THRU-RT	C	C	D	24.6	32.2	35.4	75	75	125	
Cameron Ave/Country Club Rd & Raleigh	C	C	C	23.7	21.0	30.7				
EB LT-THRU-RT	C	C	D	22.0	25.4	35.2	100	125	225	150
WB LT	B	B	B	12.5	13.7	15.2	25	25	50	
WB THRU-RT	C	C	C	25.4	23.1	26.1	250	175	275	125
NB LT	B	B	B	15.1	12.5	17.7	25	25	75	
NB THRU-RT	C	C	D	32.4	30.1	43.5	75	100	175	75
SB LT	C	B	C	22.6	15.1	26.9	#250	150	#250	
SB THRU-RT	C	B	C	22.4	19.1	32.7	175	125	250	

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95 th % Queue Length (Ft)			Future Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
Franklin St & NC 86 (Columbia St)	C	D	E	30.5	41.0	58.7				
EB LT	E	E	F	75.6	76.2	145.4	125	150	#375	250
EB THRU-RT	C	C	D	23.7	31.0	35.8	150	225	300	
WB LT	E	F	F	79.7	82.3	93.2	125	150	175	125
WB THRU	C	D	F	21.0	38.4	88.5	175	#475	#775	
WB RT	A	B	C	8.5	13.5	21.6	25	75	m75	DROP
NB LT	E	F	F	79.8	100.5	98.8	m50	125	m75	
NB THRU-RT	C	C	C	20.5	29.6	31.4	150	75	m#425	475
SB LT	F	F	F	92.4	93.4	131.7	75	100	m#175	
SB THRU-RT	C	C	D	29.7	34.7	35.5	100	100	#250	125
E. Franklin St & Henderson St	A	B	B	7.8	12.6	13.5				
EB LT-THRU	A	A	A	6.8	6.5	9.7	175	150	m200	N/A
WB THRU-RT	A	A	A	4.5	8.3	5.9	25	175	175	
SB LT-RT	C	D	D	28.0	35.7	44.2	75	150	150	
E. Franklin St & Hillsborough/Raleigh St	C	C	C	22.6	23.6	21.6				
EB LT	B	B	A	14.7	13.8	6.4	25	75	m25	75
EB THRU-RT	B	B	A	13.9	11.7	5.3	100	175	150	
WB LT	C	B	B	22.5	15.4	13.4	75	50	75	75
WB THRU-RT	C	B	B	21.7	14.8	13.4	250	200	350	
NB LT-THRU-RT	D	D	E	35.5	51.3	76.9	250	300	350	100
SB LT	B	C	D	16.1	31.1	43.6	75	100	100	
SB THRU-RT	C	D	D	24.7	38.9	44.5	225	200	225	
NC 86 & N. Columbia St / North St	N/A	N/A	N/A	N/A	N/A	N/A				
NB LT	B	A	B	10.1	9.2	10.1	25	25	25	150
SB LT	A	A	B	8.5	8.8	10.8	0	0	25	
EB LT-THRU-RT	C	B	C	15.7	13.8	24.4	25	25	50	350
WB LT-THRU-RT	B	C	F	13.7	15.3	119.6	25	25	150	
NC 86 (MLK Jr. Blvd) & Longview St	A	A	A	9.5	5.6	8.1				
EB LT-THRU-RT	B	B	B	17.7	12.5	18.7	50	50	75	225
WB LT-THRU-RT	B	B	B	12.1	10.7	15.7	25	25	50	
NB LT	A	A	A	6.5	5.6	6.0	25	25	25	100
NB THRU-RT	A	A	A	7.3	5.0	7.5	75	75	150	
SB LT	N/A	A	A	N/A	5.0	6.1	N/A	25	25	250
SB THRU-RT	A	A	A	9.1	5.1	6.6	125	75	125	
W. Cameron Ave & NC 86 (Pittsboro St)	B	B	C	17.1	19.9	21.0				
EB THRU-RT	C	C	D	27.6	21.2	48.3	175	175	450	75
WB LT	B	C	B	14.4	27.1	14.5	200	250	m125	
WB THRU	A	A	A	5.9	3.6	1.4	m100	m75	m25	
Cameron Ave & NC 86 (S. Columbia St)	C	C	D	27.9	32.6	45.5				
EB LT	C	D	C	34.9	36.4	23.2	m25	m50	m25	100
EB THRU	D	C	C	41.2	33.5	20.4	m125	100	m125	
WB THRU-RT	E	E	F	62.3	70.0	91.7	150	175	#375	300
NB LT	C	C	D	27.9	23.0	37.3	125	175	275	
NB LT-THRU-RT	C	C	D	31.4	23.1	53.6	225	200	#500	100
SB LT	A	B	C	7.2	18.6	20.4	m25	m50	m125	
SB RT	B	D	C	17.1	35.1	29.4	325	275	300	

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 – Town Committed Project Improvement **PURPLE** – Maximum Queue May Exceed Storage Bay Distance
 m – Volume for 95th percentile queue is metered by upstream signal
 # – 95th percentile volume exceeds capacity, queue may be longer (queue shown is maximum after 2 cycles)



Table 9. Capacity Analysis Results for Study Area Intersections Condition 3 – 2022 Traffic With Site (Rosemary-Only Access Concept)

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95 th % Queue Length (Ft)			Future Storage (Ft)
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM	
W. Rosemary Street & Church Street	A	A	B	9.2	9.5	13.9				
EB LT-THRU-RT	A	A	A	5.8	6.1	9.9	125	125	225	N/A
WB LT-THRU-RT	A	A	A	3.3	2.6	5.8	50	m50	m100	
NB LT-THRU-RT	C	C	D	24.5	31.9	36.9	75	75	m100	
SB LT-THRU-RT	C	C	C	26.8	26.2	26.6	75	50	100	
W. Rosemary Street & NC 86	C	C	D	26.6	31.8	46.5				
EB LT	D	C	F	38.6	30.7	124.3	150	125	#400	100
EB THRU-RT	C	C	D	33.5	27.3	44.1	225	250	425	100
WB LT	D	D	E	35.3	42.9	62.2	50	100	150	
WB THRU-RT	E	E	F	58.1	63.4	150.1	200	#475	#575	
NB LT	B	B	A	12.2	16.5	5.6	m25	m50	m25	75
NB THRU-RT	B	C	B	15.4	21.2	11.2	125	125	m75	150
SB LT	B	C	B	16.5	23.3	18.5	100	100	75	
SB THRU	C	C	C	24.0	30.3	26.0	275	175	250	
SB RT	B	B	B	10.9	17.4	17.1	125	125	200	
E. Rosemary St & Proposed Parking Dk W	N/A	N/A	N/A	N/A	N/A	N/A				
EB LT	A	A	A	8.2	8.1	8.1	25	25	25	100
SB LT-RT	B	B	B	11.1	12.2	12.8	25	25	50	50
E. Rosemary St & Proposed Parking Dk E	N/A	N/A	N/A	N/A	N/A	N/A				
EB LT	A	A	A	8.2	8.0	8.0	25	25	0	150
SB LT-RT	B	B	B	11.5	12.6	13.2	25	25	25	50
E. Rosemary St & Henderson St	A	B	B	9.1	11.9	11.1				
EB LT	A	A	A	6.0	5.3	5.9	m25	m25	m25	75
EB THRU-RT	A	A	A	5.3	5.3	7.0	100	100	225	75
WB LT-THRU-RT	A	A	A	5.5	5.9	5.1	100	125	125	
NB LT-THRU-RT	C	D	C	27.5	35.1	28.7	75	75	50	
SB LT-THRU-RT	C	C	C	23.5	22.5	27.1	50	50	75	
E. Rosemary St & Hillsborough St	B	B	B	14.9	15.4	17.7				
EB LT-THRU-RT	C	C	C	28.4	32.0	32.6	100	125	150	100
WB LT-THRU-RT	C	C	C	29.0	21.9	28.1	100	50	125	
NB LT	A	A	A	3.1	6.3	6.3	25	75	75	
NB THRU-RT	A	A	A	2.3	5.7	6.9	25	100	150	
SB LT	B	B	B	10.9	12.8	15.3	25	25	50	100
SB THRU-RT	B	B	B	13.4	14.4	16.1	225	150	150	
W. Franklin St & Church St	A	B	B	7.7	12.6	18.4				
EB LT	A	A	B	5.0	7.5	12.2	25	50	50	150
EB THRU-RT	A	A	B	6.5	9.0	13.4	125	200	275	200
WB LT	A	A	A	2.2	8.0	9.9	m25	m50	m25	
WB THRU-RT	A	A	B	4.1	9.9	17.4	50	325	m325	
NB LT-THRU	B	B	C	19.7	18.7	20.5	25	25	75	
NB RT	C	B	B	20.2	18.9	18.9	25	25	50	100
SB LT-THRU-RT	C	C	D	24.6	32.6	35.7	75	75	125	
Cameron Ave/Country Club Rd & Raleigh	C	C	C	23.3	20.8	30.4				
EB LT-THRU-RT	C	C	D	22.2	25.4	35.1	100	125	225	150
WB LT	B	B	B	12.5	13.7	15.1	25	25	50	
WB THRU-RT	C	C	C	25.1	22.6	25.8	250	175	250	
NB LT	B	B	B	14.8	12.5	17.6	25	25	75	
NB THRU-RT	C	C	D	32.1	30.0	43.4	75	100	175	
SB LT	C	B	C	22.0	14.7	25.6	#225	150	#225	
SB THRU-RT	C	B	C	22.1	19.0	32.9	175	125	250	

Intersections / Movements	LOS			Average Vehicular Delay (sec/veh)			95 th % Queue Length (Ft)			Future Storage (Ft)	
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM		
Franklin St & NC 86 (Columbia St)	C	D	E	30.8	40.8	57.8					
EB LT	E	E	F	77.1	76.0	149.6	125	150	#375	250	
EB THRU-RT	C	C	D	23.6	32.2	36.0	150	225	300	125	
WB LT	E	F	F	79.4	84.1	94.4	125	150	175		
WB THRU	C	D	F	21.2	38.9	89.0	#175	#500	#775		
WB RT	A	B	C	8.9	13.5	21.3	25	75	75		
NB LT	F	F	F	80.7	100.1	101.1	m50	125	m75	475	
NB THRU-RT	C	C	C	21.3	28.8	26.2	175	75	m200	125	
SB LT	F	F	F	92.9	90.6	127.9	75	100	m#175		
SB THRU-RT	C	C	D	29.7	34.0	37.3	75	100	#375		
E. Franklin St & Henderson St	A	B	B	8.0	12.1	12.0					
EB LT-THRU	A	A	A	6.7	6.5	8.9	175	175	m200	N/A	
WB THRU-RT	A	A	A	4.7	7.5	5.2	25	150	150		
SB LT-RT	C	D	D	28.5	36.1	41.6	75	125	125		
E. Franklin St & Hillsborough/Raleigh St	C	C	C	22.6	24.1	21.3					
EB LT	B	B	A	14.4	13.2	6.0	25	75	m25	75	
EB THRU-RT	B	B	A	13.6	11.1	4.8	100	175	100	75	
WB LT	C	B	B	22.3	14.3	12.4	75	50	75		
WB THRU-RT	C	B	B	21.1	13.8	12.6	225	200	325		
NB LT-THRU-RT	D	D	F	36.0	54.7	80.5	225	300	350		
SB LT	B	C	D	16.7	33.7	40.7	75	100	75	100	
SB THRU-RT	C	D	D	25.7	42.4	44.1	250	225	225		
NC 86 & N. Columbia St / North St	N/A	N/A	N/A	N/A	N/A	N/A					
NB LT	B	A	B	10.3	9.3	10.1	25	25	25	150	
SB LT	A	A	B	8.5	8.9	11.2	0	0	25	350	
EB LT-THRU-RT	C	B	D	16.2	14.1	27.9	25	25	75	75	
WB LT-THRU-RT	B	C	F	13.9	15.7	159.1	25	25	175		
NC 86 (MLK Jr. Blvd) & Longview St	A	A	A	9.5	5.6	8.1					
EB LT-THRU-RT	B	B	B	18.4	12.7	19.8	50	50	100	225	
WB LT-THRU-RT	B	B	B	12.6	10.8	16.7	25	25	50		
NB LT	A	A	A	6.0	5.4	5.8	25	25	25		
NB THRU-RT	A	A	A	7.2	5.1	7.5	75	75	150		
SB LT	N/A	A	A	N/A	5.0	6.0	N/A	25	25		
SB THRU-RT	A	A	A	9.1	5.1	6.5	125	75	125		
W. Cameron Ave & NC 86 (Pittsboro St)	B	C	C	17.2	20.1	20.4					
EB THRU-RT	C	C	D	28.0	21.3	48.1	175	175	450		75
WB LT	B	C	B	14.4	27.3	13.5	200	250	m125		
WB THRU	A	A	A	5.9	3.8	1.5	m100	m75	m50		
Cameron Ave & NC 86 (S. Columbia St)	C	C	D	28.2	33.3	53.1					
EB LT	D	D	C	36.2	38.0	23.8	m25	m50	m25	100	
EB THRU	D	C	C	41.1	33.6	20.4	m125	100	m125	300	
WB THRU-RT	E	E	F	62.3	70.0	91.7	150	175	#375		
NB LT	C	C	D	28.0	23.2	41.6	125	175	275		
NB LT-THRU-RT	C	C	E	32.1	23.6	74.3	250	225	#550		
SB LT	A	B	B	7.2	19.0	18.4	m25	m50	m125		
SB RT	B	D	C	17.1	36.7	27.5	300	300	325		

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
GREEN – Applicant Proposed Improvement **PURPLE** – Maximum Queue May Exceed Storage Bay Distance
 m – Volume for 95th percentile queue is metered by upstream signal
 # – 95th percentile volume exceeds capacity, queue may be longer (queue shown is maximum after 2 cycles)



inbound connection are negligible, with unsignalized movements operating adequately or not significantly different than the Condition 3 – With Site and Original Proposed Access scenario.

This scenario was also analyzed in Synchro’s SimTraffic companion microsimulation software package for the worst-case 2022 PM peak hour conditions. **Appendix F** provides the detailed SimTraffic Queueing and Blocking report. At the critical Rosemary Street/NC 86 intersection westbound approach, 2022 PM peak maximum queues are not expected to spillback beyond the proposed single primary deck access point along E. Rosemary Street.

B. Access Analysis

Vehicular site access is to be accommodated in the current site access plan at two proposed parking deck access driveways connecting to E. Rosemary Street. As conceptually shown in **Figure 2**, the western driveway access point is approximately 275 feet from the NC 86 (N. Columbia Street) intersection and the eastern driveway access point has approximately 200 feet of separation from the western access point. No specific throat lengths are shown on the concept plan and will need to be part of the detailed design of the parking deck to provide a 50 foot minimum throat length standard found on Page 69 of the 2017 *Town of Chapel Hill Public Works Design Manual*. Current schematic drawings indicate that additional throat length may be needed depending on the desired internal circulation pattern and location of entry/exit gates.

Driveway distances along E. Rosemary Street from the signalized intersections at NC 86 and Henderson Street are approximately 275 feet from the western driveway and 500 feet from the eastern driveway respectively. These separations 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 100 foot minimum along collector streets specified in the Town Design Manual. Driveway separations between the proposed driveways is acceptable and in the final design, locations of the driveways to adjacent existing driveway locations should be spaced to achieve 50 feet of separation, if possible, according to the Town Design Manual.

Access for pedestrians and bicycles has excellent existing connectivity in the project study area. Sidewalk is present along both sides of most downtown Chapel Hill streets, with signalized crosswalks at all quadrants at most intersections. The provision of a pedestrian bridge connection between the proposed deck and commercial development on the south side of E. Rosemary Street as is currently provided in the existing parking deck would eliminate conflicts with traffic for pedestrians seeking destinations in that block of downtown and beyond. Bicycle lanes are present W. Rosemary Street west of the site and bike “sharrows” are delineated on E. Rosemary Street adjacent to the site and along NC 86 to the north of the site.

C. Signal Warrant Analysis

Based on projected 2022 traffic volumes and proposed access plans, no unsignalized intersection would warrant the installation of a traffic signal, based on the methodology found in the 2009 *Manual on Uniform Traffic Control Devices (MUTCD)*.

The stop-controlled approaches at the intersection of NC 86 (Martin Luther King, Jr. Blvd) and North Street / N. Columbia Street are expected to operate at a LOS F in the 2022 analysis year with site traffic added in either site access scenario. 2022 peak hour volumes (using the Condition 4 – modified access scenario which would have more impacts at this intersection), and existing geometrics were analyzed for meeting the Peak Hour Warrant in the 2009 MUTCD and HCS 7 Warrants software package. The results shown in **Appendix G** indicate that the NC 86 (Martin Luther King, Jr. Blvd) and North Street / N. Columbia Street intersection would NOT warrant the installation of a traffic signal, primarily due to minor



street approach volumes during the three peak hours. The total minor street volumes would meet the Peak Hour Warrant, but both minor street approaches feature a disproportionate number of right-turning vehicles that have less effect on the need for a signal to provide adequate gaps in the major traffic stream. The right-turn volumes were reduced by 50% for this analysis. Satisfaction of additional warrants would be needed to justify the implementation of a traffic signal at this location.

D. Sight Distance Analysis

In general, geometric sight distance issues entering/exiting the proposed East Rosemary Parking Deck driveways would be minimal, considering the fact that E. Rosemary Street has no horizontal curvature in the vicinity of the proposed access locations and vertical curvature along E. Rosemary Street in this vicinity is minimal or is in/near a sag vertical curve. Combined with low posted speeds (20 mph on E. Rosemary Street), the roadway alignment and access locations give entering and exiting traffic adequate sight distance in both directions. In the modified access scenario, sight distance at the proposed exit-only driveway along NC 86 (N. Columbia Street) is acceptable, as the section of NC 86 (N. Columbia Street) in this vicinity has no horizontal curvature. Upstream of a potential driveway location, there is limiting vertical curvature at the Rosemary Street intersection, but traffic entering the intersection is traveling under lower speed (20 mph posted) conditions, which should allow for adequate recognition of gaps to make right-turns onto NC 86 northbound. For the potential ingress proposed on NC 86 (Martin Luther King, Jr. Blvd) at North Street) the southbound center left-turn lane that would be utilized for this access has adequate sight distance for opposing through northbound traffic on NC 86, as this traffic stream has no horizontal curvature and little vertical curvature that would obstruct turning movements.

E. Crash Analysis

Data from the NCDOT Traffic Safety Unit TEAAS crash software database was extracted for the five year period from 3/1/2015 to 2/29/2020 for the segment of E. Rosemary Street from NC 86 to Henderson Street and for the segment of NC 86 from Franklin Street to Stephens Street. Individual intersection crash analyses were also compiled for NC 86 and Rosemary Street, NC 86 and N. Columbia Street/North Street and E. Rosemary Street and Henderson Street. Raw crash data can be found in **Appendix H**.

E. Rosemary Street Corridor

There were 34 crashes reported along the E. Rosemary Street study area corridor between NC 86 and the Henderson Street over the five year period. In this 0.18 mile segment, crash types were primarily rear end crashes and left-turn/angle crashes. Spatial distribution of crashes from the segment strip map indicates that crashes were distributed with the highest number of intersection crashes (21) occurring in the vicinity of the E. Rosemary Street intersection with NC 86. Several crashes occurred in the vicinity of the existing parking lot/deck entrance/exits. Six crashes occurred near the Henderson Street intersection.

Table 11 presents a comparison between the E. Rosemary Street 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 rates along E. Rosemary Street in the project study area are far higher than statewide averages for similar urban secondary roadway facilities (two-lane undivided with continuous center turn lane) in every reported category, except for fatal crashes. The data is somewhat skewed by the short distance of the segments and the high crash numbers focused at the NC 86 intersection.

NC 86 Corridor

There were 60 crashes reported along the NC 86 study area corridor between Franklin Street and Stephens Street over the five year period. In this 0.33 mile segment, primary crash types were rear-end crashes, angle/left-turn crashes and sideswipes. There was one crash involving a pedestrian and one crash involving a bicyclist along this segment of NC 86. Spatial distribution of crashes along the corridor



from the segment strip map indicates that a majority of crashes were centered at, or between, the Franklin Street and Rosemary Street intersections (44 of 60 total crashes). The North Street intersection experienced seven crashes.

Table 11. Study Area Crash Rate Comparison – E. Rosemary Street Corridor

Statistic	Crashes Per 100 Million Vehicle Miles	
	E. Rosemary Street	NC Statewide Average*
	NC 86 to Henderson Street	2-Lane with Continuous Left-Turn Lane
Total Crash Rate	1,393.99	318.88
Fatal Crash Rate	0.00	1.08
Non-Fatal (Injury) Crash Rate	205.00	94.22
Night Crash Rate	369.00	76.64
Wet Pavement Crash Rate	164.00	49.98

* - Data for Urban Secondary Routes

Table 12 presents a comparison between the NC 86 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 rates along NC 86 in the project study area are lower than statewide averages for similar urban secondary roadway facilities (two-lane undivided) in every reported category, except for wet pavement crashes – although the sample number of crashes and relatively low daily traffic volume on NC 86 contribute heavily to the high crash rate for this category.

Table 12. Study Area Crash Rate Comparison – NC 86 Corridor

Statistic	Crashes Per 100 Million Vehicle Miles	
	NC 86	NC Statewide Average*
	Franklin Street to Stephens Street	5-Lane Undivided with TWLTL
Total Crash Rate	578.39	299.06
Fatal Crash Rate	0.00	1.39
Non-Fatal (Injury) Crash Rate	106.04	83.67
Night Crash Rate	154.24	58.08
Wet Pavement Crash Rate	96.40	44.6

* - Data for Urban NC Routes

Study Area Intersections

In addition to the crash comparison for the NC 86 and E. Rosemary Street project study corridors, individual intersection crash data in the vicinity of the proposed parking deck site for the same five year period was provided by NCDOT and results are shown in **Table 13**. The crash data also reveals that the Rosemary Street & NC 86 (N. Columbia Street) intersection suffers from a high number and rate of crashes. 16 of the 42 crashes occurred with the initial/primary vehicle heading southbound on NC 86 at this location. The intersection of NC 86 and North Street/N. Columbia Street has a low rate of crashes but 4 of the 11 reported crashes at this location were injury crashes.



Table 13. Study Area Intersection Crash Summary

Intersection	Total Crashes	Crashes Per 100 Million Vehicles Entered
NC 86 (N. Columbia Street) & Rosemary Street	42	93.83
NC 86 (MLK Jr. Blvd) & North St / N. Columbia St	11	31.69
E. Rosemary Street & Henderson Street	11	70.83

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 14** are germane to the scope of this study.

Table 14. Other Transportation-Related Analyses

Analysis	Comment
Turn Lane Storage Requirements	<p>Storage bay lengths at study area intersections were analyzed using Synchro and HCM 95th percentile (max) queue length estimates for all analyzed scenarios. Additional Simtraffic microsimulation runs were completed for the 2022 With Site Scenario to validate the recommended modified access scenario. The original access concept's western access point on E. Rosemary would likely be blocked by westbound queues on E. Rosemary Street at the NC 86 intersection. The modified access scenario removes some site-related traffic from E. Rosemary Street, thus reducing queue lengths. Providing a single access point for the deck farther to the east of the NC 86 intersection provide adequate separation to manage left-turn queues and avoid deck access blockage.</p> <p>There are several intersections in the study area that are currently near capacity and are expected to continue to be in the 2022 analysis year where one or multiple left-turn storage bays do not provide adequate storage to accommodate existing or projected maximum peak hour queues. As roadway capacity improvements in these situations would generally be difficult give current right-of-way constraints in the downtown and UNC Main Campus area, and the fact that the proposed parking deck is expected to marginally contribute to queuing issues beyond the immediate intersections adjacent to the site, no additional recommendations were made for turn lane storage requirements for this study</p>
Appropriateness of Acceleration/ Deceleration Lanes	<p>The site concept plan does not show any provision for additional acceleration or deceleration lanes. With the proposed site located in the downtown Chapel Hill central business district, most area roadways have low posted speeds and do not require additional acceleration/deceleration lanes. E. Rosemary Street has a three-lane cross section with center left-turn lane that will provide separation for turning traffic into the proposed parking deck. The modified access scenario also utilizes the center left-turn lane along NC 86 for safe separation of turning traffic onto North Street from the southbound through travel lanes.</p>
Pedestrian and Bicycle Analysis	<p>Existing pedestrian access and connectivity is currently well implemented throughout the downtown Chapel Hill area that would be served by the proposed deck. Consideration should be made to continue to provide a pedestrian overpass connection to development south of E. Rosemary Street adjacent to the proposed deck, as is currently provided. A mid-block delineated pedestrian crossing with raised central median on E. Rosemary Street would also reduce likelihood of jay-walking from the deck to the south side of the street. Bicycle facilities (bike lanes and roadway "sharrows" and activity are prevalent in the downtown area as well and the proposed deck design could incorporate opportunities for bicycle parking convenient to E. Rosemary Street frontage.</p>



G. Special Analysis/Issues Related to Project

Based on discussions with Town of Chapel Hill staff, this study will be the first of two traffic impact studies related to the overall redevelopment of existing parking facilities along E. Rosemary Street. The second study will focus on the redevelopment of the existing Wallace Parking Deck into a 200,000 square foot office building. The impacts of the that development will be analyzed based on the assumption that the E. Rosemary Parking Deck is complete and open for use.

IV. MITIGATION MEASURES / RECOMMENDATIONS

A. Planned Improvements

There are no planned transportation improvement projects by NCDOT expected to be complete between 2020 and 2022 in the immediate project study area. The Town of Chapel Hill is in the process of designing and implementing the West Franklin Street Lane Reallocation project to reduce the number of through travel lanes on West Franklin Street west of NC 86. The reallocated lanes will be used for parking, loading zones, bicycle lanes and other amenities. This project was expected to be complete by the 2022 analysis year and was also assumed to include signal retiming throughout the downtown area to account for vehicular flow changes in the lane reallocation vicinity. Details are shown on **Figure 11**.

The Town also has the North-South Bus Rapid Transit Project, which will provide dedicated lanes for transit along the NC 86 corridor, along with other transit amenity improvements scheduled for construction in 2022. As final design details are not complete as of the submittal of this TIS, no specific lane usage changes were analyzed as part of 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 2020 and 2022.

C. Applicant Committed Improvements

Based on the preliminary site concept plans and supporting development information provided, there are no specific transportation-related improvements proposed external to the East Rosemary Parking Deck site. The current plan and preliminary deck design incorporates two full movement access points along E. Rosemary Street only, with single lane entry/exits.

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 11A**).

- 1) To reduce potential conflicts and provide better separation for left-turning vehicles along E. Rosemary Street approaching the NC 86 intersection westbound and the parking deck eastbound, eliminate the currently proposed western deck access location and provide a single primary deck access location where the current eastern deck access is proposed. At this primary access point, provide separate left-turn and right-turn exit lanes. Depending on method of parking deck space management (gates/ticketing), provide adequate internal queue storage for entry flows that may reach 200 vehicles in a single hour. This improvement is recommended for the East Rosemary Parking Deck development.



- 2) Due to potential peak hour queuing issues for the westbound left-turn and through travel lanes at the E. Rosemary Street intersection with NC 86 (N. Columbia Street), reoptimize the traffic signal timings to allow adequate green time to reduce westbound queuing for this movement in all peak hours. This improvement is recommended for the East Rosemary Parking Deck development.
- 3) To reduce site-related traffic volumes at the critical E. Rosemary Street intersection with NC 86, provide alternate access using North Street to a one-way inbound parking deck connection and a one-way outbound parking deck connection with N. Columbia Street. This should remove most parking deck related traffic flow to/from the NC 86 corridor without adding site-related traffic that may cut-through the North Street neighborhood (it is was allowed an exiting connection) and reduce queue blockage issues, sight distance issues, and vehicular conflicts if the N. Columbia Street access were allowed an inbound entry access lane. The proposed exit-only access at this location should also be restricted to right-turn out only. Further design investigation will be required to assess impacts to existing private surface parking lots and access points along N. Columbia Street and North Street. These improvements are recommended for the East Rosemary Parking Deck development.
- 4) Additional wayfinding signage on external roadways and internal to the proposed parking deck is recommended to fully utilize the proposed North Street and N. Columbia Street access points, as well as identify routes to E. Franklin Street, US 15-501, and NC 54 (make a left-turn exiting the deck) and NC 86 South, Carrboro, Pittsboro (make a right-turn exiting the deck). These improvements are recommended for the East Rosemary Parking Deck development.
- 5) To provide direct, safe, and convenient pedestrian access from the parking deck to commercial developments south of the E. Rosemary Street corridor, it is recommended that a pedestrian overpass be included in the deck design, similar to the existing pedestrian overpass that connects the existing Rosemary Parking Deck. In addition, at street level, a mid-block pedestrian crosswalk, with appropriate signage and potentially a raised median refuge island depending on its location should be included. These improvements are recommended for the East Rosemary Parking Deck development.

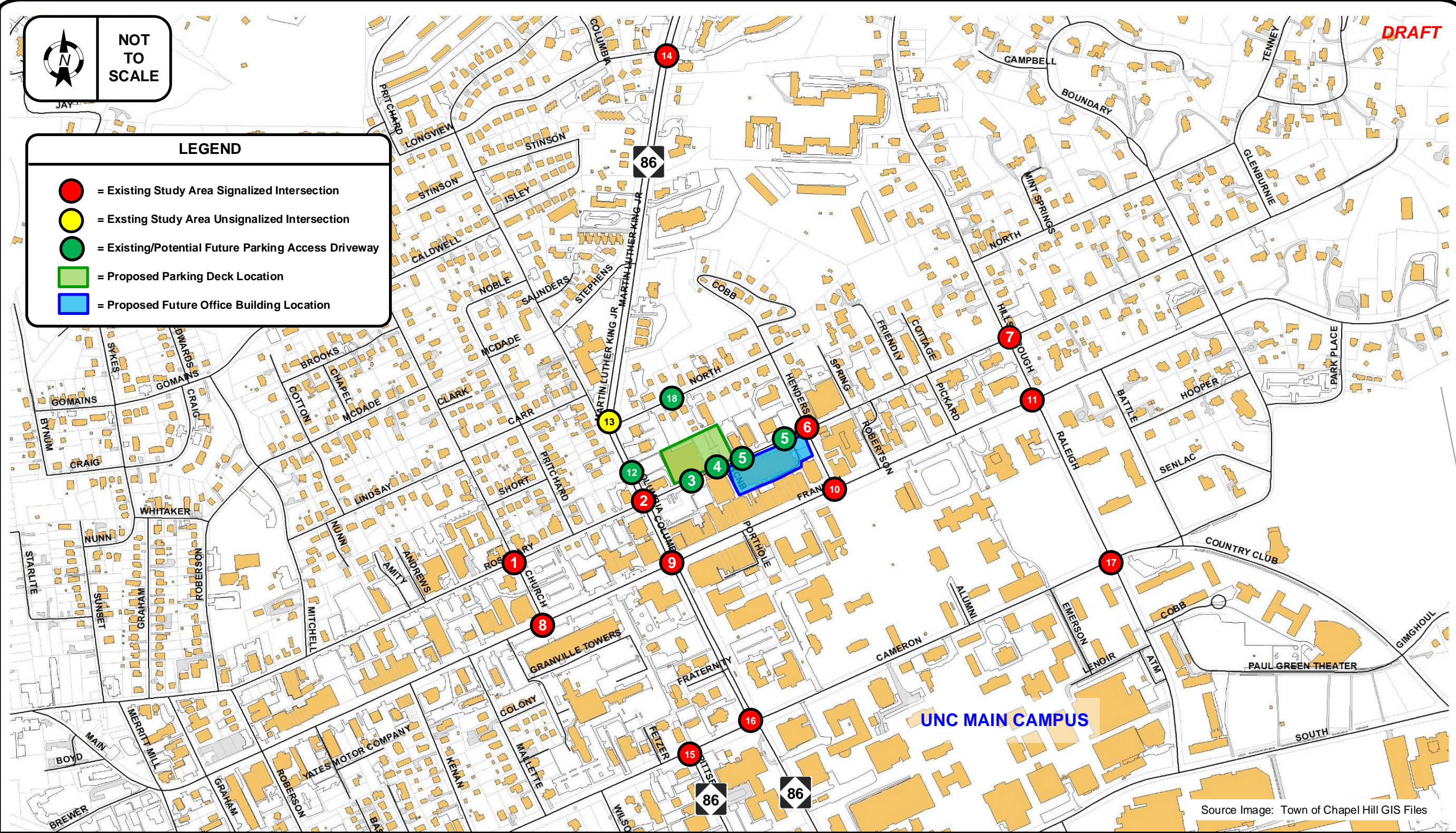


Appendix A – Figures



LEGEND

- = Existing Study Area Signalized Intersection
- = Existing Study Area Unsignalized Intersection
- = Existing/Potential Future Parking Access Driveway
- = Proposed Parking Deck Location
- = Proposed Future Office Building Location



Source Image: Town of Chapel Hill GIS Files

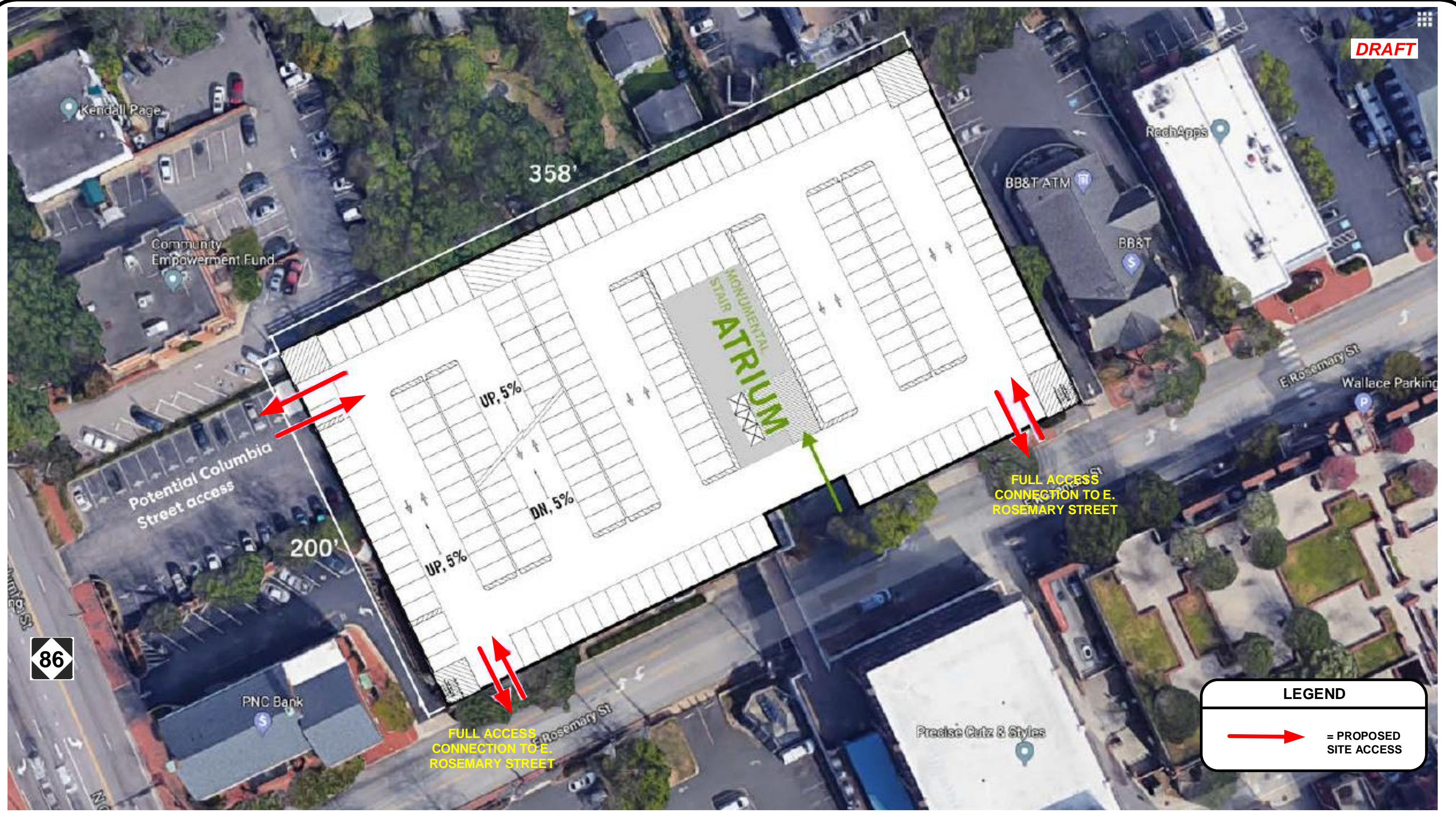


**East Rosemary Street Parking Deck
Traffic Impact Study
PROJECT STUDY AREA**

DATE: April 2020

FIGURE 1

DRAFT



86



NOT TO SCALE

East Rosemary Street Parking Deck
Traffic Impact Study

PRELIMINARY SITE CONCEPT PLAN

DATE: April 2020

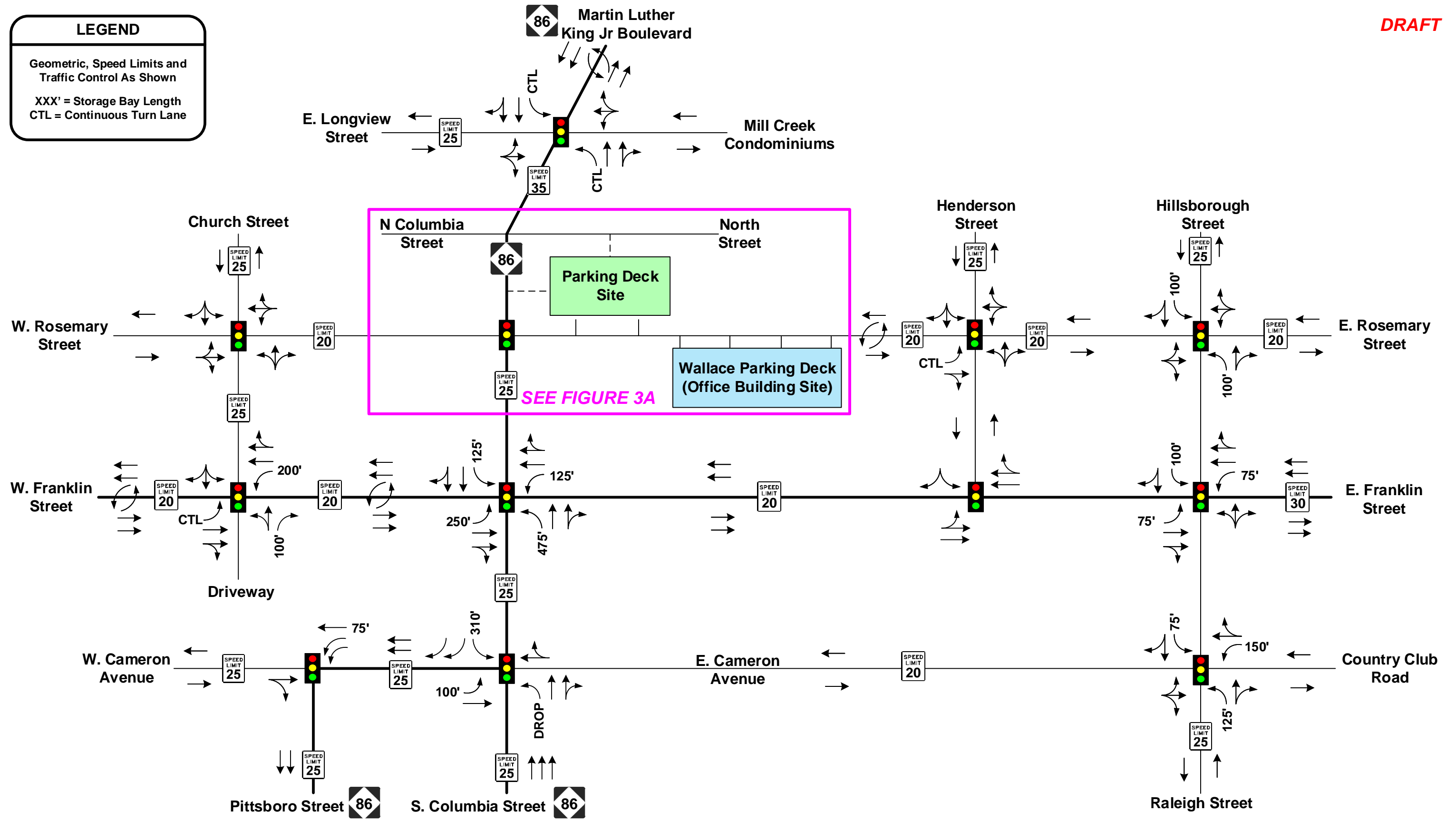
FIGURE 2

LEGEND

Geometric, Speed Limits and Traffic Control As Shown

XXX' = Storage Bay Length

CTL = Continuous Turn Lane



NOT TO SCALE

East Rosemary Street Parking Deck
Traffic Impact Study

EXISTING LANEAGE AND GEOMETRICS

DATE: April 2020

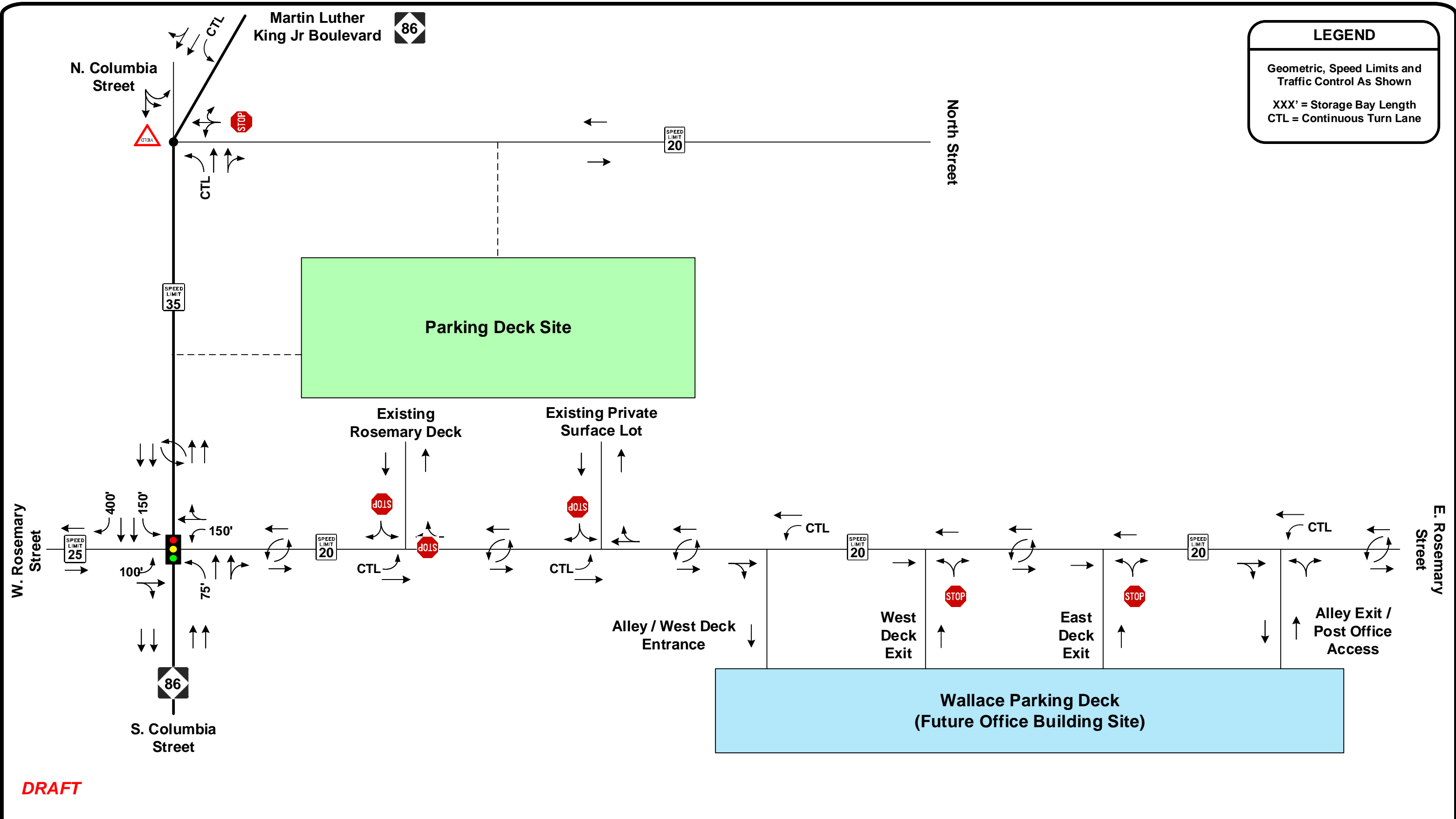
FIGURE 3

LEGEND

Geometric, Speed Limits and Traffic Control As Shown







XXX' = Storage Bay Length

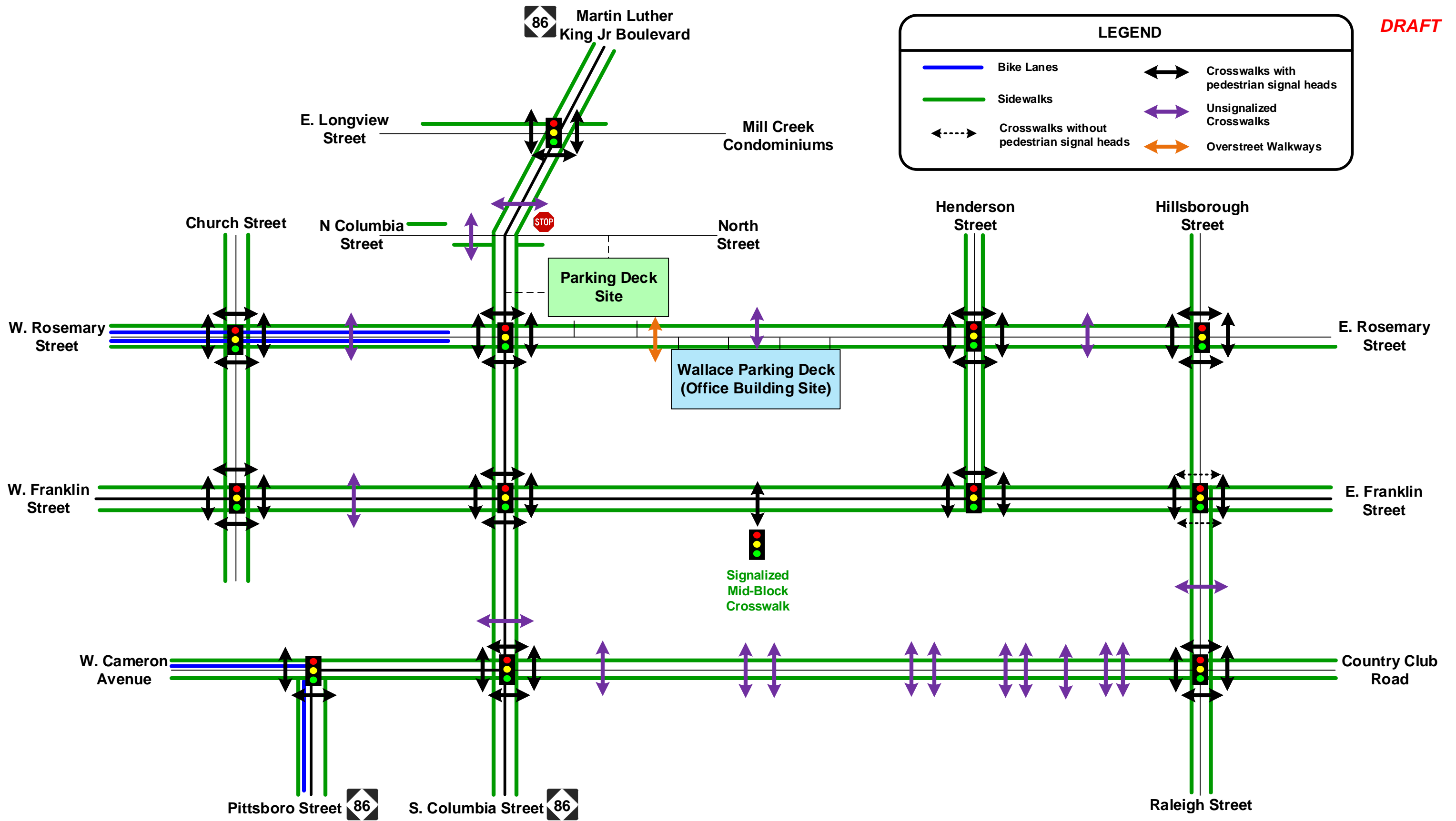
CTL = Continuous Turn Lane



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LEGEND

 Bike Lanes	 Crosswalks with pedestrian signal heads
 Sidewalks	 Unsignalized Crosswalks
 Crosswalks without pedestrian signal heads	 Overstreet Walkways



NOT TO SCALE

East Rosemary Street Parking Deck
Traffic Impact Study

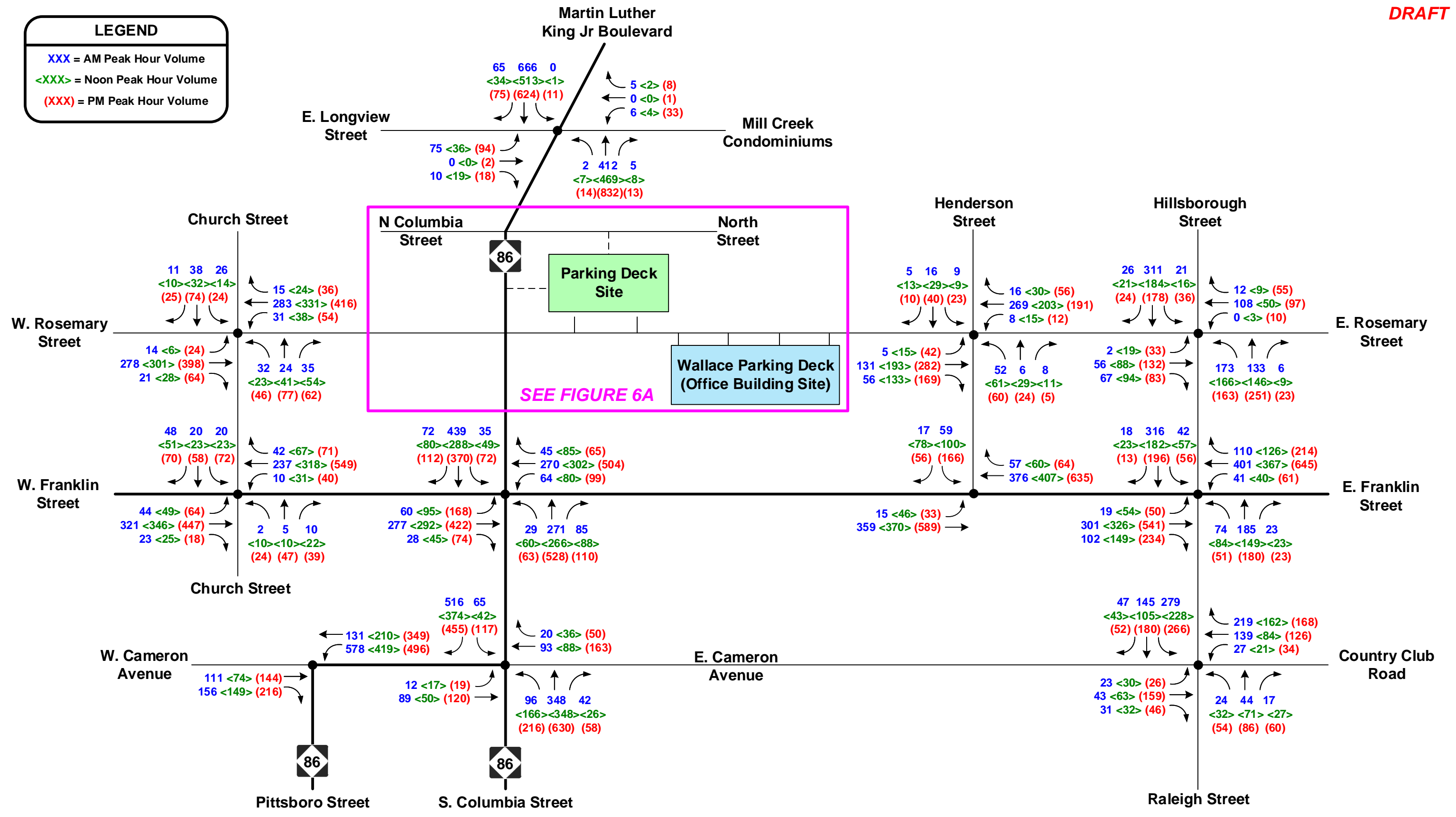
STUDY AREA PEDESTRIAN AND BICYCLE FACILITIES

DATE: April 2020

FIGURE 4

LEGEND

XXX = AM Peak Hour Volume
 <XXX> = Noon Peak Hour Volume
 (XXX) = PM Peak Hour Volume



NOT TO SCALE

**East Rosemary Street Parking Deck
Traffic Impact Study**

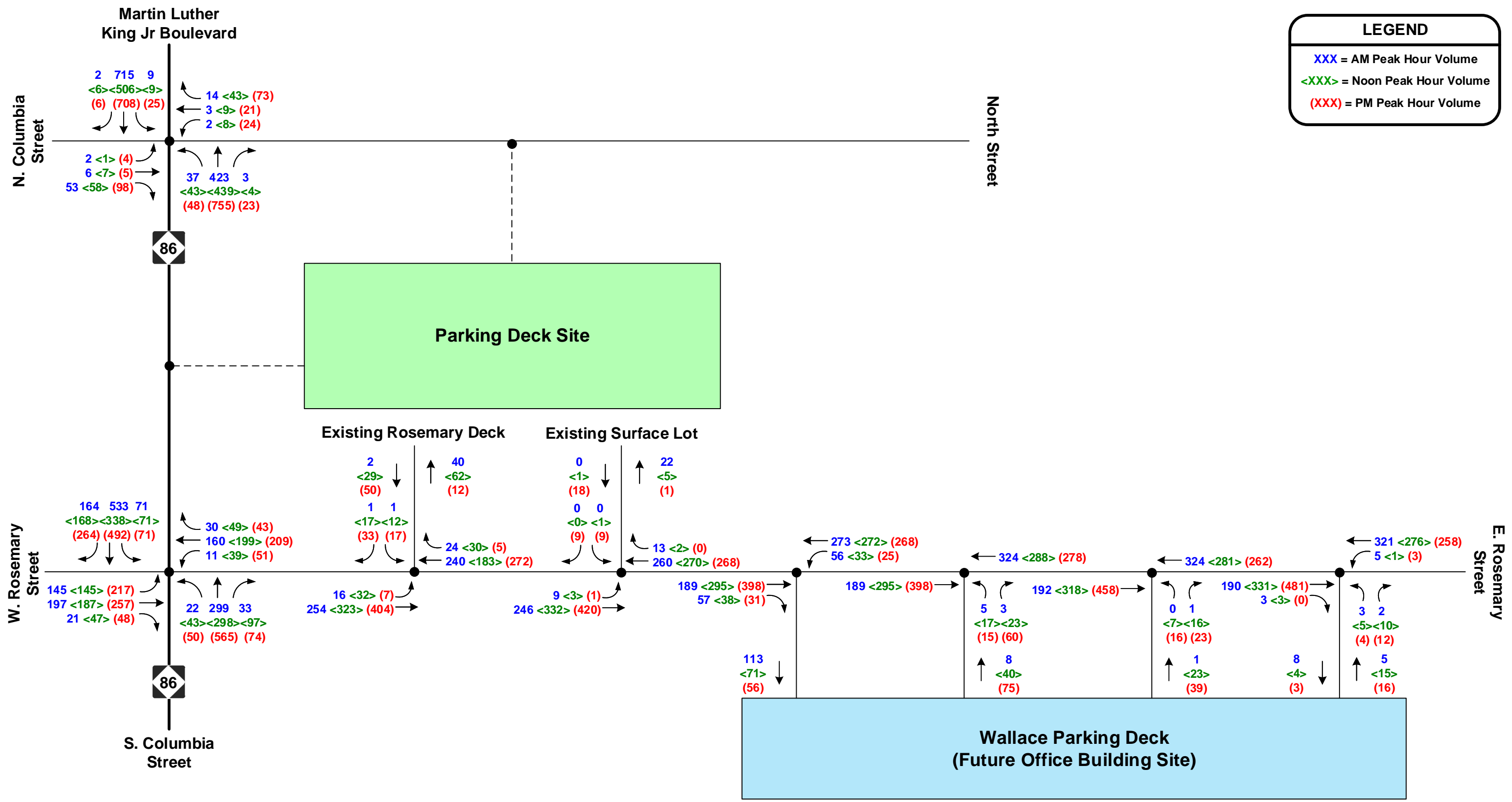
2020 EXISTING PEAK HOUR TRAFFIC VOLUMES

DATE: April 2020

FIGURE 5

LEGEND

- XXX = AM Peak Hour Volume
- <XXX> = Noon Peak Hour Volume
- (XXX) = PM Peak Hour Volume



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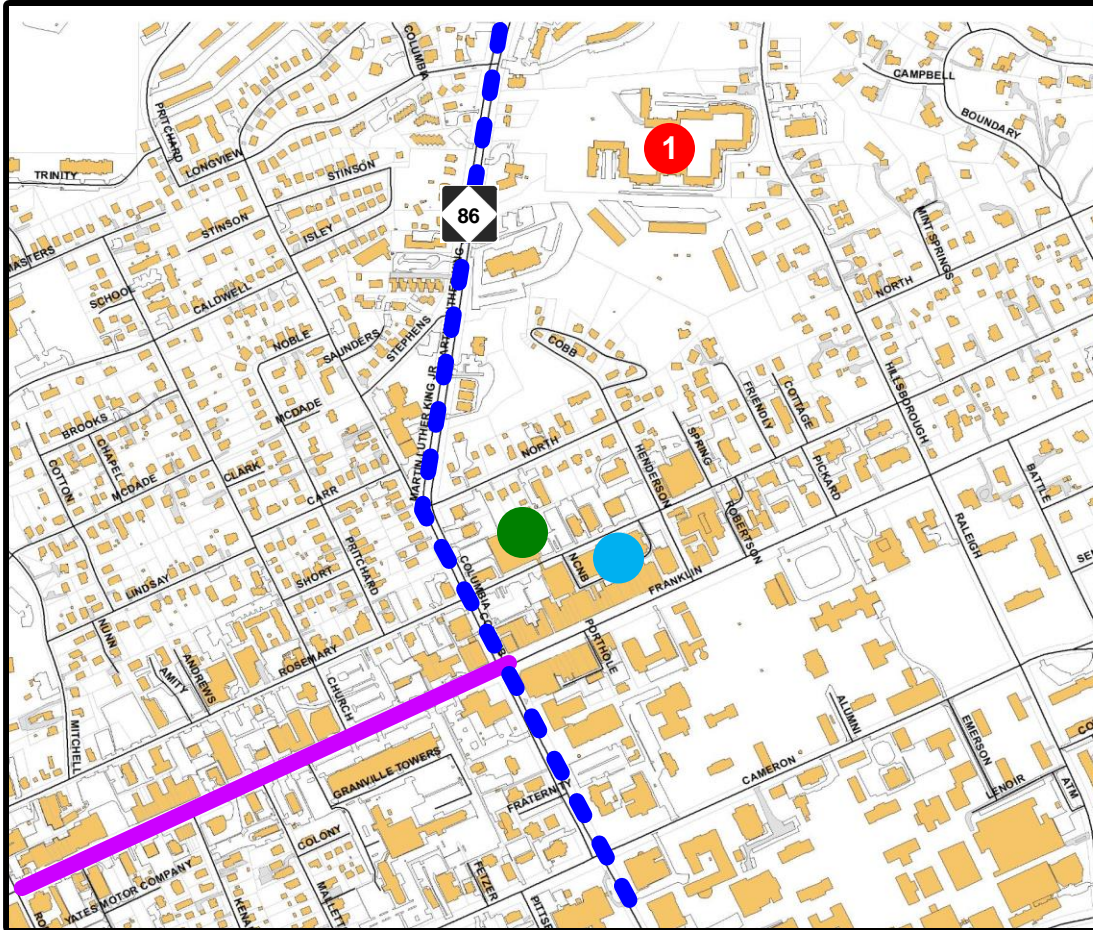
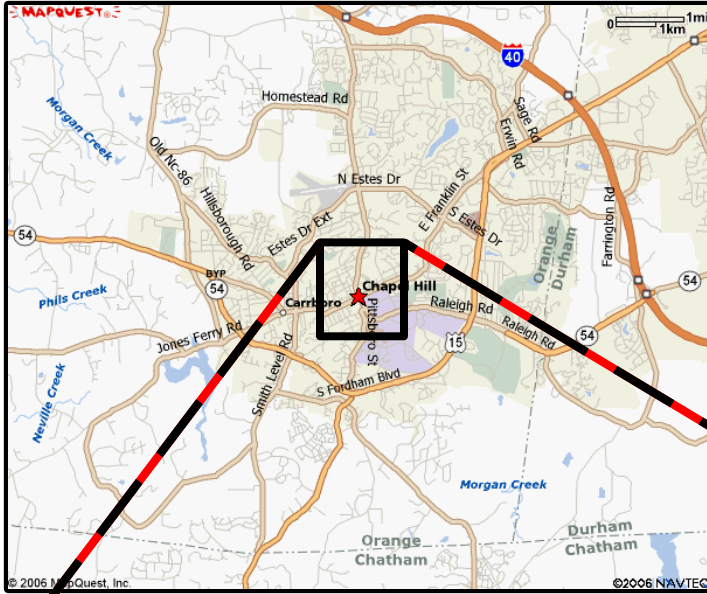
NOT TO SCALE

**East Rosemary Street Parking Deck
Traffic Impact Study**

2020 EXISTING PEAK HOUR TRAFFIC VOLUMES

DATE: April 2020

FIGURE 5A



Source Image: Town of Chapel Hill GIS Files



DRAFT

HNTB



**East Rosemary Street Parking Deck
Traffic Impact Study**

**BACKGROUND DEVELOPMENT AND
TRANSPORTATION IMPROVEMENT LOCATIONS**

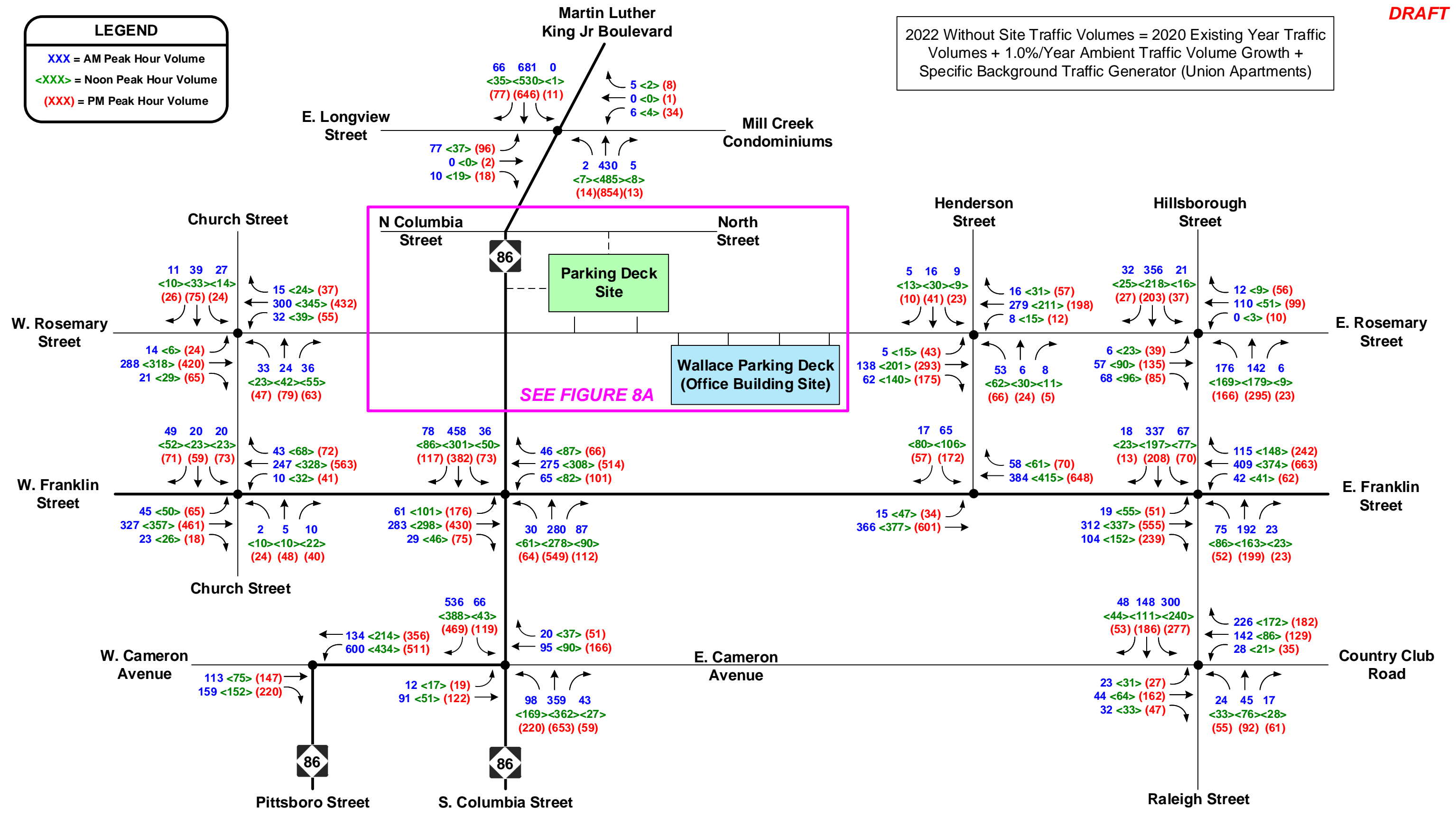
DATE: April 2020

FIGURE 6

LEGEND

XXX = AM Peak Hour Volume
 <XXX> = Noon Peak Hour Volume
 (XXX) = PM Peak Hour Volume

2022 Without Site Traffic Volumes = 2020 Existing Year Traffic Volumes + 1.0%/Year Ambient Traffic Volume Growth + Specific Background Traffic Generator (Union Apartments)



NOT TO SCALE

East Rosemary Street Parking Deck
 Traffic Impact Study

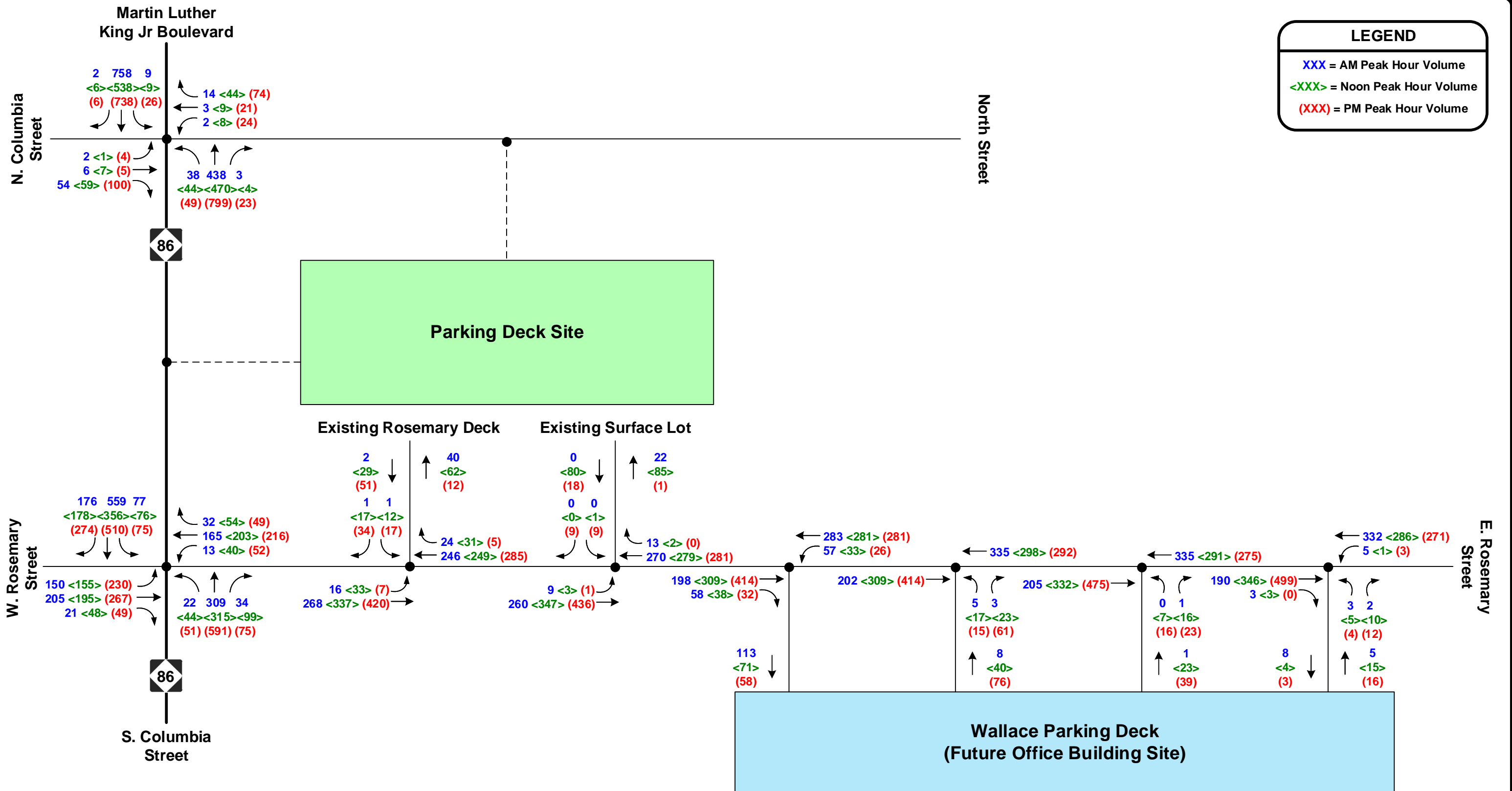
2022 PEAK HOUR TRAFFIC VOLUMES WITHOUT SITE

DATE: April 2020

FIGURE 7

LEGEND

XXX = AM Peak Hour Volume
 <XXX> = Noon Peak Hour Volume
 (XXX) = PM Peak Hour Volume



DRAFT



NOT TO SCALE

East Rosemary Street Parking Deck
 Traffic Impact Study

2022 PEAK HOUR TRAFFIC VOLUMES WITHOUT SITE

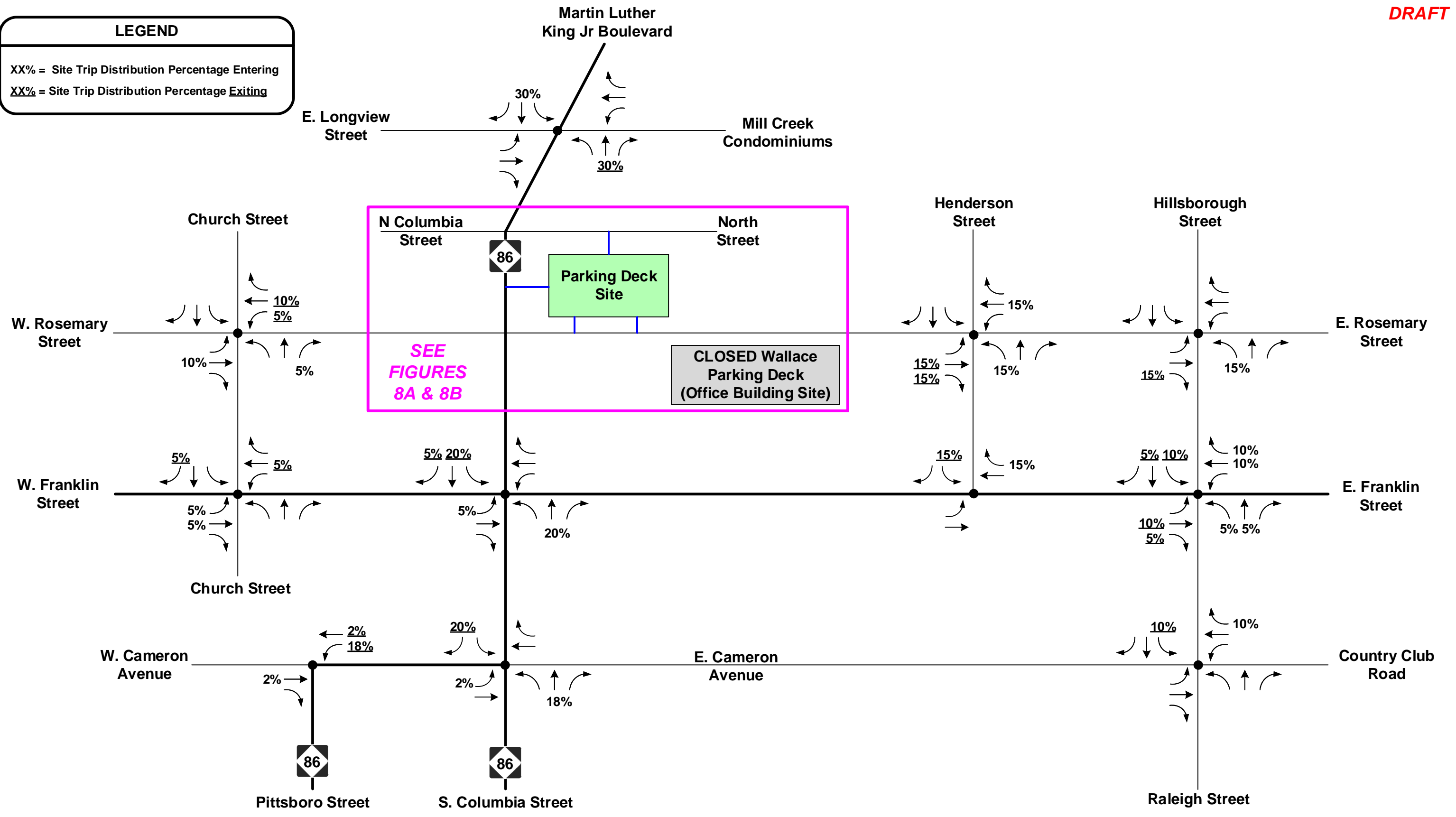
DATE: April 2020

FIGURE 7A

LEGEND

XX% = Site Trip Distribution Percentage Entering

XX% = Site Trip Distribution Percentage Exiting



SEE FIGURES 8A & 8B

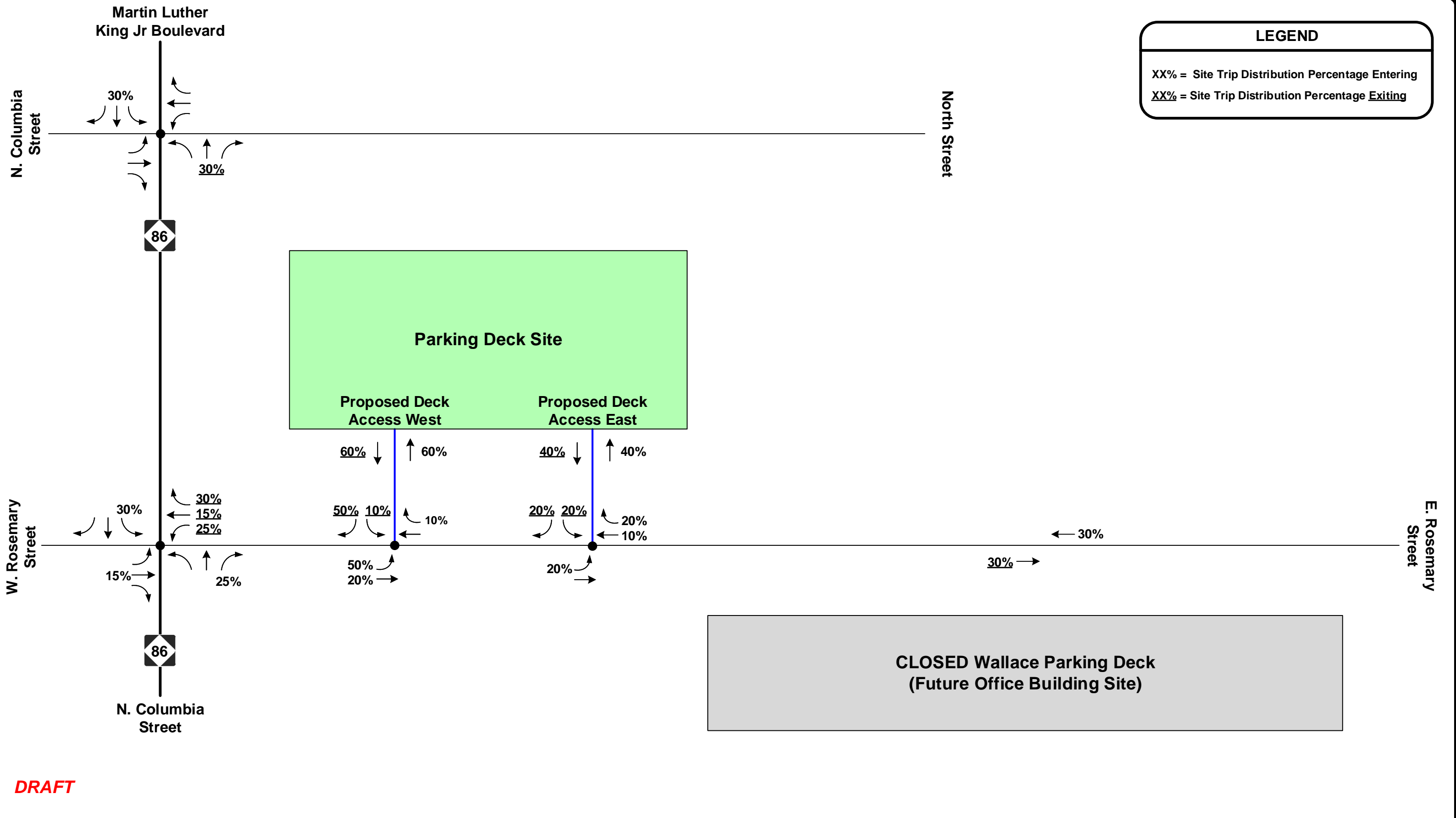
Parking Deck Site

CLOSED Wallace Parking Deck (Office Building Site)

LEGEND

XX% = Site Trip Distribution Percentage Entering

XX% = Site Trip Distribution Percentage Exiting



DRAFT



NOT TO SCALE

**East Rosemary Street Parking Deck
Traffic Impact Study**

DATE: April 2020

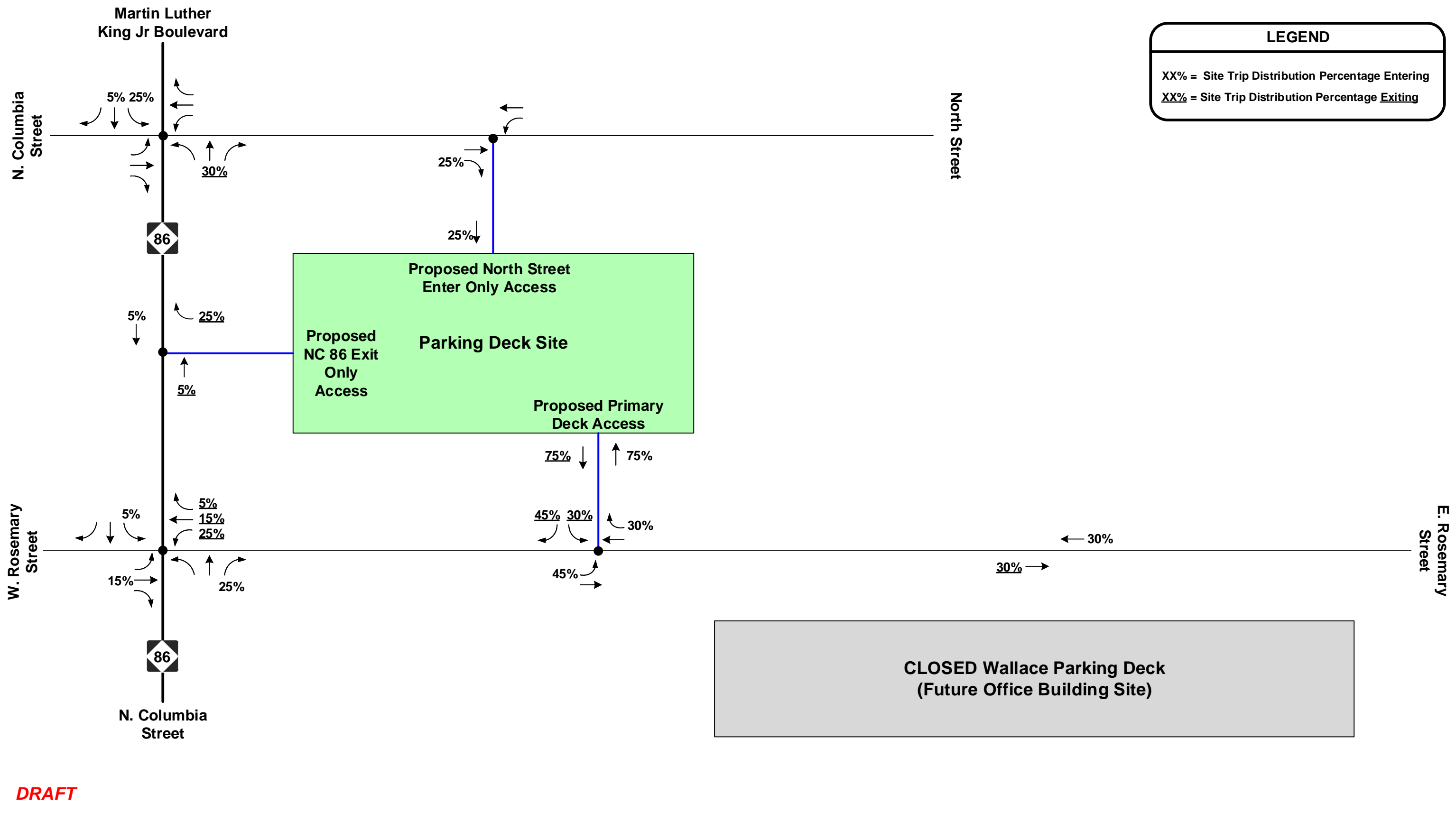
2022 SITE TRIP DISTRIBUTION PERCENTAGES – ROSEMARY STREET ACCESS ONLY

FIGURE 8A

LEGEND

XX% = Site Trip Distribution Percentage Entering

XX% = Site Trip Distribution Percentage Exiting



DRAFT



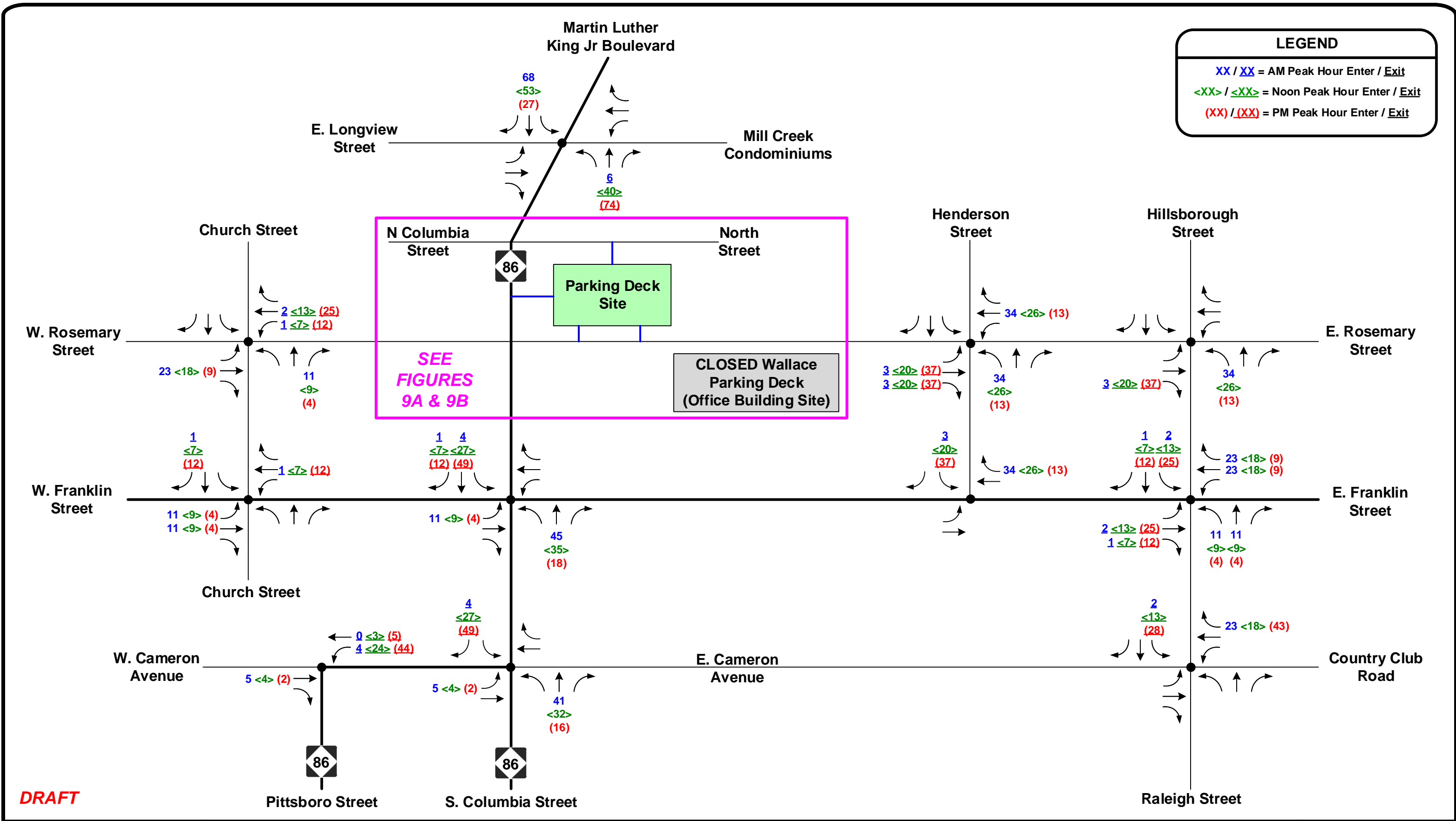
NOT TO SCALE

**East Rosemary Street Parking Deck
Traffic Impact Study**

2022 SITE TRIP DISTRIBUTION PERCENTAGES – MODIFIED ACCESS

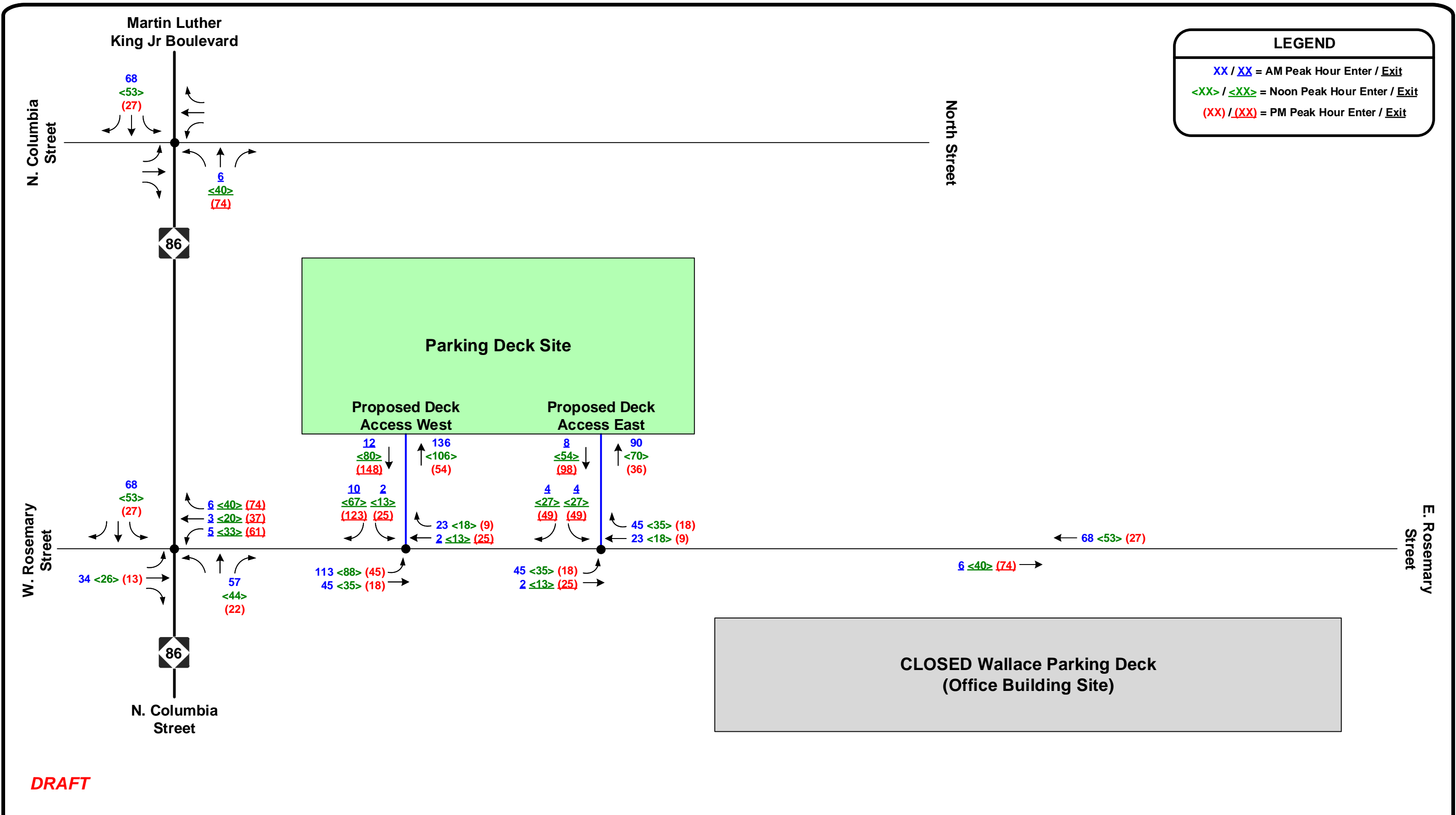
DATE: April 2020

FIGURE 8B



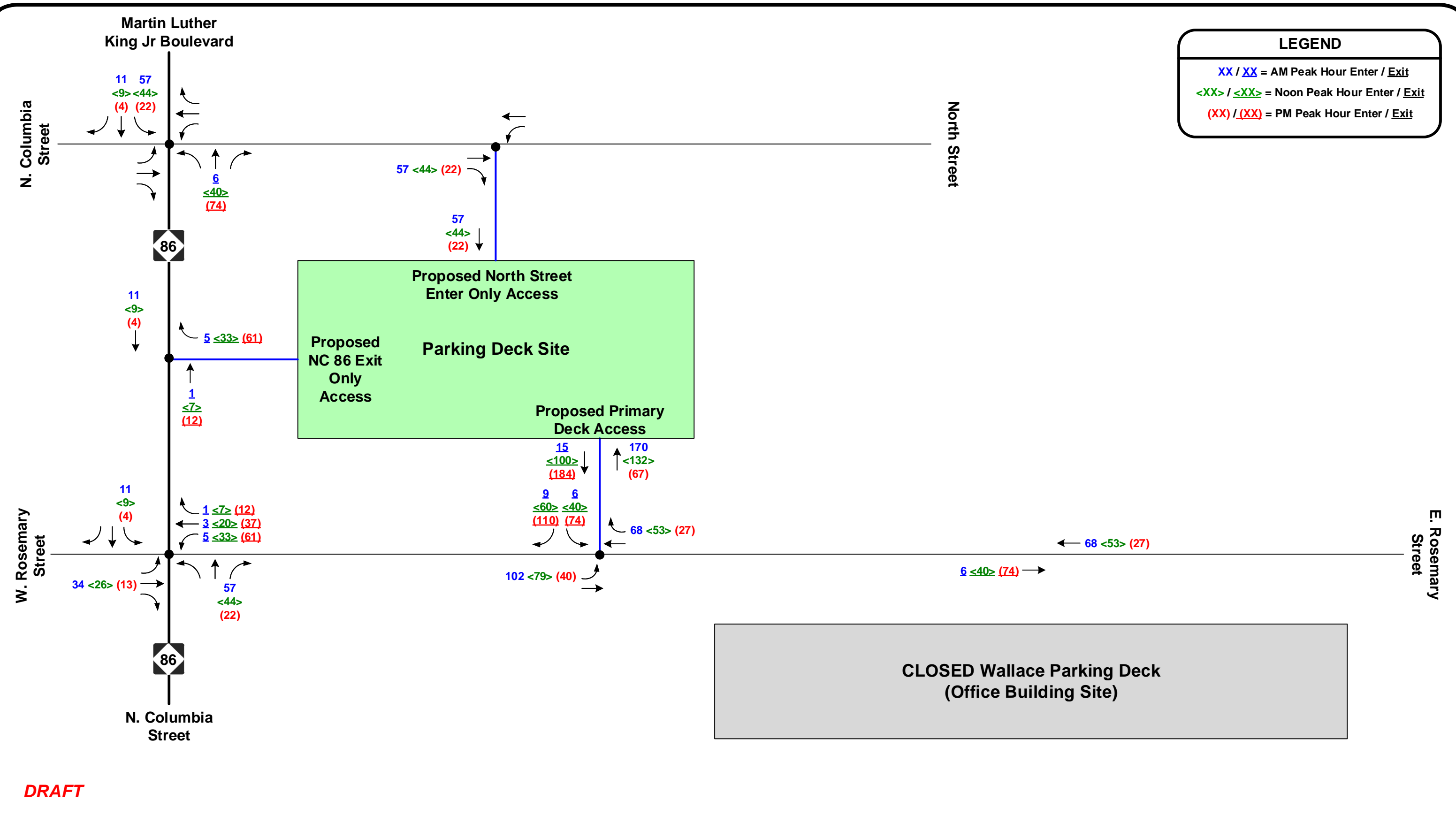
LEGEND

- XX / XX = AM Peak Hour Enter / Exit
- <XX> / <XX> = Noon Peak Hour Enter / Exit
- (XX) / (XX) = PM Peak Hour Enter / Exit



LEGEND

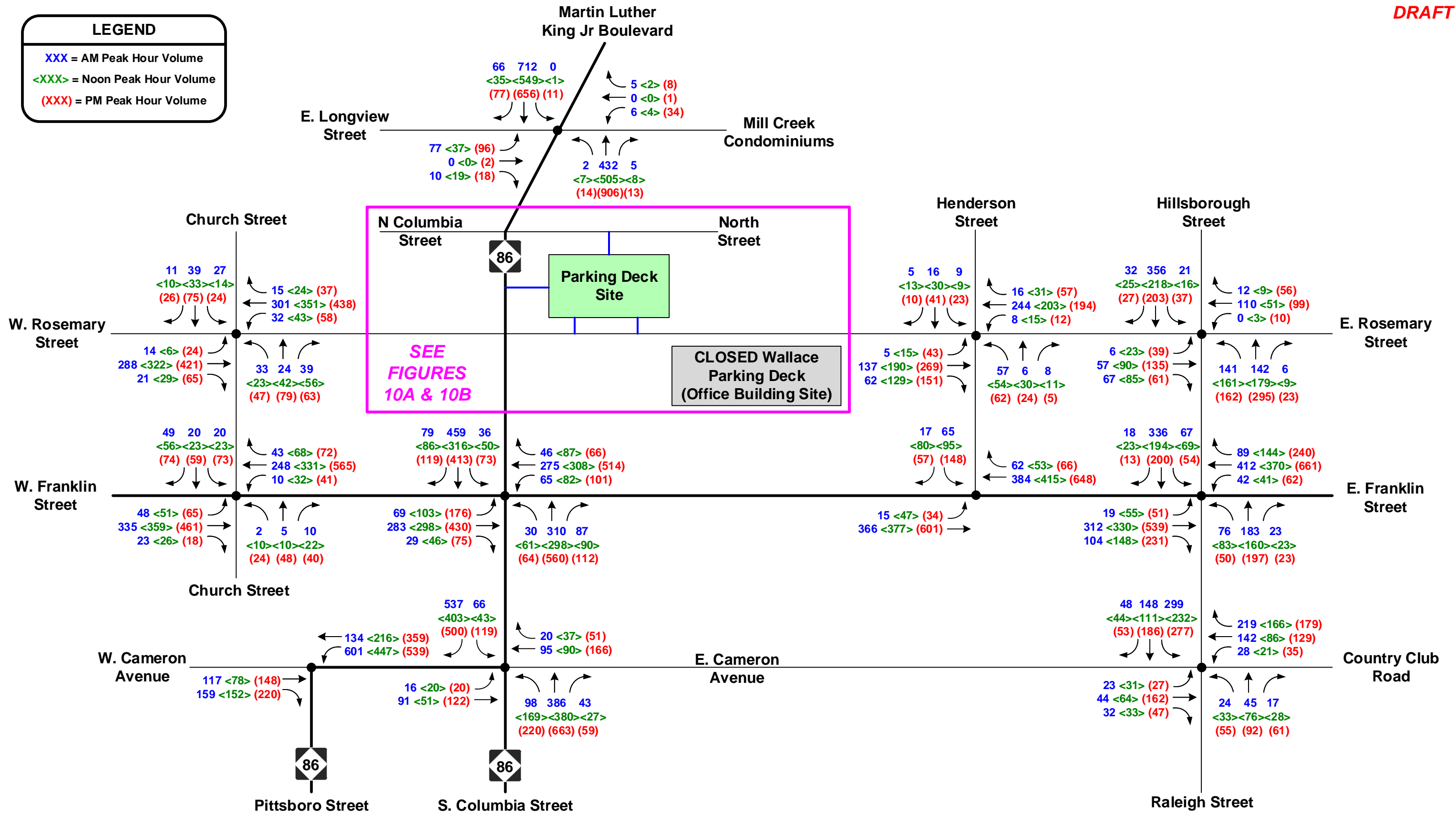
- XX / XX = AM Peak Hour Enter / Exit
- <XX> / <XX> = Noon Peak Hour Enter / Exit
- (XX) / (XX) = PM Peak Hour Enter / Exit



DRAFT

LEGEND

XXX = AM Peak Hour Volume
 <XXX> = Noon Peak Hour Volume
 (XXX) = PM Peak Hour Volume



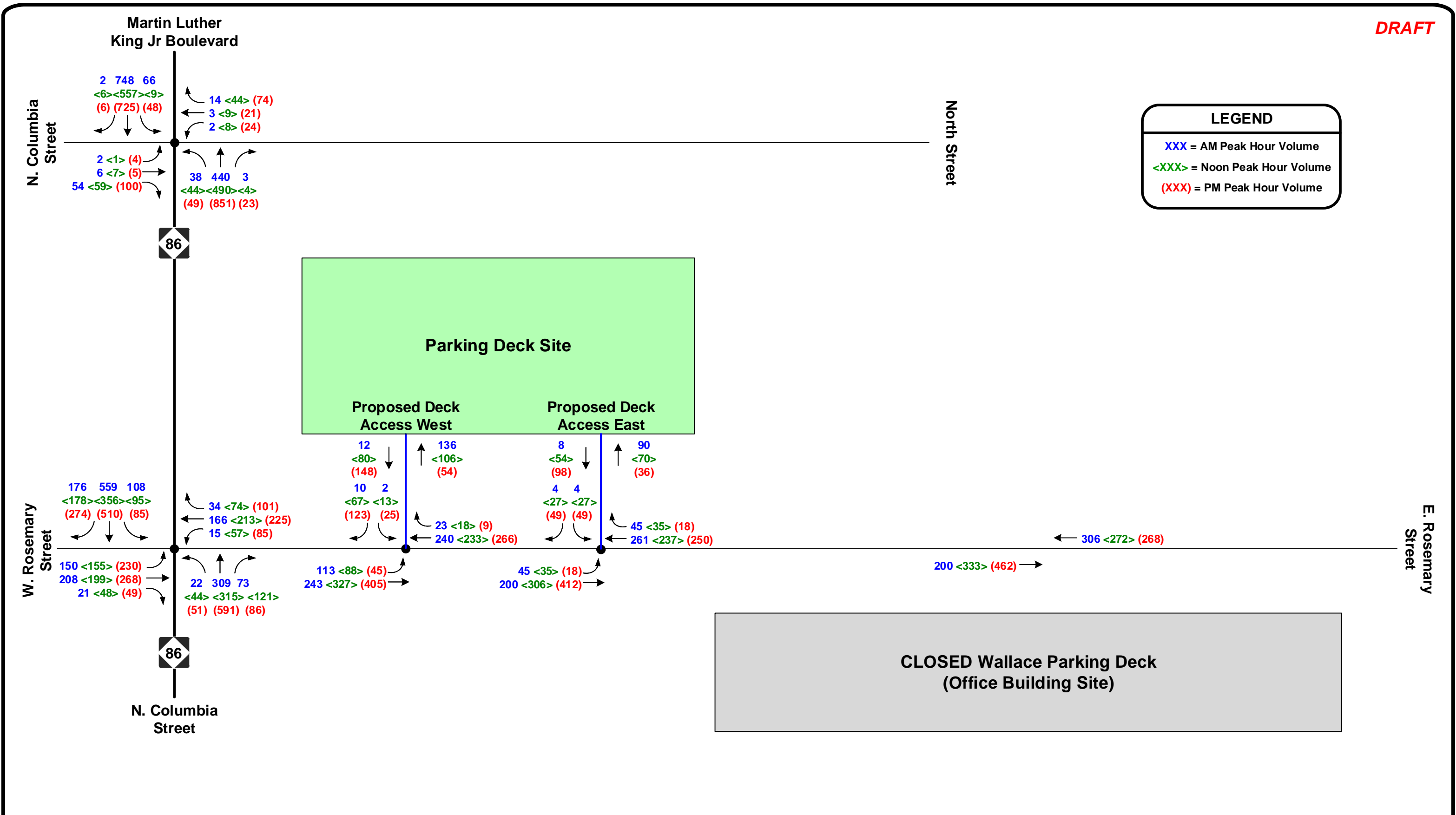
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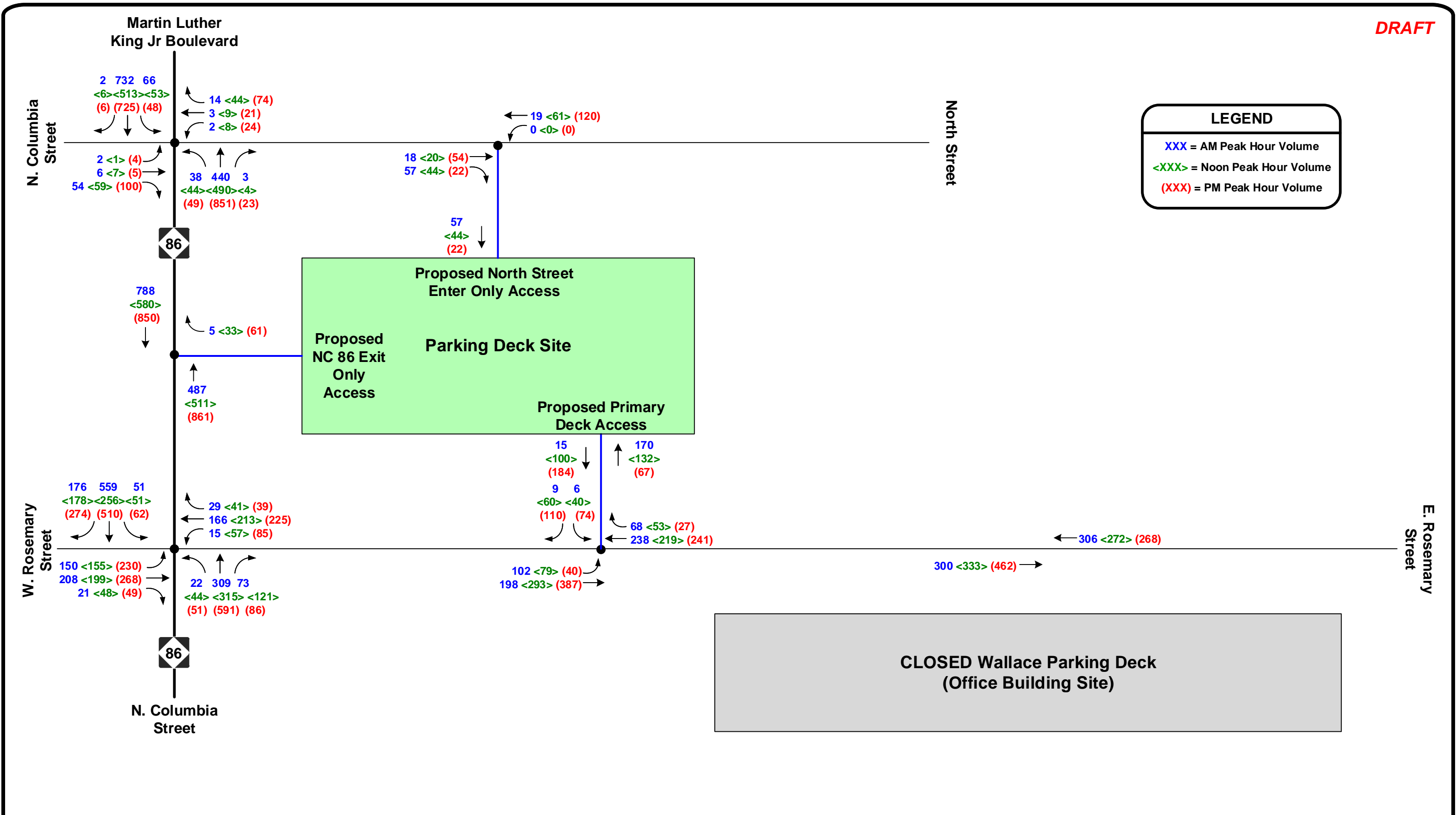
East Rosemary Street Parking Deck
Traffic Impact Study

2022 PEAK HOUR TRAFFIC VOLUMES – ALL ACCESS SCENARIOS



DATE: April 2020

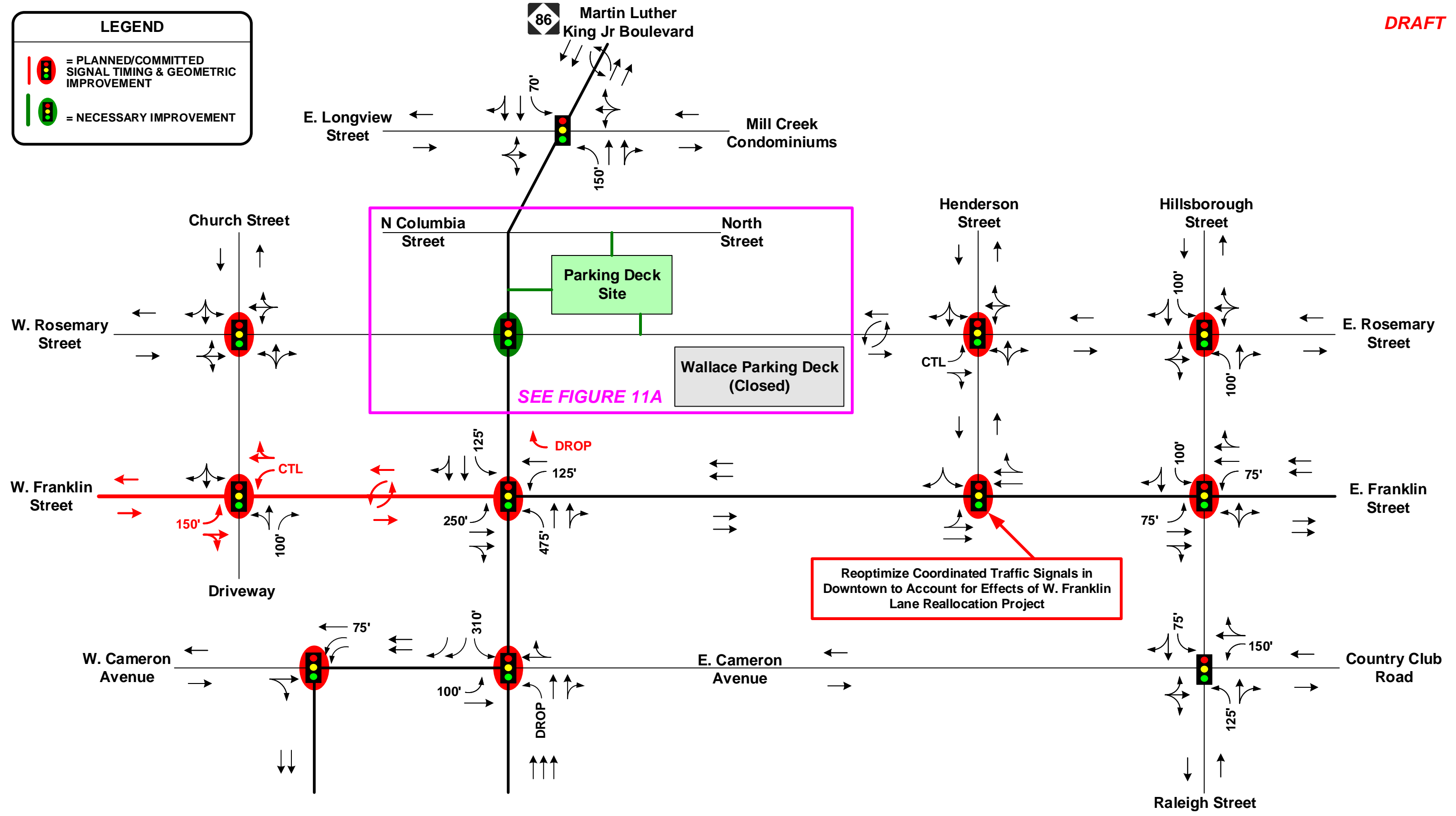
FIGURE 10






LEGEND

-  = PLANNED/COMMITTED SIGNAL TIMING & GEOMETRIC IMPROVEMENT
-  = NECESSARY IMPROVEMENT




NOT TO SCALE

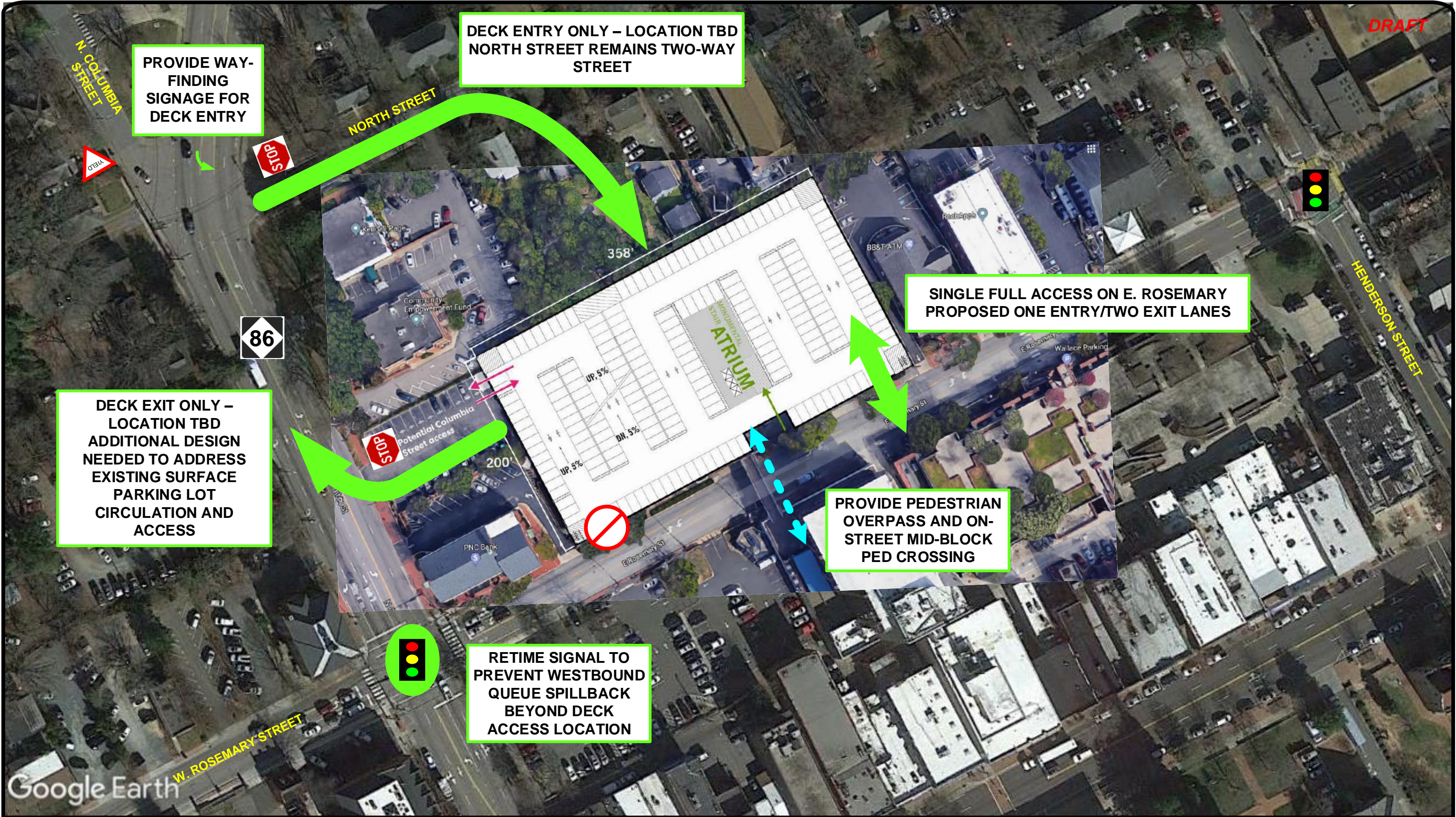
**East Rosemary Street Parking Deck
Traffic Impact Study**

DATE: April 2020

PLANNED, COMMITTED AND RECOMMENDED IMPROVEMENTS

FIGURE 14

DRAFT



PROVIDE WAY-FINDING SIGNAGE FOR DECK ENTRY

DECK ENTRY ONLY - LOCATION TBD NORTH STREET REMAINS TWO-WAY STREET

SINGLE FULL ACCESS ON E. ROSEMARY PROPOSED ONE ENTRY/TWO EXIT LANES

DECK EXIT ONLY - LOCATION TBD ADDITIONAL DESIGN NEEDED TO ADDRESS EXISTING SURFACE PARKING LOT CIRCULATION AND ACCESS

PROVIDE PEDESTRIAN OVERPASS AND ON-STREET MID-BLOCK PED CROSSING

RETIME SIGNAL TO PREVENT WESTBOUND QUEUE SPILLBACK BEYOND DECK ACCESS LOCATION

Google Earth

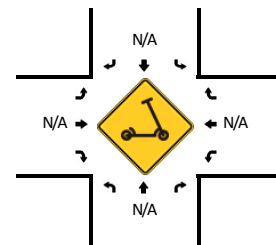
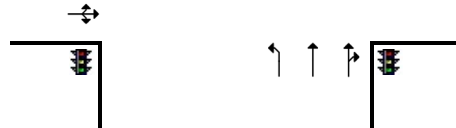
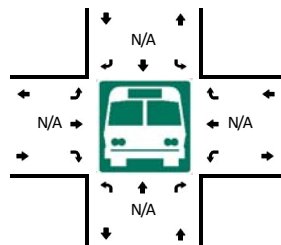
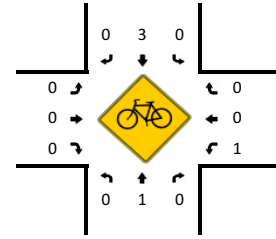
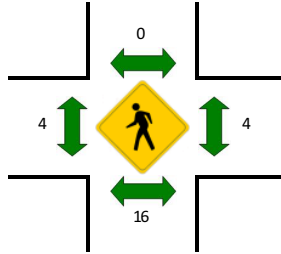
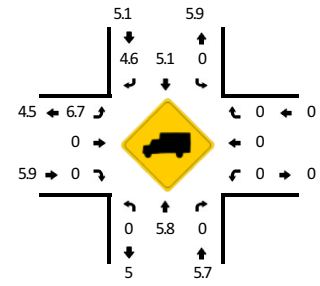
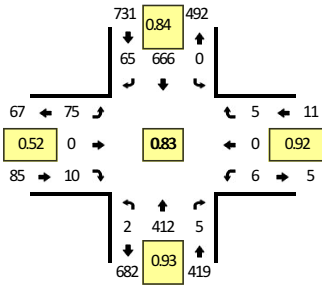


Appendix B – Traffic Count Data

LOCATION: MLK Jr Blvd -- Longview St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192501
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	MLK Jr Blvd (Northbound)				MLK Jr Blvd (Southbound)				Longview St (Eastbound)				Longview St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	69	1	0	0	98	10	0	5	0	2	0	2	0	3	0	190	
7:15 AM	0	59	1	0	0	151	21	0	11	0	9	0	0	0	0	0	252	
7:30 AM	0	94	1	0	0	174	26	0	17	0	3	0	0	0	2	0	317	
7:45 AM	0	111	2	0	0	194	24	0	35	0	6	0	2	0	1	0	375	1134
8:00 AM	1	98	1	0	0	155	6	0	12	0	1	0	3	0	0	0	277	1221
8:15 AM	1	109	1	0	0	143	9	0	11	0	0	0	1	0	2	0	277	1246
8:30 AM	0	98	1	0	0	183	7	0	17	0	4	0	2	0	3	0	315	1244
8:45 AM	0	88	2	0	0	212	11	0	21	1	2	0	2	1	0	0	340	1209

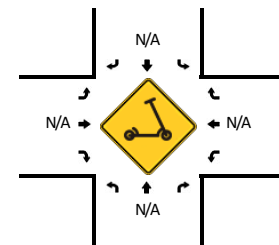
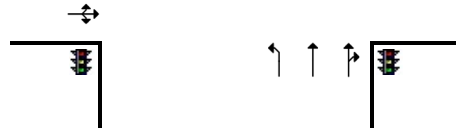
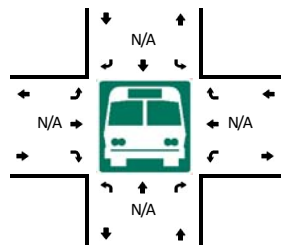
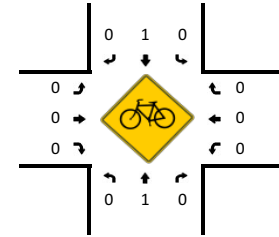
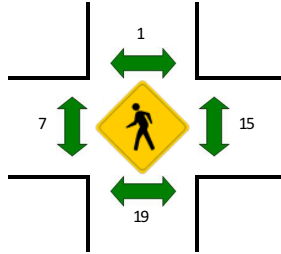
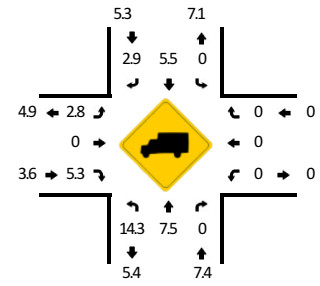
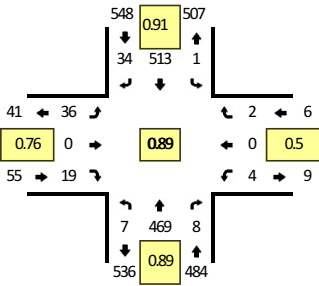
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	444	8	0	0	776	96	0	140	0	24	0	8	0	4	0	1500
Heavy Trucks	0	16	0		0	20	4		0	0	0		0	0	0		40
Buses																	
Pedestrians		4				0				8				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scoters																	

Comments:

LOCATION: MLK Jr Blvd -- Longview St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192502
DATE: Tue, Feb 25 2020

Peak-Hour: 11:30 AM -- 12:30 PM
 Peak 15-Min: 12:00 PM -- 12:15 PM



15-Min Count Period Beginning At	MLK Jr Blvd (Northbound)				MLK Jr Blvd (Southbound)				Longview St (Eastbound)				Longview St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	1	117	2	0	1	111	5	0	10	0	4	0	2	0	0	0	253	
11:45 AM	4	109	4	0	0	124	8	0	2	0	6	0	0	0	1	0	258	
12:00 PM	1	135	0	0	0	137	12	0	12	0	6	0	2	0	1	0	306	
12:15 PM	1	108	2	0	0	141	9	0	12	0	3	0	0	0	0	0	276	1093
12:30 PM	1	107	1	0	0	119	7	0	10	0	0	0	0	0	1	0	246	1086
12:45 PM	4	126	1	0	0	104	9	0	13	0	1	0	0	0	1	0	259	1087
1:00 PM	3	118	0	1	0	121	7	0	7	0	3	0	1	0	0	0	261	1042
1:15 PM	3	119	3	0	1	112	5	0	5	0	4	0	0	0	0	0	252	1018

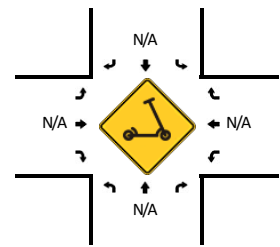
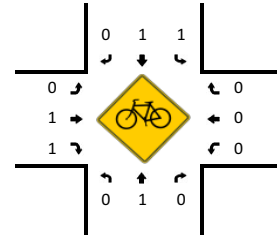
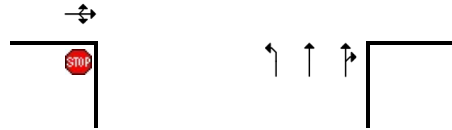
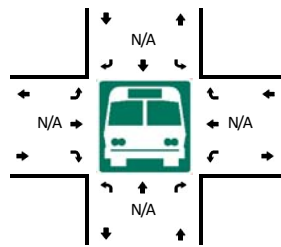
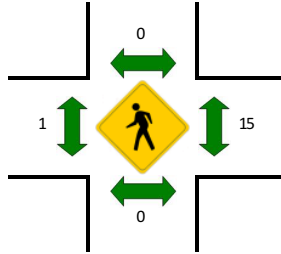
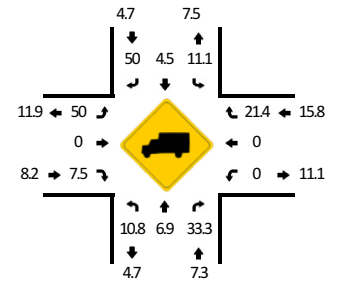
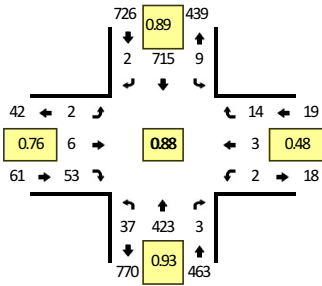
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	540	0	0	0	548	48	0	48	0	24	0	8	0	4	0	1224
Heavy Trucks	0	36	0		0	28	0		0	0	0		0	0	0		64
Buses		40				0				8				16			64
Pedestrians		4	0			4	0			0	0			0	0		8
Bicycles																	
Scoters																	

Comments:

LOCATION: MLK Jr Blvd -- North St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192504
DATE: Tue, Feb 25 2020

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



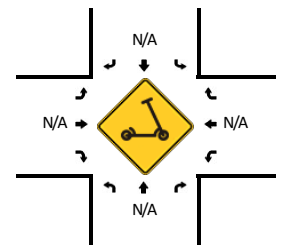
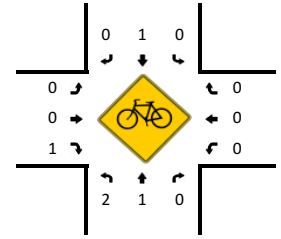
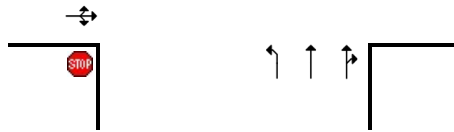
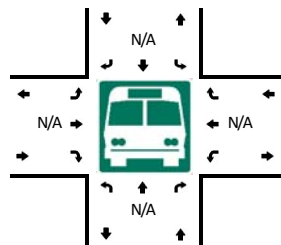
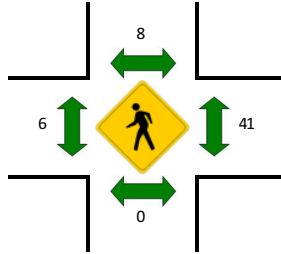
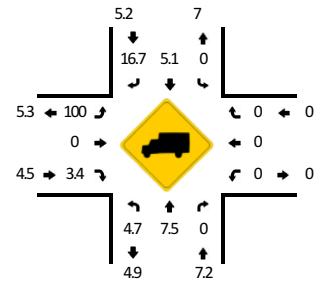
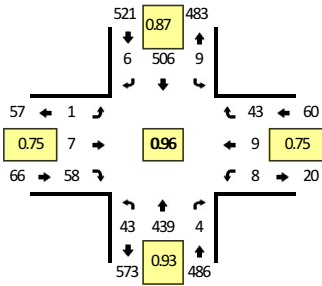
15-Min Count Period Beginning At	MLK Jr Blvd (Northbound)				MLK Jr Blvd (Southbound)				North St (Eastbound)				North St (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	10	70	0	0	0	94	0	0	1	3	13	0	0	1	1	0	0	193	
7:15 AM	12	63	0	0	4	144	0	0	1	1	9	0	0	1	3	0	0	238	
7:30 AM	12	93	1	0	1	175	1	0	0	5	10	0	0	4	3	0	0	305	
7:45 AM	11	113	1	0	2	202	0	0	1	4	15	0	1	2	7	0	0	359	1095
8:00 AM	6	99	1	0	1	144	1	0	0	1	9	0	0	0	3	0	0	265	1167
8:15 AM	9	109	1	0	2	174	1	0	1	1	18	0	0	0	1	0	0	317	1246
8:30 AM	11	102	0	0	4	195	0	0	0	0	11	0	1	1	3	0	0	328	1269
8:45 AM	5	93	0	0	4	199	3	0	0	1	17	0	2	3	4	0	0	331	1241
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	44	452	4	0	8	808	0	0	4	16	60	0	4	8	28	0	0	1436	
Heavy Trucks	8	20	0	0	0	28	0	0	4	0	4	0	0	0	4	0	0	68	
Buses																			
Pedestrians		0				0				0				16				16	
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0			4	
Scoters																			

Comments:

LOCATION: MLK Jr Blvd -- North St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192505
DATE: Tue, Feb 25 2020

Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:15 PM -- 12:30 PM



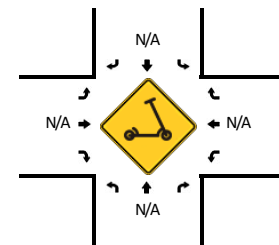
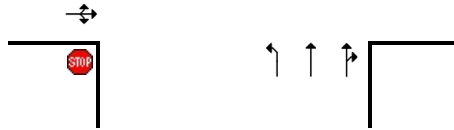
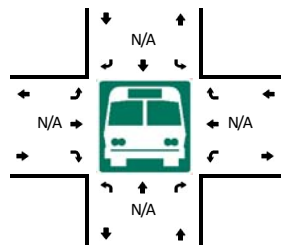
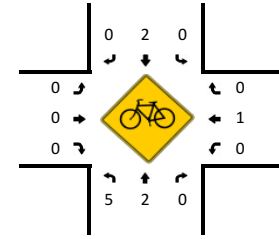
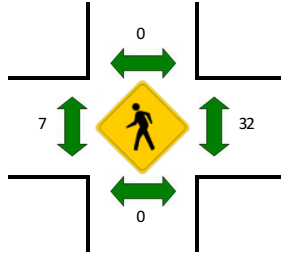
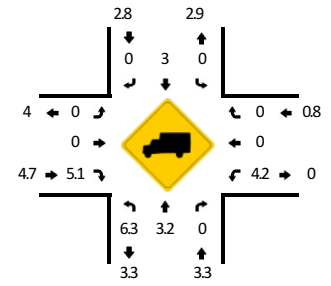
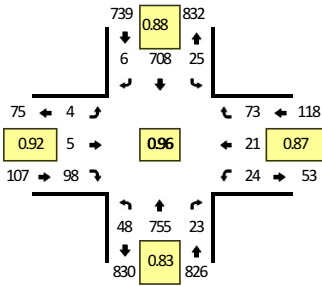
15-Min Count Period Beginning At	MLK Jr Blvd (Northbound)				MLK Jr Blvd (Southbound)				North St (Eastbound)				North St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	8	115	2	0	2	116	0	0	0	0	4	0	4	0	6	0	257	
11:45 AM	8	96	2	0	3	127	2	1	0	2	14	0	0	3	9	0	267	
12:00 PM	7	104	0	1	2	146	2	0	0	0	11	0	3	4	13	0	293	
12:15 PM	13	105	1	0	2	137	1	0	1	2	19	0	2	3	8	0	294	1111
12:30 PM	9	113	3	0	1	116	0	0	0	2	15	0	1	0	12	0	272	1126
12:45 PM	13	117	0	0	4	107	3	0	0	3	13	0	2	2	10	0	274	1133
1:00 PM	10	125	4	1	2	114	2	0	0	5	6	0	4	2	4	0	279	1119
1:15 PM	10	113	0	1	1	107	3	0	0	0	16	0	1	1	7	0	260	1085
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	420	4	0	8	548	4	0	4	8	76	0	8	12	32	0	1176	
Heavy Trucks	4	28	0		0	32	0		4	0	0		0	0	0		68	
Buses																		
Pedestrians		0				16				8				56				80
Bicycles	8	0	0		0	0	0		0	0	0		0	0	0		8	
Scoters																		

Comments:

LOCATION: MLK Jr Blvd -- North St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192506
DATE: Wed, Feb 19 2020

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



15-Min Count Period Beginning At	MLK Jr Blvd (Northbound)				MLK Jr Blvd (Southbound)				North St (Eastbound)				North St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	200	2	0	1	114	3	0	0	0	14	0	1	2	10	0	355	
4:15 PM	11	172	1	0	3	131	0	0	2	1	17	0	2	2	11	0	353	
4:30 PM	13	175	1	0	2	160	3	0	0	1	15	0	5	6	8	0	389	
4:45 PM	16	183	2	0	5	145	0	0	0	4	21	0	2	3	15	0	396	1493
5:00 PM	11	167	3	0	6	202	1	0	0	1	27	0	9	4	21	0	452	1590
5:15 PM	9	197	9	0	4	170	3	0	1	1	23	0	3	5	19	0	444	1681
5:30 PM	17	224	7	0	7	155	0	0	1	3	21	0	6	11	16	0	468	1760
5:45 PM	11	167	4	0	8	181	2	0	2	0	27	0	6	1	17	0	426	1790

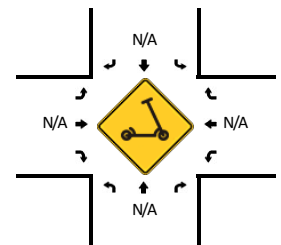
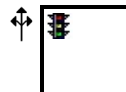
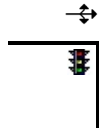
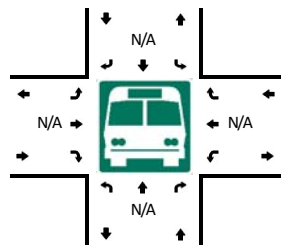
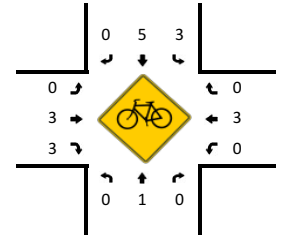
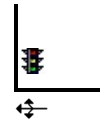
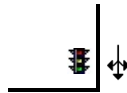
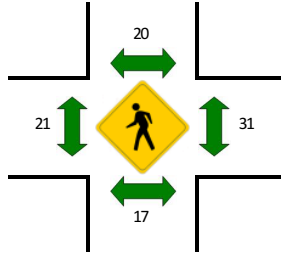
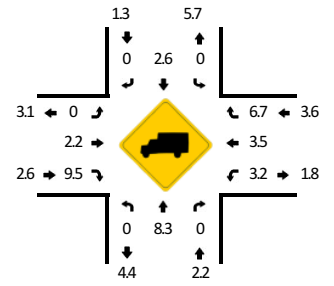
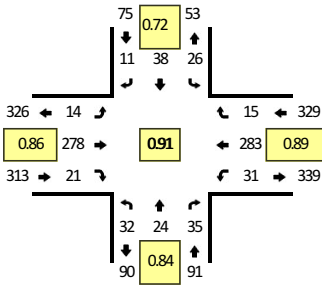
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	68	896	28	0	28	620	0	0	4	12	84	0	24	44	64	0	1872
Heavy Trucks	8	16	0		0	32	0		0	0	4		0	0	0		60
Buses																	
Pedestrians		0				0				4				32			36
Bicycles	4	0	0		0	4	0		0	0	0		0	0	0		8
Scoters																	

Comments:

LOCATION: Church St -- W Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192507
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Church St (Northbound)				Church St (Southbound)				W Rosemary St (Eastbound)				W Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	2	1	0	7	2	1	0	1	30	0	0	3	25	6	0	80	
7:15 AM	2	6	2	0	8	9	3	0	5	33	1	0	4	44	5	0	122	
7:30 AM	3	12	8	0	6	13	5	0	6	61	2	0	4	44	10	0	174	
7:45 AM	2	3	4	0	11	17	0	0	1	80	4	0	14	54	7	0	197	573
8:00 AM	9	6	12	0	9	10	7	0	3	82	6	0	5	71	2	0	222	715
8:15 AM	10	2	7	0	6	10	2	0	3	64	4	0	9	58	6	0	181	774
8:30 AM	5	9	9	0	8	3	0	0	5	67	5	0	11	72	3	0	197	797
8:45 AM	8	7	7	0	3	15	2	0	3	65	6	0	6	82	4	0	208	808

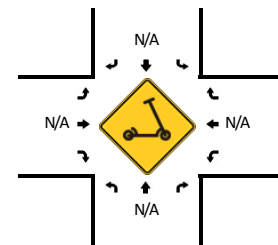
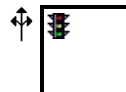
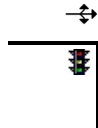
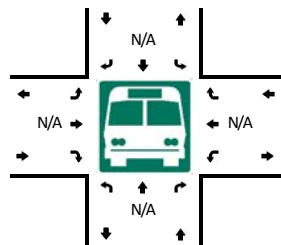
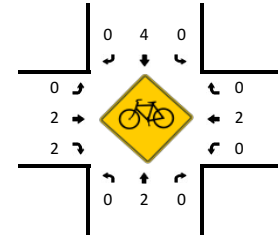
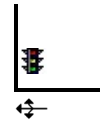
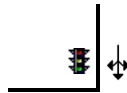
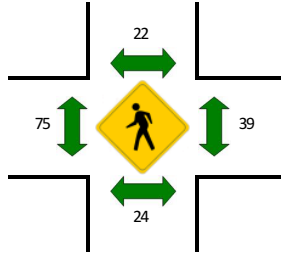
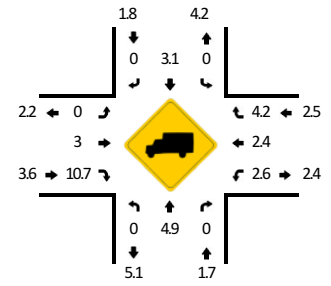
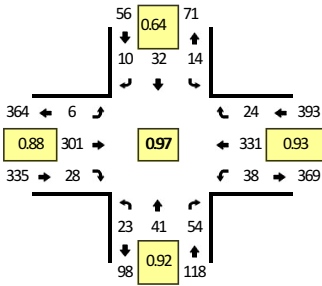
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	36	24	48	0	36	40	28	0	12	328	24	0	20	284	8	0	888
Heavy Trucks	0	0	0		0	4	0		0	0	4		0	4	0		12
Buses																	
Pedestrians		12				24				28				28			92
Bicycles	0	0	0		0	4	0		0	0	0		0	4	0		8
Scoters																	

Comments:

LOCATION: Church St -- W Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192508
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Church St (Northbound)				Church St (Southbound)				W Rosemary St (Eastbound)				W Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	3	9	5	0	6	1	0	0	2	63	3	0	7	57	3	0	159	
11:45 AM	6	3	8	0	4	10	5	0	3	72	7	0	6	68	3	0	195	
12:00 PM	4	11	9	0	4	13	2	0	1	79	6	0	14	86	4	0	233	
12:15 PM	6	10	15	0	5	5	1	0	3	53	4	0	6	91	9	0	208	795
12:30 PM	7	11	13	0	1	2	1	0	1	83	11	0	10	84	7	0	231	867
12:45 PM	6	9	17	0	4	12	6	0	1	86	7	0	8	70	4	0	230	902
1:00 PM	8	9	14	0	8	1	2	0	7	72	3	0	11	59	5	0	199	868
1:15 PM	5	10	8	0	5	8	1	0	4	61	5	0	11	77	7	0	202	862

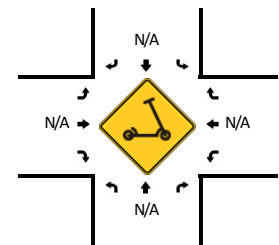
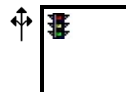
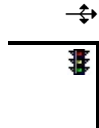
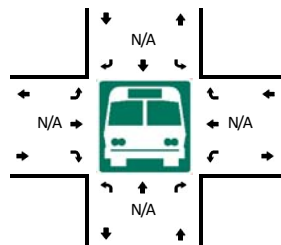
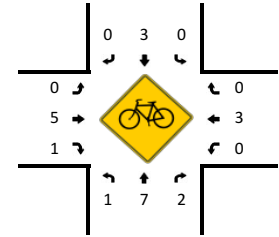
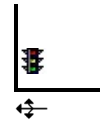
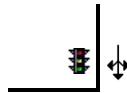
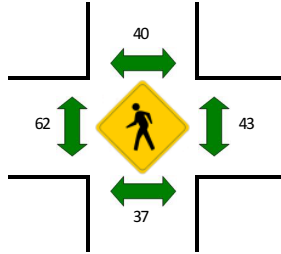
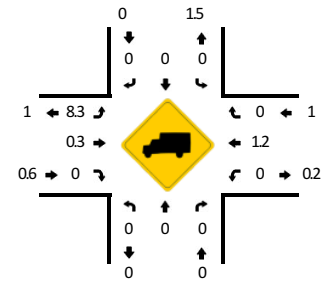
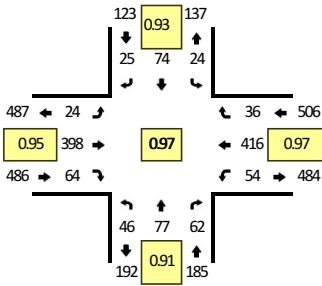
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	44	36	0	16	52	8	0	4	316	24	0	56	344	16	0	932
Heavy Trucks	0	4	0		0	0	0		0	12	4		0	8	0		28
Buses																	
Pedestrians		12				16				68				52			148
Bicycles	0	4	0		0	4	0		0	4	0		0	4	0		16
Scoters																	

Comments:

LOCATION: Church St -- W Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192509
DATE: Wed, Feb 19 2020

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



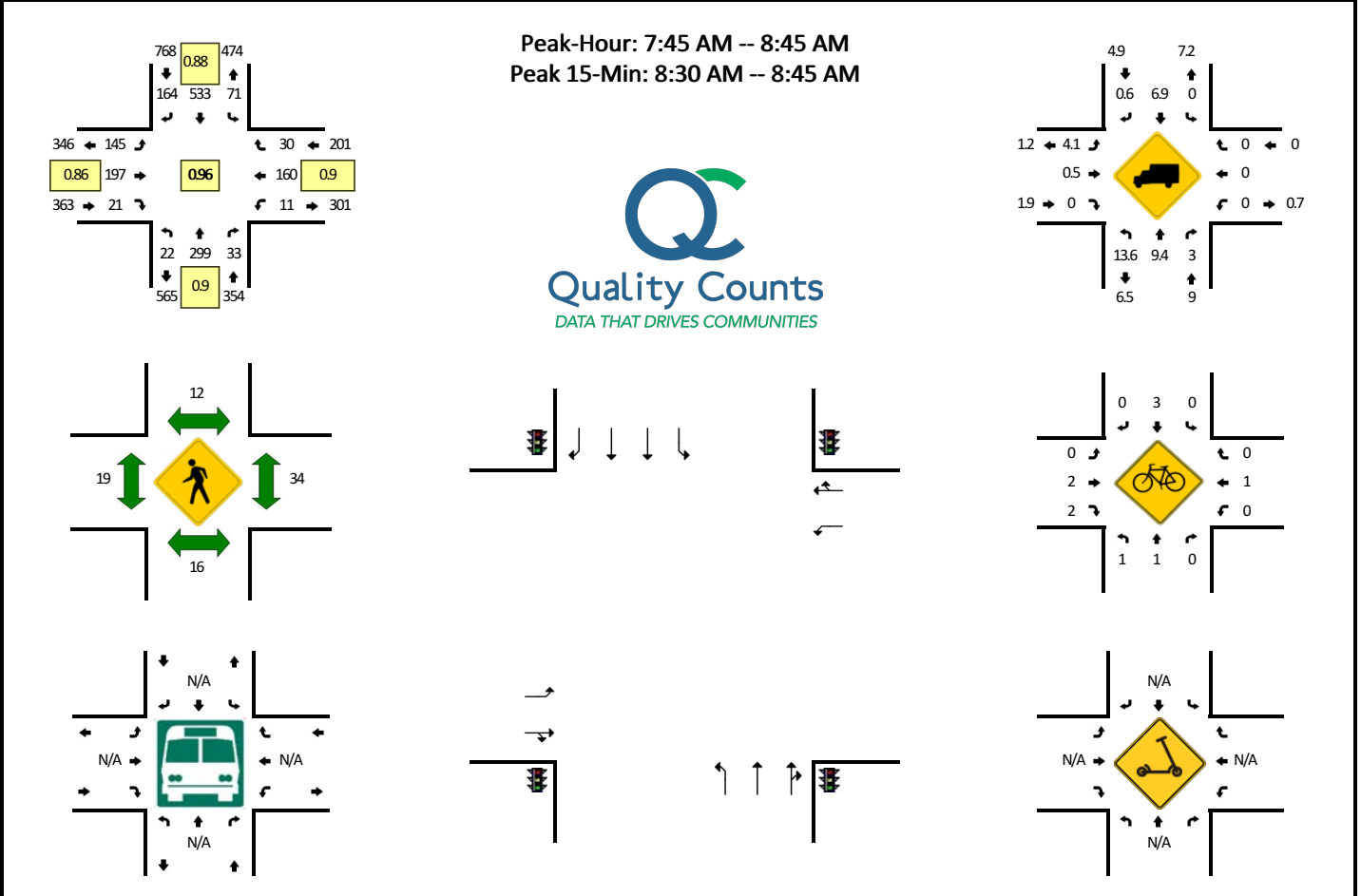
15-Min Count Period Beginning At	Church St (Northbound)				Church St (Southbound)				W Rosemary St (Eastbound)				W Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	11	8	15	0	5	11	2	0	5	79	8	0	8	77	5	0	234	
4:15 PM	8	13	7	0	8	8	3	0	5	74	7	0	11	72	6	0	222	
4:30 PM	12	7	12	0	9	17	6	0	3	87	6	0	15	83	9	0	266	
4:45 PM	17	9	11	0	3	12	6	0	2	91	11	0	8	100	5	0	275	997
5:00 PM	14	28	9	0	9	17	7	0	8	104	16	0	13	103	6	0	334	1097
5:15 PM	12	23	14	0	8	19	5	0	2	90	19	0	9	104	10	0	315	1190
5:30 PM	10	11	19	0	5	19	6	0	7	100	19	0	12	109	10	0	327	1251
5:45 PM	10	15	20	0	2	19	7	0	7	104	10	0	20	100	10	0	324	1300

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	56	112	36	0	36	68	28	0	32	416	64	0	52	412	24	0	1336
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
Buses																	
Pedestrians		68				40				96				56			260
Bicycles	4	4	0		0	0	0		0	4	0		0	4	0		16
Scoters																	

Comments:

LOCATION: N Columbia St -- W Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192510
DATE: Tue, Feb 25 2020



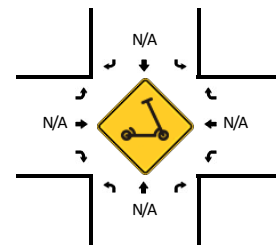
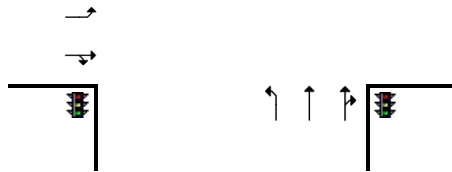
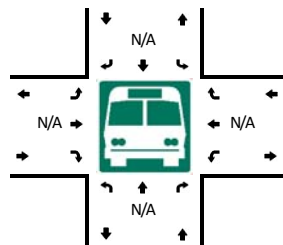
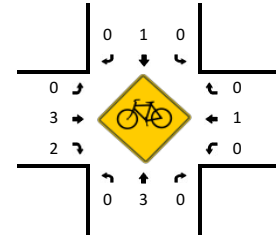
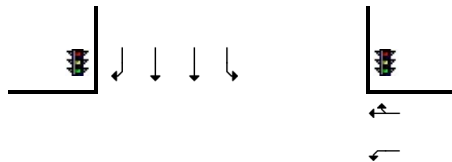
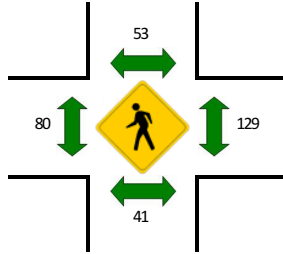
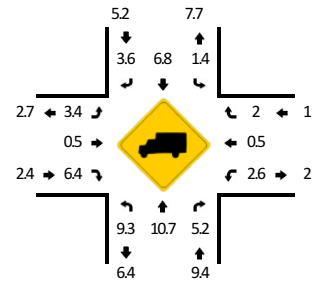
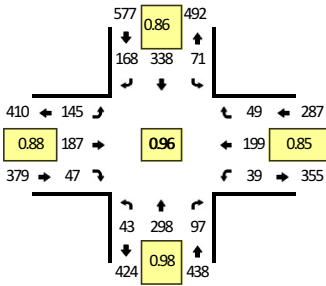
15-Min Count Period Beginning At	N Columbia St (Northbound)				N Columbia St (Southbound)				W Rosemary St (Eastbound)				W Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	64	3	0	13	80	18	0	12	22	2	0	2	14	6	0	242	
7:15 AM	4	57	3	0	9	112	31	0	10	30	2	0	4	19	7	0	288	
7:30 AM	5	88	2	0	10	141	30	0	19	43	10	0	1	32	5	0	386	
7:45 AM	1	71	6	0	23	145	42	0	47	53	5	0	2	37	7	0	439	1355
8:00 AM	4	69	8	0	7	121	36	0	33	54	5	0	2	41	13	0	393	1506
8:15 AM	6	86	6	0	20	119	37	0	27	55	3	0	5	42	7	0	413	1631
8:30 AM	11	73	13	0	21	148	49	0	38	35	8	0	2	40	3	0	441	1686
8:45 AM	7	74	13	0	20	133	43	0	21	41	9	0	5	51	8	0	425	1672
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	44	292	52	0	84	592	196	0	152	140	32	0	8	160	12	0	1764	
Heavy Trucks	8	36	4		0	44	4		8	4	0		0	0	0		108	
Buses																		
Pedestrians		12				8				28				36			84	
Bicycles	0	0	0		0	4	0		0	8	0		0	4	0		16	
Scooters																		

Comments:

LOCATION: N Columbia St -- W Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192511
DATE: Tue, Feb 25 2020

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



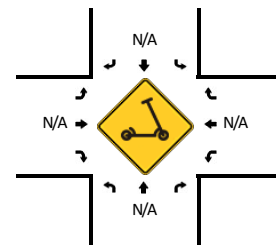
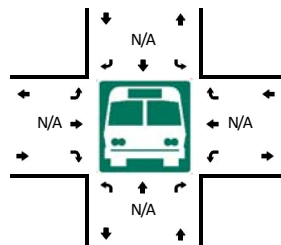
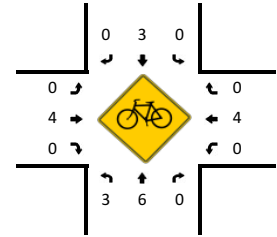
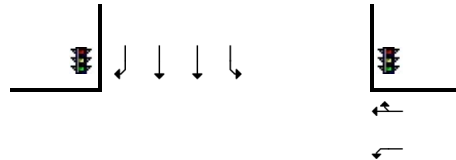
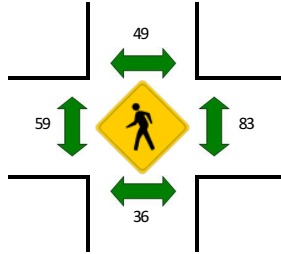
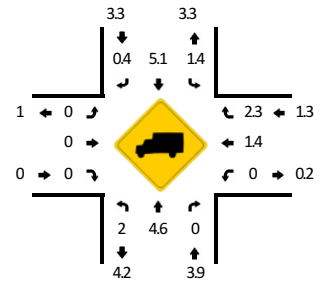
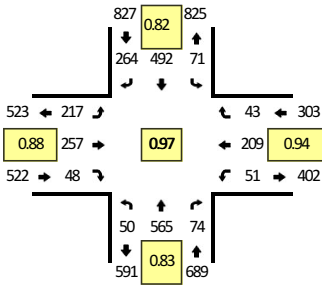
15-Min Count Period Beginning At	N Columbia St (Northbound)				N Columbia St (Southbound)				W Rosemary St (Eastbound)				W Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	6	88	13	0	10	88	33	0	25	42	4	0	3	34	4	0	350	
11:45 AM	8	79	26	0	17	88	41	0	21	50	10	0	12	38	8	0	398	
12:00 PM	7	75	26	0	22	97	48	0	32	53	9	0	8	49	13	0	439	
12:15 PM	9	76	25	0	12	84	47	0	28	39	9	0	13	56	15	0	413	1600
12:30 PM	16	70	22	0	20	87	41	0	46	43	12	0	10	43	8	0	418	1668
12:45 PM	11	77	24	0	17	70	32	0	39	52	17	0	8	51	13	0	411	1681
1:00 PM	6	95	30	0	12	85	31	0	35	46	13	0	10	39	7	0	409	1651
1:15 PM	12	81	12	0	18	80	31	0	31	45	7	0	12	55	12	0	396	1634
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	28	300	104	0	88	388	192	0	128	212	36	0	32	196	52	0	1756	
Heavy Trucks	4	32	8		0	20	12		4	4	4		0	0	0		88	
Buses																		
Pedestrians		32				48				76				124			280	
Bicycles	0	4	0		0	4	0		0	8	0		0	4	0		20	
Scoters																		

Comments:

LOCATION: N Columbia St -- W Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192512
DATE: Wed, Feb 19 2020

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



15-Min Count Period Beginning At	N Columbia St (Northbound)				N Columbia St (Southbound)				W Rosemary St (Eastbound)				W Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	136	20	1	8	82	35	0	61	48	6	0	12	43	11	0	472	
4:15 PM	8	135	18	0	11	90	48	0	33	47	8	0	8	38	15	0	459	
4:30 PM	16	129	19	0	19	96	62	0	44	60	6	0	4	30	13	0	498	
4:45 PM	13	136	9	0	18	103	48	0	48	57	12	0	17	53	17	0	531	1960
5:00 PM	14	124	19	0	16	156	80	0	47	68	13	0	9	45	11	0	602	2090
5:15 PM	12	141	21	0	18	103	64	0	62	66	20	0	16	51	13	0	587	2218
5:30 PM	10	181	16	0	19	105	60	0	56	63	7	0	14	53	10	0	594	2314
5:45 PM	14	119	18	0	18	128	60	0	52	60	8	0	12	60	9	0	558	2341

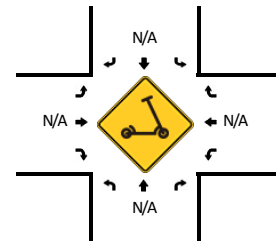
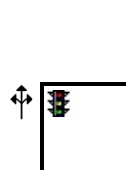
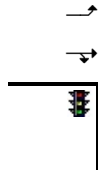
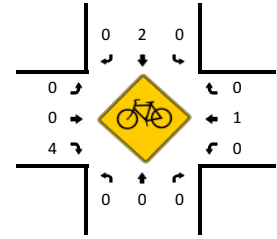
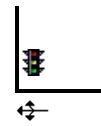
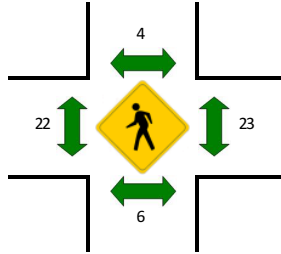
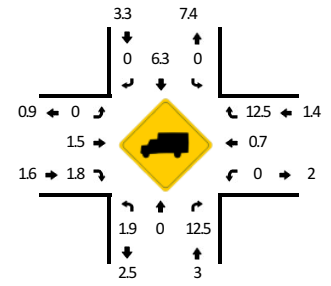
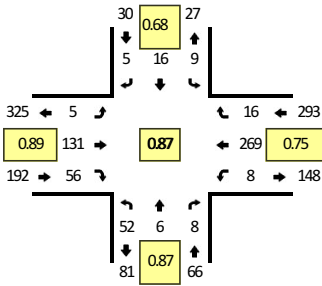
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	496	76	0	64	624	320	0	188	272	52	0	36	180	44	0	2408
Heavy Trucks	0	8	0		4	36	4		0	0	0		0	4	0		56
Buses																	
Pedestrians		28				40				80				68			216
Bicycles	12	8	0		0	0	0		0	0	0		0	0	0		20
Scoters																	

Comments:

LOCATION: Henderson St -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192513
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Henderson St (Northbound)				Henderson St (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	0	1	0	3	1	0	0	0	21	8	0	1	29	2	0	71	
7:15 AM	3	2	0	0	4	1	0	0	0	22	5	0	0	26	4	0	67	
7:30 AM	9	2	1	0	5	3	0	0	1	22	21	0	2	39	11	0	116	
7:45 AM	13	3	1	0	5	5	1	0	3	38	12	0	1	54	9	0	145	399
8:00 AM	8	1	4	0	1	3	0	0	1	39	14	0	1	61	3	0	136	464
8:15 AM	14	0	1	0	2	5	1	0	0	37	14	0	4	64	5	0	147	544
8:30 AM	15	2	1	1	3	5	3	0	3	29	12	0	2	54	1	0	131	559
8:45 AM	14	3	2	0	3	3	1	0	1	26	16	0	1	90	7	0	167	581

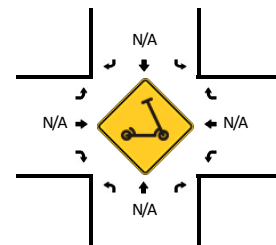
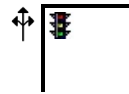
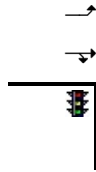
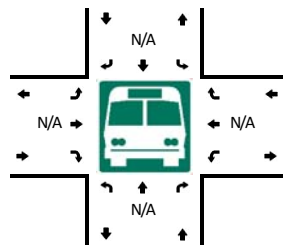
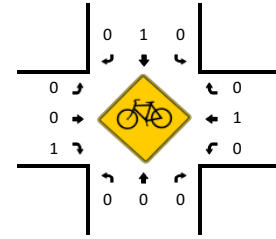
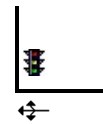
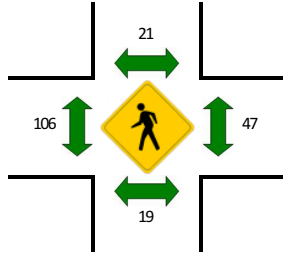
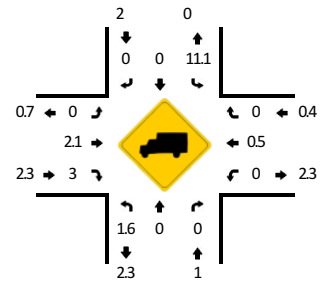
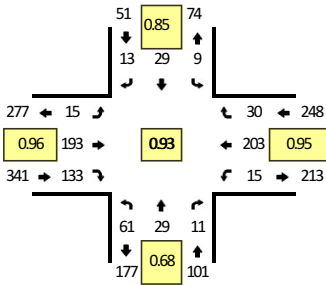
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	12	8	0	12	12	4	0	4	104	64	0	4	360	28	0	668
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	4	0		8
Buses																	
Pedestrians		0				8				44				60			112
Bicycles	0	0	0		0	4	0		0	0	8		0	0	0		12
Scoters																	

Comments:

LOCATION: Henderson St -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192514
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Henderson St (Northbound)				Henderson St (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	13	6	4	0	7	5	2	0	1	41	11	0	3	34	8	0	135	
11:45 AM	15	12	2	0	3	8	4	0	5	57	27	0	4	52	7	0	196	
12:00 PM	21	11	5	0	1	11	3	0	3	49	35	0	2	50	9	0	200	
12:15 PM	12	1	2	0	3	5	3	0	3	45	34	0	5	54	6	0	173	704
12:30 PM	13	5	2	0	2	5	3	0	4	42	37	0	4	47	8	0	172	741
12:45 PM	21	5	3	0	6	8	1	0	5	40	29	0	1	44	7	0	170	715
1:00 PM	12	4	5	0	7	8	3	0	5	49	28	0	2	47	6	0	176	691
1:15 PM	13	7	4	0	3	9	2	0	4	38	30	0	6	57	9	0	182	700

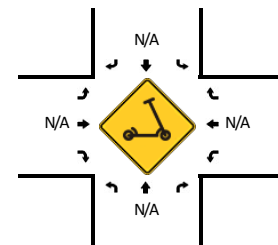
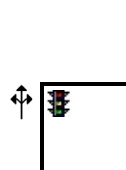
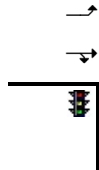
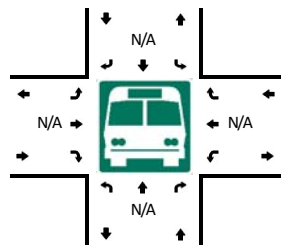
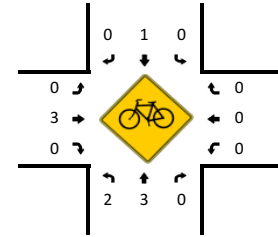
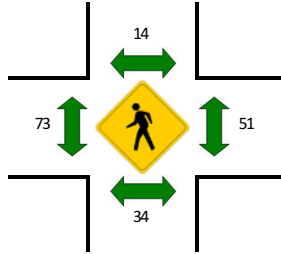
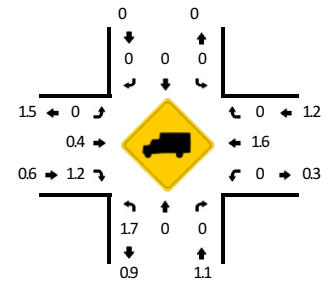
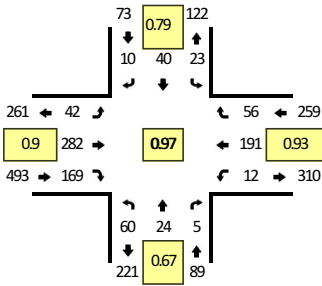
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	44	20	0	4	44	12	0	12	196	140	0	8	200	36	0	800
Heavy Trucks	0	0	0		0	0	0		0	8	4		0	0	0		12
Buses																	
Pedestrians		20				16				80				52			168
Bicycles	0	0	0		0	0	0		0	0	4		0	0	0		4
Scoters																	

Comments:

LOCATION: Henderson St -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192515
DATE: Wed, Feb 19 2020

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



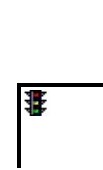
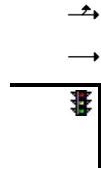
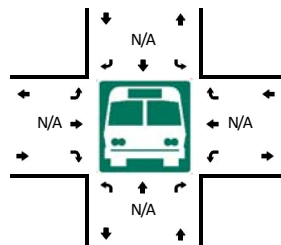
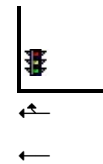
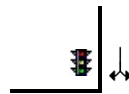
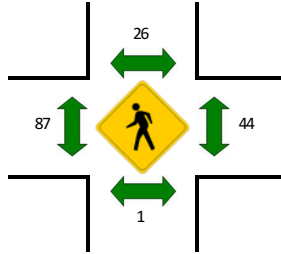
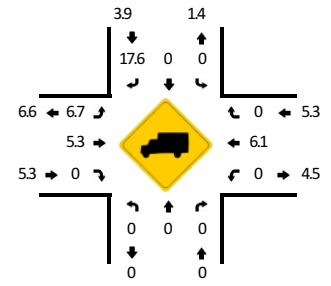
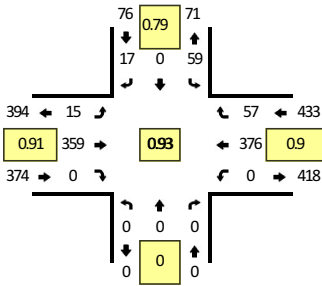
15-Min Count Period Beginning At	Henderson St (Northbound)				Henderson St (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	3	1	0	0	3	2	0	2	59	26	0	1	27	4	0	140	
4:15 PM	6	7	3	0	0	2	0	0	6	53	30	0	3	32	6	0	148	
4:30 PM	9	4	3	0	2	7	2	0	4	59	37	0	4	41	10	0	182	
4:45 PM	13	4	1	0	6	2	2	0	5	76	41	0	2	54	10	0	216	686
5:00 PM	13	4	1	0	4	15	3	0	16	73	48	0	3	43	12	0	235	781
5:15 PM	12	7	1	0	4	14	0	0	12	72	45	0	0	52	13	0	232	865
5:30 PM	22	9	2	0	9	9	5	0	9	61	35	0	7	42	21	0	231	914
5:45 PM	11	8	4	1	4	7	3	0	5	57	32	0	4	57	20	0	213	911
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	16	4	0	16	60	12	0	64	292	192	0	12	172	48	0	940	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	4	0	0	4	0	0	12	
Buses																		
Pedestrians		16				8				100				60			184	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scoters																		

Comments:

LOCATION: Henderson St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192516
DATE: Tue, Feb 25 2020

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



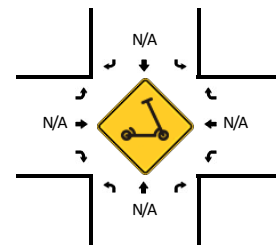
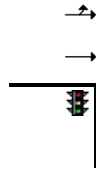
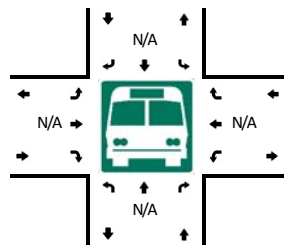
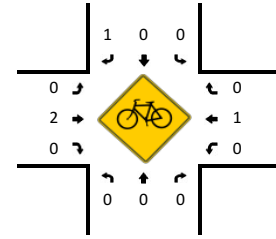
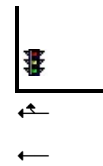
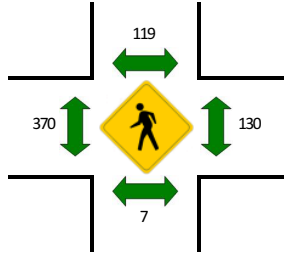
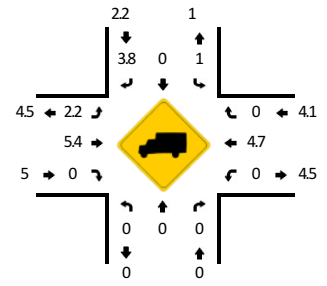
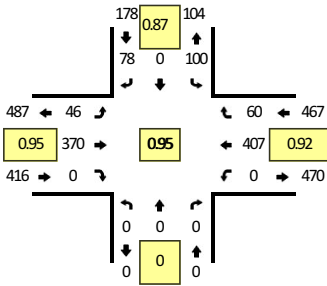
15-Min Count Period Beginning At	Henderson St (Northbound)				Henderson St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	8	0	2	0	2	21	0	0	0	51	6	0	90	
7:15 AM	0	0	0	0	3	0	1	0	1	41	0	0	0	48	2	0	96	
7:30 AM	0	0	0	0	16	0	3	0	4	67	0	0	0	61	8	0	159	
7:45 AM	0	0	0	0	15	0	4	0	8	81	0	0	0	85	10	0	203	548
8:00 AM	0	0	0	0	18	0	2	0	5	81	0	1	0	73	8	0	188	646
8:15 AM	0	0	0	0	18	0	6	0	3	93	0	0	0	99	14	0	233	783
8:30 AM	0	0	0	0	9	0	6	0	2	101	0	0	0	100	19	0	237	861
8:45 AM	0	0	0	0	14	0	3	0	4	84	0	0	0	104	16	0	225	883
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	36	0	24	0	8	404	0	0	0	400	76	0	948	
Heavy Trucks	0	0	0	0	0	0	4	0	0	20	0	0	0	36	0	0	60	
Buses																		
Pedestrians		0				44				72				28			144	
Bicycles	0	0	0		4	0	4		0	0	0		0	4	0		12	
Scoters																		

Comments:

LOCATION: Henderson St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192517
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Henderson St (Northbound)				Henderson St (Southbound)				Franklin St (Eastbound)				Franklin St (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	12	0	4	0	7	76	0	0	0	77	12	0	188	
11:45 AM	0	0	0	0	18	0	19	0	12	84	0	0	0	110	17	0	260	
12:00 PM	0	0	0	0	29	0	17	0	16	93	0	1	0	103	21	0	280	
12:15 PM	0	0	0	0	29	0	22	0	9	95	0	0	0	98	9	0	262	990
12:30 PM	0	0	0	0	24	0	20	0	7	98	0	1	0	96	13	0	259	1061
12:45 PM	0	0	0	0	21	0	17	0	9	102	0	0	0	88	17	0	254	1055
1:00 PM	0	0	0	0	20	0	14	0	11	87	0	1	0	93	9	0	235	1010
1:15 PM	0	0	0	0	26	0	21	0	12	77	0	0	0	74	12	0	222	970

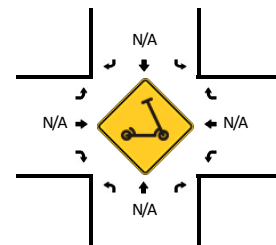
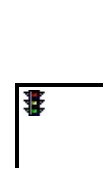
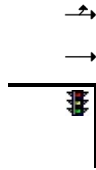
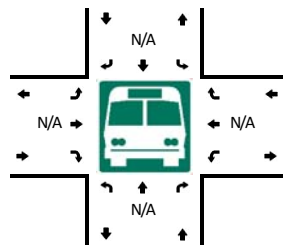
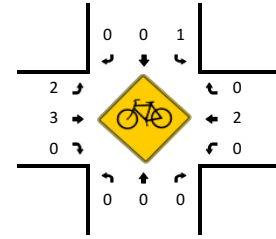
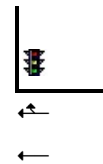
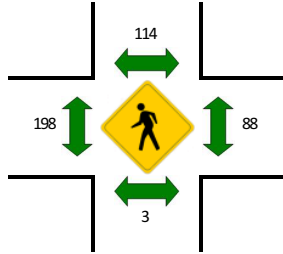
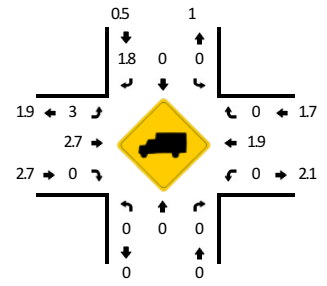
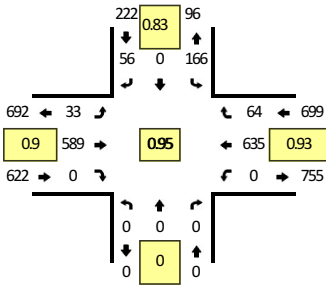
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	116	0	68	0	64	372	0	4	0	412	84	0	1120
Heavy Trucks	0	0	0	0	4	0	0	0	0	20	0	0	0	16	0	0	40
Buses																	
Pedestrians		8				96				316				164			584
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scoters																	

Comments:

LOCATION: Henderson St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192518
DATE: Wed, Feb 19 2020

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

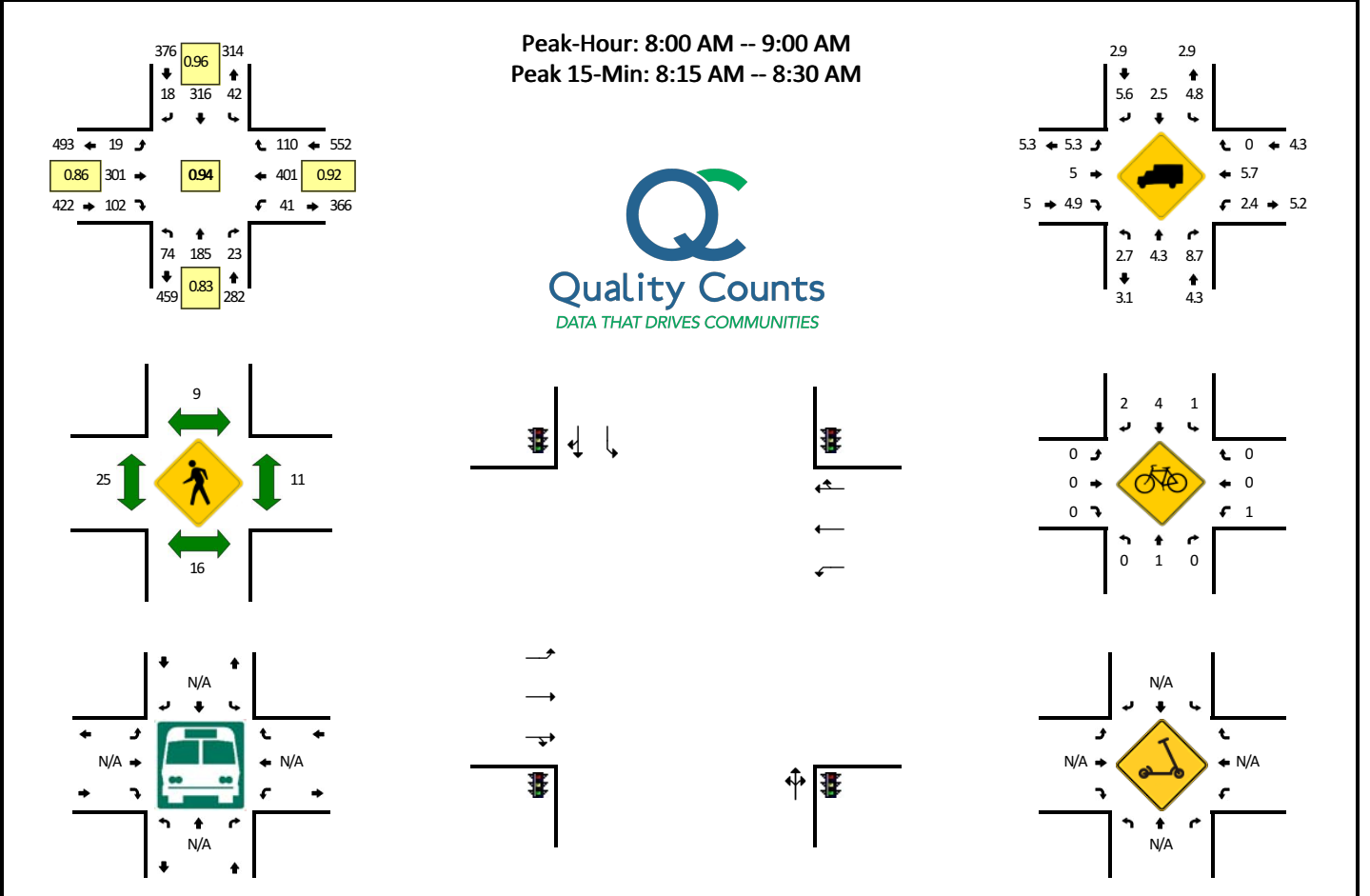


15-Min Count Period Beginning At	Henderson St (Northbound)				Henderson St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	23	0	7	0	5	109	0	1	0	121	11	0	277	
4:15 PM	0	0	0	0	24	0	9	0	5	117	0	0	0	126	8	0	289	
4:30 PM	0	0	0	0	39	0	12	0	4	116	0	0	0	124	14	0	309	
4:45 PM	0	0	0	0	34	0	14	0	9	128	0	0	0	151	10	0	346	1221
5:00 PM	0	0	0	0	56	0	11	0	4	134	0	0	0	146	13	0	364	1308
5:15 PM	0	0	0	0	48	0	14	0	8	161	0	0	0	159	14	0	404	1423
5:30 PM	0	0	0	0	36	0	10	0	12	159	0	1	0	158	22	0	398	1512
5:45 PM	0	0	0	0	26	0	21	0	8	135	0	0	0	172	15	0	377	1543
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	192	0	56	0	32	644	0	0	0	636	56	0	1616	
Heavy Trucks	0	0	0	0	0	0	0	0	4	12	0	0	0	8	0	0	24	
Buses																		
Pedestrians		0				116				136				104			356	
Bicycles	0	0	0		0	0	0		4	0	0		0	4	0		8	
Scoters																		

Comments:

LOCATION: Hillsborough St/Raleigh St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192519
DATE: Tue, Feb 25 2020



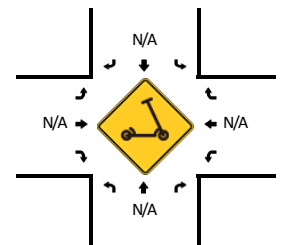
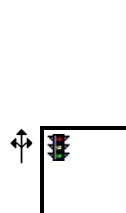
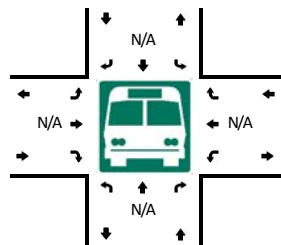
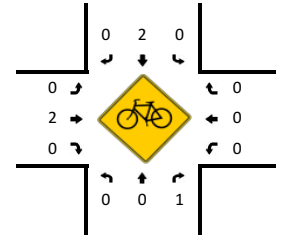
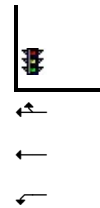
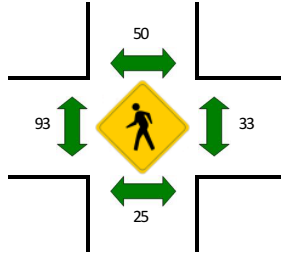
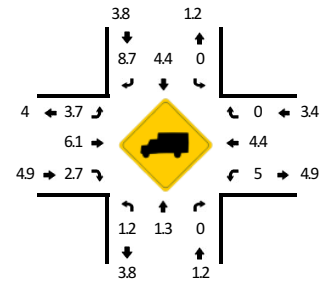
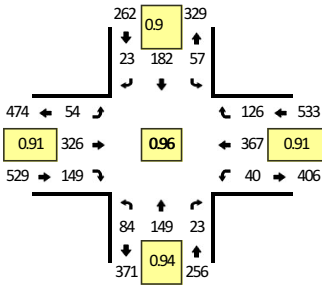
15-Min Count Period Beginning At	Hillsborough St/Raleigh St (Northbound)				Hillsborough St/Raleigh St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	37	4	0	7	43	4	0	2	18	15	0	5	44	20	0	207	
7:15 AM	4	25	3	0	7	60	1	0	0	31	12	0	6	54	14	0	217	
7:30 AM	7	39	0	0	10	84	3	0	1	49	34	0	8	70	15	0	320	
7:45 AM	9	46	5	0	14	85	3	0	1	64	31	0	16	85	27	0	386	1130
8:00 AM	9	41	5	0	10	80	5	0	2	82	20	0	11	80	28	0	373	1296
8:15 AM	19	52	5	0	10	78	6	0	10	84	28	0	8	105	29	0	434	1513
8:30 AM	17	46	3	0	10	77	2	0	3	70	31	0	14	106	30	0	409	1602
8:45 AM	29	46	10	0	12	81	5	0	4	65	23	0	8	110	23	0	416	1632
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	76	208	20	0	40	312	24	0	40	336	112	0	32	420	116	0	1736	
Heavy Trucks	0	4	4		4	8	4		4	8	8		0	28	0		72	
Buses		24				8				32				32			96	
Pedestrians		24				8				32				32			96	
Bicycles	0	4	0		4	8	0		0	0	0		0	0	0		16	
Scoters																		

Comments:

LOCATION: Hillsborough St/Raleigh St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192520
DATE: Tue, Feb 25 2020

Peak-Hour: 12:00 PM -- 1:00 PM
 Peak 15-Min: 12:15 PM -- 12:30 PM



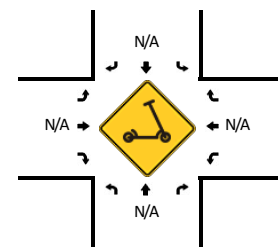
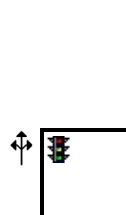
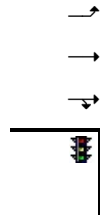
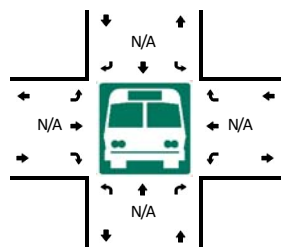
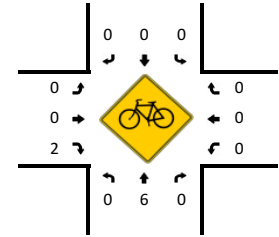
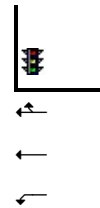
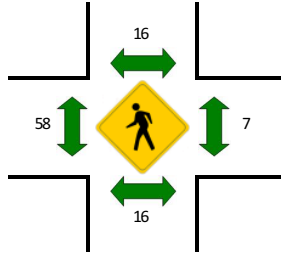
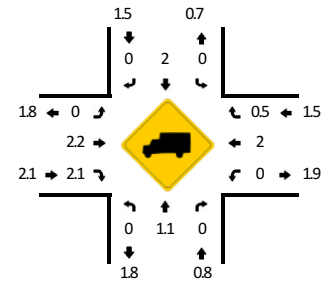
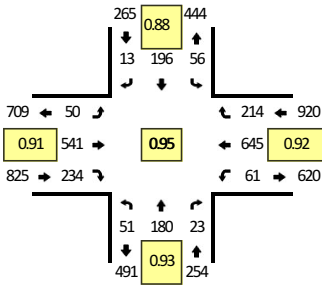
15-Min Count Period Beginning At	Hillsborough St/Raleigh St (Northbound)				Hillsborough St/Raleigh St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	14	36	5	0	17	37	4	0	7	62	24	0	9	72	16	0	303	
11:45 AM	20	38	2	0	22	54	9	0	8	57	27	0	9	97	30	0	373	
12:00 PM	25	30	4	0	16	43	6	0	12	68	42	0	9	106	31	0	392	
12:15 PM	26	33	6	0	18	47	8	0	15	90	41	0	10	79	37	0	410	1478
12:30 PM	11	44	9	0	13	46	4	0	15	83	33	0	11	91	33	0	393	1568
12:45 PM	22	42	4	0	10	46	5	0	12	85	33	0	10	91	25	0	385	1580
1:00 PM	14	51	4	0	14	45	3	0	7	83	32	0	11	87	21	0	372	1560
1:15 PM	13	33	3	0	17	48	9	0	9	79	21	0	10	69	39	0	350	1500
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	104	132	24	0	72	188	32	0	60	360	164	0	40	316	148	0	1640	
Heavy Trucks	0	4	0		0	4	4		0	24	4		0	24	0		64	
Buses		36				92				152				56			336	
Pedestrians		36				92				152				56			336	
Bicycles	0	0	4		0	8	0		0	0	0		0	0	0		12	
Scoters																		

Comments:

LOCATION: Hillsborough St/Raleigh St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192521
DATE: Wed, Feb 19 2020

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



15-Min Count Period Beginning At	Hillsborough St/Raleigh St (Northbound)				Hillsborough St/Raleigh St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	13	32	6	0	17	35	2	0	6	102	44	0	8	113	32	0	410	
4:15 PM	13	56	5	0	16	55	1	0	0	111	32	0	8	133	29	0	459	
4:30 PM	10	48	10	0	13	50	3	0	10	126	43	0	14	130	37	0	494	
4:45 PM	11	65	8	0	11	47	7	0	6	114	47	0	14	143	41	0	514	1877
5:00 PM	12	43	5	0	11	50	0	0	8	135	70	0	14	163	53	0	564	2031
5:15 PM	12	49	7	0	19	45	7	0	15	143	69	0	16	147	57	0	586	2158
5:30 PM	13	48	4	0	17	54	4	0	17	141	49	0	13	183	53	0	596	2260
5:45 PM	14	40	7	0	9	47	2	0	10	122	46	0	18	152	51	0	518	2264

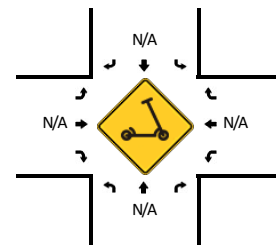
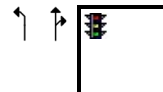
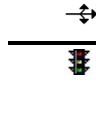
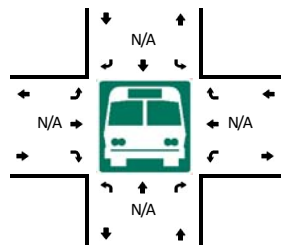
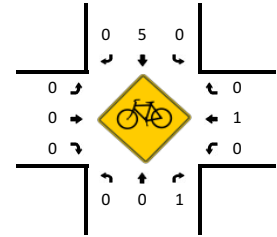
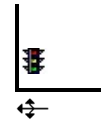
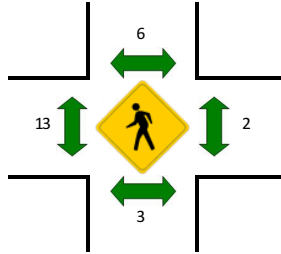
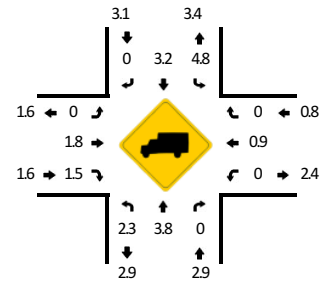
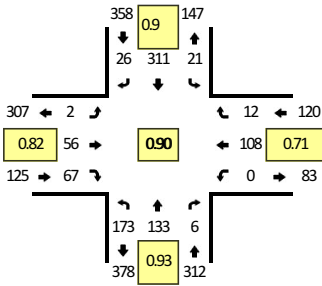
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	192	16	0	68	216	16	0	68	564	196	0	52	732	212	0	2384
Heavy Trucks	0	0	0	0	0	0	0	0	0	12	8	0	0	12	0	0	32
Buses																	
Pedestrians		12				12				92				12			128
Bicycles	0	8	0		0	0	0		0	0	4		0	0	0		12
Scoters																	

Comments:

LOCATION: Hillsborough St -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192522
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Hillsborough St (Northbound)				Hillsborough St (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	19	38	1	0	3	42	4	0	2	7	12	0	0	14	0	0	142	
7:15 AM	18	18	0	0	1	57	4	0	0	11	9	0	0	7	2	0	127	
7:30 AM	33	24	0	0	8	88	6	0	0	6	13	0	1	17	4	0	200	
7:45 AM	40	31	0	0	1	82	5	0	4	18	18	0	0	23	2	0	224	693
8:00 AM	39	33	1	0	5	76	9	0	0	11	20	0	0	20	4	0	218	769
8:15 AM	48	36	0	0	7	80	2	0	0	18	17	0	0	23	3	0	234	876
8:30 AM	38	41	1	0	2	72	6	0	0	11	10	0	0	25	3	0	209	885
8:45 AM	48	23	4	0	7	83	9	0	2	16	20	0	0	40	2	0	254	915

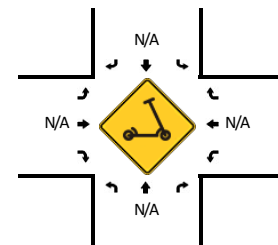
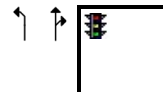
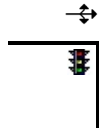
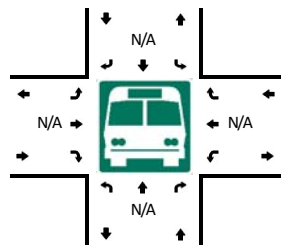
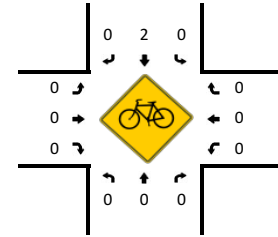
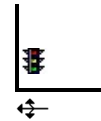
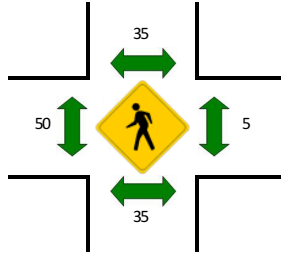
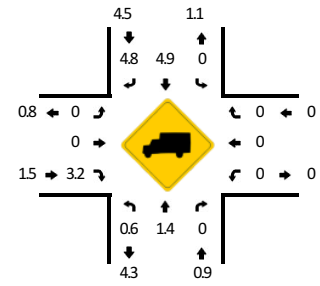
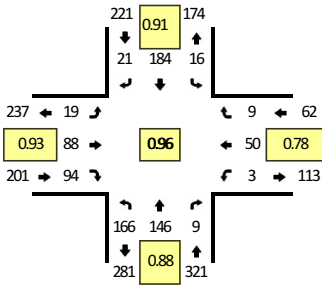
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	192	92	16	0	28	332	36	0	8	64	80	0	0	160	8	0	1016
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				4				20				0			24
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scoters																	

Comments:

LOCATION: Hillsborough St -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192523
DATE: Tue, Feb 25 2020

Peak-Hour: 11:45 AM -- 12:45 PM
 Peak 15-Min: 12:15 PM -- 12:30 PM



15-Min Count Period Beginning At	Hillsborough St (Northbound)				Hillsborough St (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	28	28	2	0	4	35	2	0	3	15	22	0	0	16	1	0	156	
11:45 AM	38	36	0	0	5	51	4	0	1	19	31	0	1	18	1	0	205	
12:00 PM	44	27	1	0	2	44	8	0	5	27	22	0	1	7	4	0	192	
12:15 PM	41	40	3	0	6	48	7	0	7	21	21	0	1	14	1	0	210	763
12:30 PM	43	43	5	0	3	41	2	0	6	21	20	0	0	11	3	0	198	805
12:45 PM	32	41	2	0	2	40	3	0	0	27	21	0	0	21	6	0	195	795
1:00 PM	36	36	3	0	1	38	2	0	3	28	26	0	1	13	5	0	192	795
1:15 PM	37	40	1	0	3	41	6	0	4	23	21	0	3	16	3	0	198	783

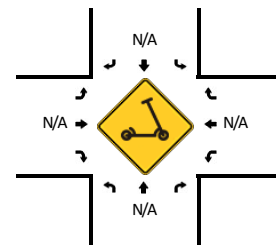
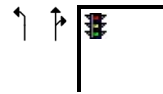
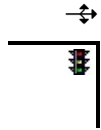
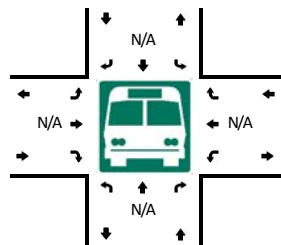
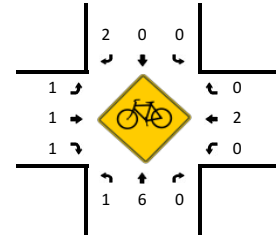
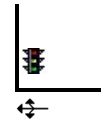
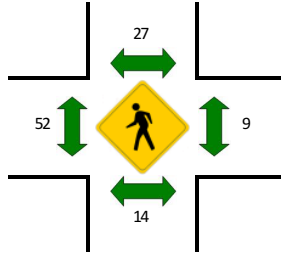
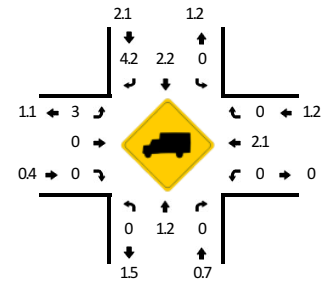
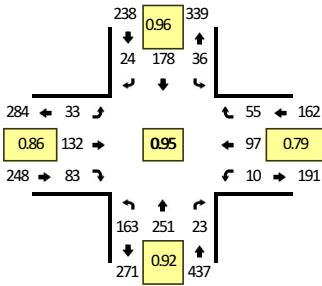
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	164	160	12	0	24	192	28	0	28	84	84	0	4	56	4	0	840
Heavy Trucks	0	4	0		0	8	4		0	0	4		0	0	0		20
Buses																	
Pedestrians		44				40				60				4			148
Bicycles	0	0	0		0	8	0		0	0	0		0	0	0		8
Scoters																	

Comments:

LOCATION: Hillsborough St -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192524
DATE: Wed, Feb 19 2020

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



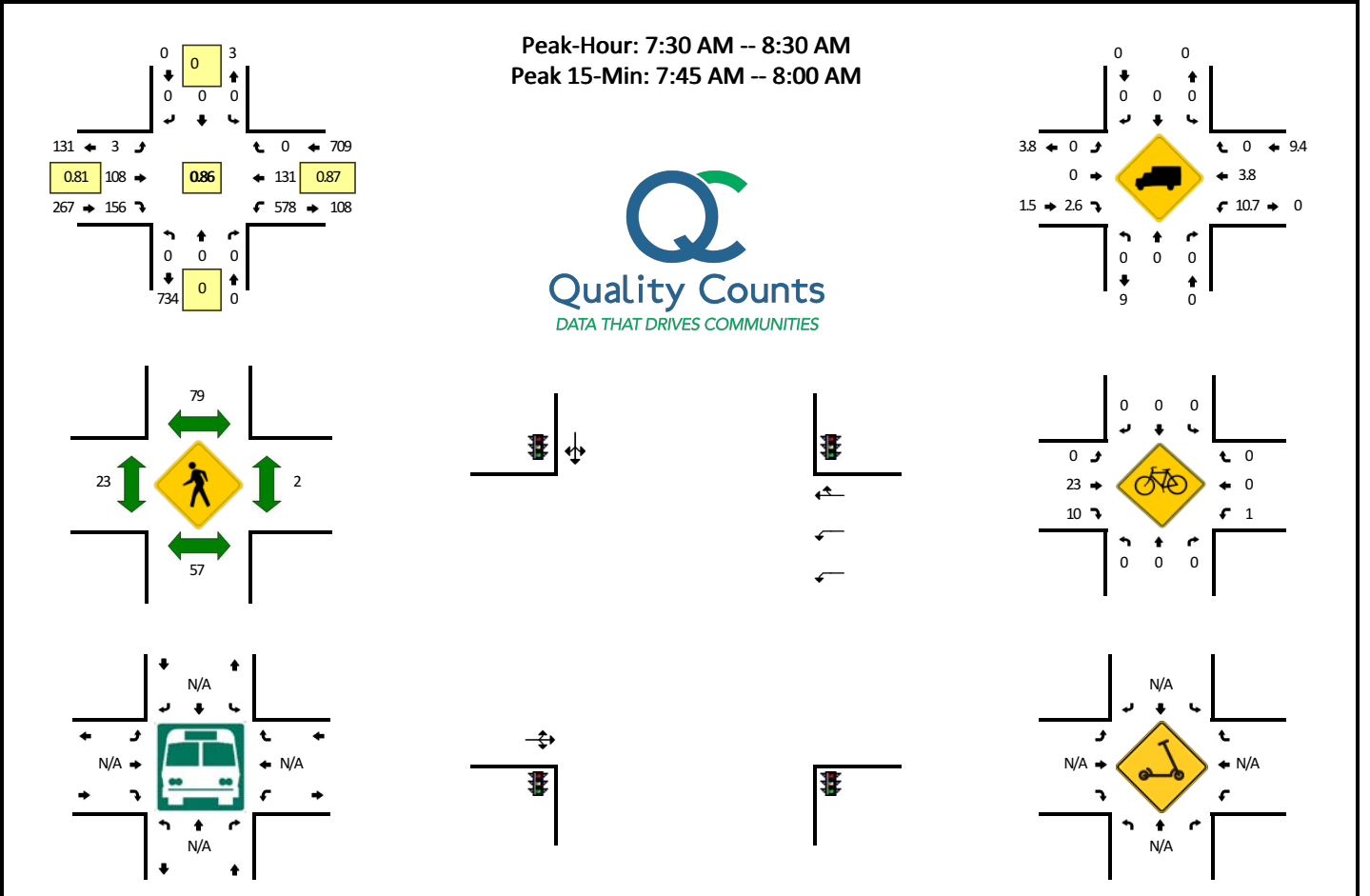
15-Min Count Period Beginning At	Hillsborough St (Northbound)				Hillsborough St (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	21	48	1	0	2	34	1	0	8	28	27	0	0	9	5	0	184	
4:15 PM	23	54	0	0	5	38	2	0	6	24	25	0	1	11	8	0	197	
4:30 PM	36	62	2	0	8	48	2	0	4	36	23	0	0	21	9	0	251	
4:45 PM	39	68	4	0	7	26	4	0	8	35	30	0	1	17	16	0	255	887
5:00 PM	32	65	8	0	8	45	5	0	5	39	18	0	2	19	9	0	255	958
5:15 PM	41	67	7	0	5	50	2	0	8	40	24	0	2	22	18	0	286	1047
5:30 PM	53	62	4	0	9	45	7	0	12	18	26	0	1	23	15	0	275	1071
5:45 PM	37	57	4	0	14	38	10	0	8	35	15	0	5	33	13	0	269	1085

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	268	28	0	20	200	8	0	32	160	96	0	8	88	72	0	1144
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	8	0		12
Buses																	
Pedestrians		0				12				8				0			20
Bicycles	0	12	0		0	0	4		4	0	0		0	0	0		20
Scoters																	

Comments:

LOCATION: Pittsboro St -- Cameron Ave
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192525
DATE: Tue, Feb 25 2020



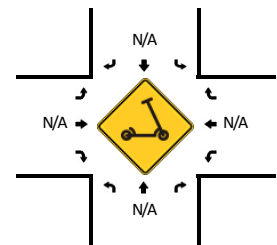
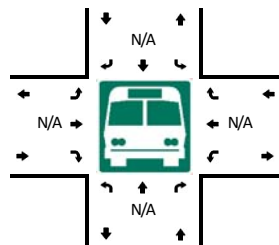
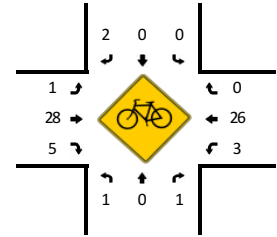
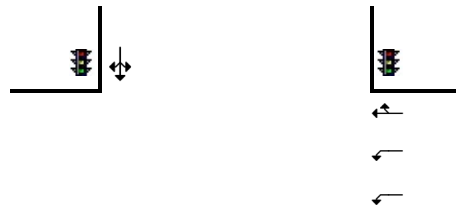
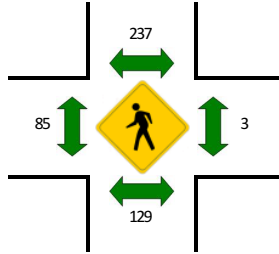
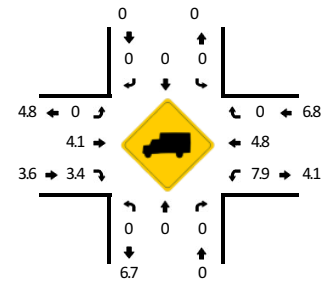
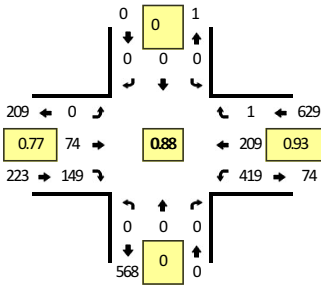
15-Min Count Period Beginning At	Pittsboro St (Northbound)				Pittsboro St (Southbound)				Cameron Ave (Eastbound)				Cameron Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	11	21	0	82	43	0	0	157	
7:15 AM	0	0	0	0	0	0	0	0	0	17	26	0	116	27	0	0	186	
7:30 AM	0	0	0	0	0	0	0	0	0	28	43	0	141	24	0	0	236	
7:45 AM	0	0	0	0	0	0	0	0	1	30	51	0	167	36	0	0	285	864
8:00 AM	0	0	0	0	0	0	0	0	1	28	35	0	132	37	0	0	233	940
8:15 AM	0	0	0	0	0	0	0	0	1	22	27	0	138	34	0	0	222	976
8:30 AM	0	0	0	0	1	0	0	0	1	27	33	0	126	35	1	0	224	964
8:45 AM	0	0	0	0	0	0	0	0	0	17	44	0	131	39	0	0	231	910
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	4	120	204	0	668	144	0	0	1140	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	4	0	76	8	0	0	88	
Buses																		
Pedestrians		72				176				48				4			300	
Bicycles	0	0	0		0	0	0		0	12	12		0	0	0		24	
Scoters																		

Comments:

LOCATION: Pittsboro St -- Cameron Ave
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192526
DATE: Tue, Feb 25 2020

Peak-Hour: 11:45 AM -- 12:45 PM
 Peak 15-Min: 12:15 PM -- 12:30 PM



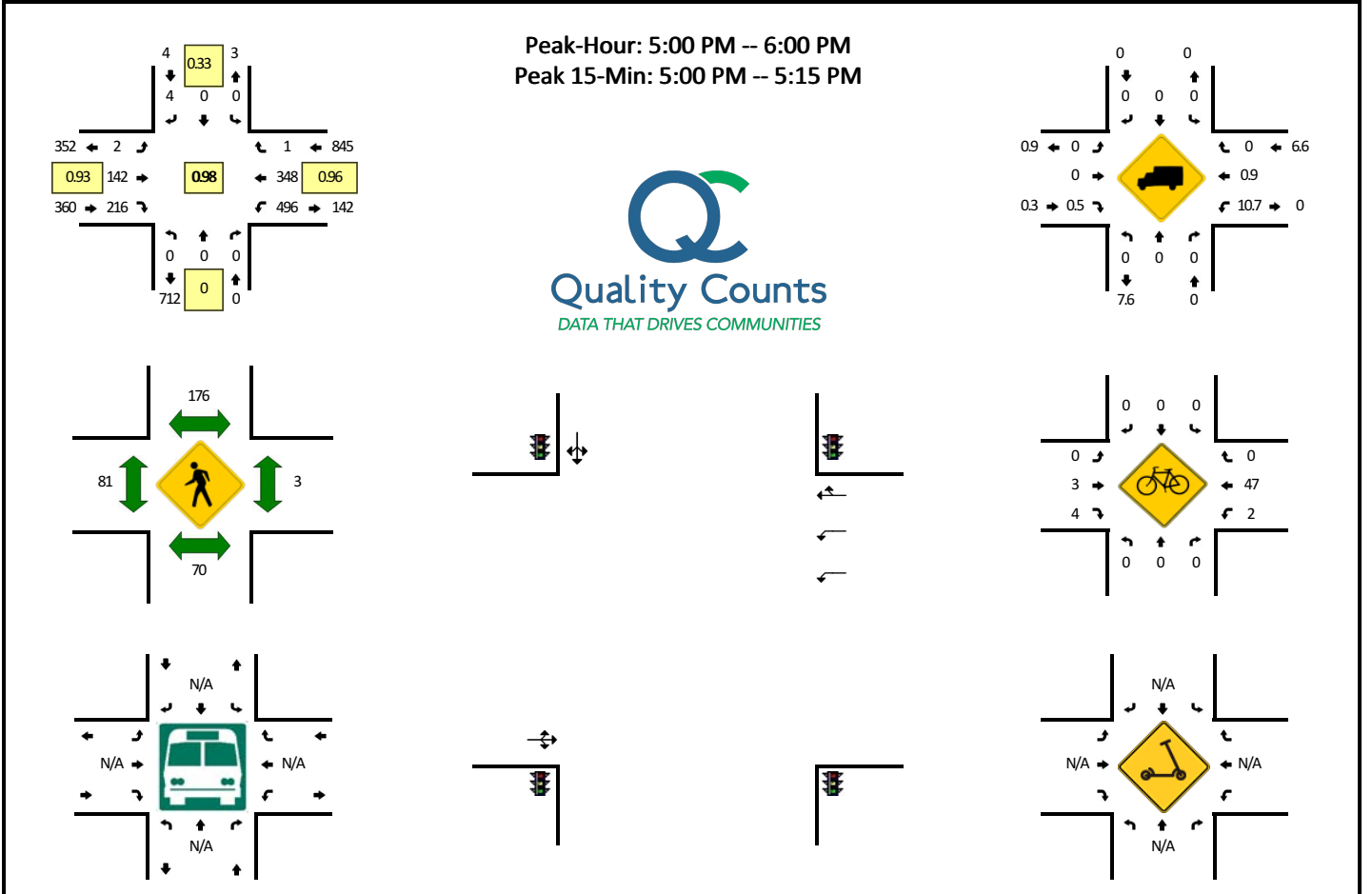
15-Min Count Period Beginning At	Pittsboro St (Northbound)				Pittsboro St (Southbound)				Cameron Ave (Eastbound)				Cameron Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	0	0	0	0	0	0	0	0	0	15	30	0	75	41	0	0	161	
11:45 AM	0	0	0	0	0	0	0	0	0	19	31	0	104	46	1	0	201	
12:00 PM	0	0	0	0	0	0	0	0	0	20	29	0	111	37	0	0	197	
12:15 PM	0	0	0	0	0	0	0	0	0	16	56	0	107	63	0	0	242	801
12:30 PM	0	0	0	0	0	0	0	0	0	19	33	0	97	63	0	0	212	852
12:45 PM	0	0	0	0	0	0	0	0	0	19	31	0	95	34	0	0	179	830
1:00 PM	0	0	0	0	0	0	0	0	0	15	35	0	82	40	0	0	172	805
1:15 PM	0	0	0	0	0	0	0	0	0	15	32	0	111	49	0	0	207	770

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	64	224	0	428	252	0	0	968
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	8	0	36	8	0	0	56
Buses																	
Pedestrians		296				448				184				0			928
Bicycles	0	0	0		0	0	4		0	48	12		8	64	0		136
Scoters																	

Comments:

LOCATION: Pittsboro St -- Cameron Ave
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192527
DATE: Wed, Feb 19 2020



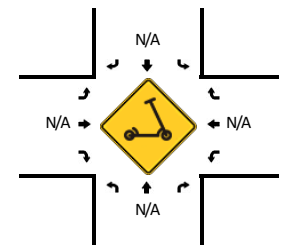
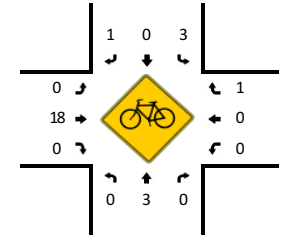
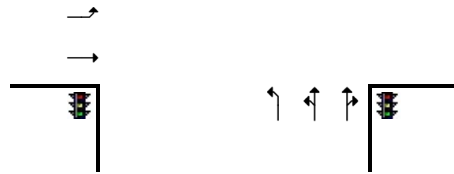
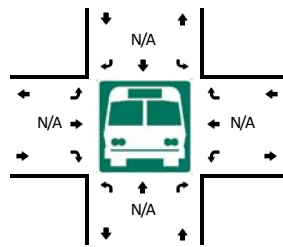
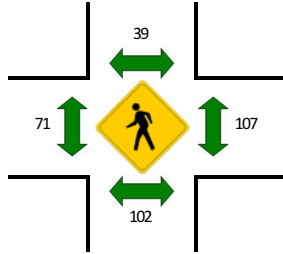
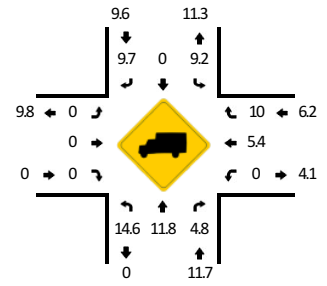
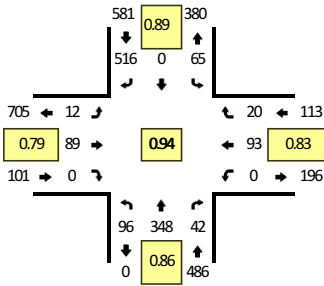
15-Min Count Period Beginning At	Pittsboro St (Northbound)				Pittsboro St (Southbound)				Cameron Ave (Eastbound)				Cameron Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	20	33	0	92	63	0	0	208	
4:15 PM	0	0	0	0	0	0	0	0	1	19	39	0	90	51	0	0	200	
4:30 PM	0	0	0	0	0	0	1	0	1	25	39	0	119	52	0	0	237	
4:45 PM	0	0	0	0	0	0	0	0	1	31	45	0	110	65	0	0	252	897
5:00 PM	0	0	0	0	0	0	1	0	1	39	57	0	120	91	0	0	309	998
5:15 PM	0	0	0	0	0	0	3	0	0	32	51	0	139	72	0	0	297	1095
5:30 PM	0	0	0	0	0	0	0	0	0	37	49	0	117	102	1	0	306	1164
5:45 PM	0	0	0	0	0	0	0	0	1	34	59	0	120	83	0	0	297	1209
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	0	0	0	0	0	4	0	4	156	228	0	480	364	0	0		1236
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	52	0	0	0	52	
Buses																		
Pedestrians		84				220				100				0			404	
Bicycles	0	0	0		0	0	0		0	4	0		0	76	0		80	
Scooters																		

Comments:

LOCATION: Columbia St -- Cameron Ave
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192528
DATE: Tue, Feb 25 2020

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



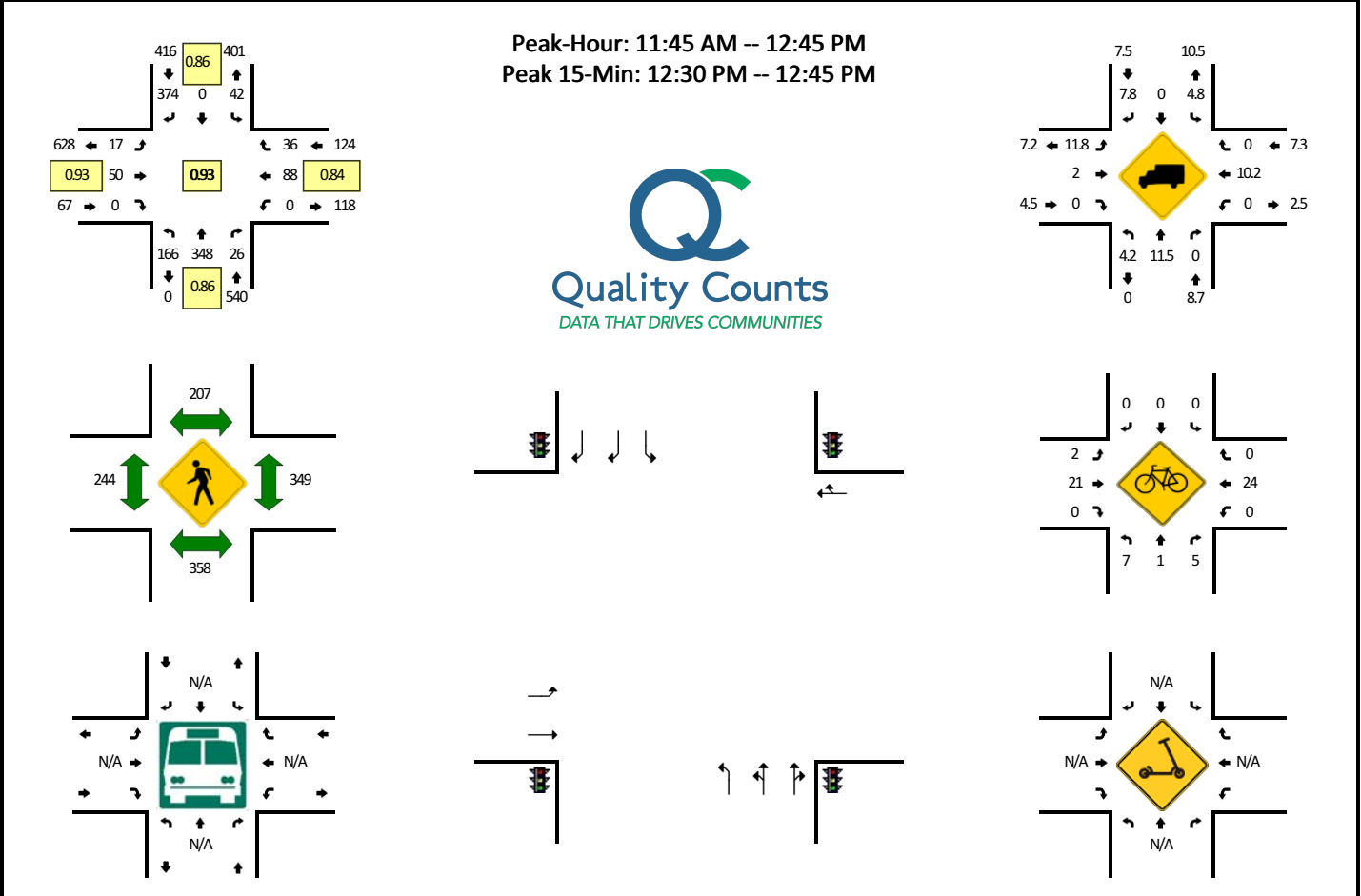
15-Min Count Period Beginning At	Columbia St (Northbound)				Columbia St (Southbound)				Cameron Ave (Eastbound)				Cameron Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	32	70	4	0	5	0	80	0	0	10	0	0	0	22	4	0	227	
7:15 AM	21	76	5	0	2	0	99	0	1	18	0	0	0	13	3	0	238	
7:30 AM	19	92	9	0	13	0	143	0	3	19	0	0	0	11	7	0	316	
7:45 AM	26	75	13	0	22	0	142	0	2	30	0	0	0	28	3	0	341	1122
8:00 AM	26	80	4	0	15	0	120	0	4	20	0	0	0	30	4	0	303	1198
8:15 AM	25	101	16	0	15	0	111	0	3	20	0	0	0	24	6	0	321	1281
8:30 AM	25	72	7	0	15	0	117	0	8	25	0	0	0	29	9	0	307	1272
8:45 AM	27	98	8	0	12	0	105	0	3	11	0	0	0	27	7	0	298	1229
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	104	300	52	0	88	0	568	0	8	120	0	0	0	112	12	0	1364	
Heavy Trucks	16	44	4		4	0	48		0	0	0		0	12	0		128	
Buses		260				80				180				184			704	
Pedestrians	0	4	0		8	0	0		0	0	0		0	0	0		12	
Bicycles																		
Scoters																		

Comments:

LOCATION: Columbia St -- Cameron Ave
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192529
DATE: Tue, Feb 25 2020

Peak-Hour: 11:45 AM -- 12:45 PM
Peak 15-Min: 12:30 PM -- 12:45 PM



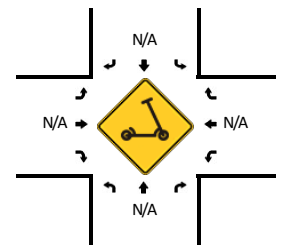
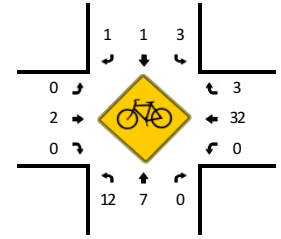
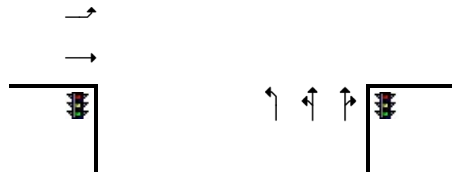
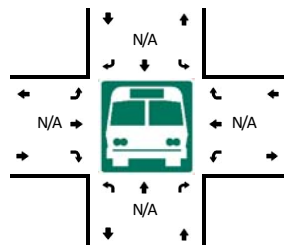
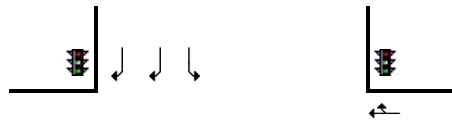
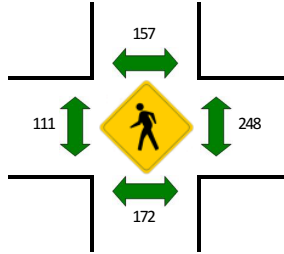
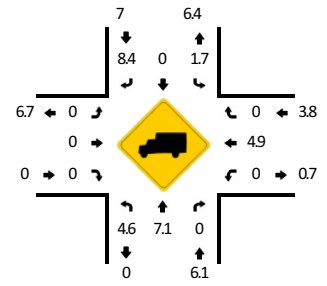
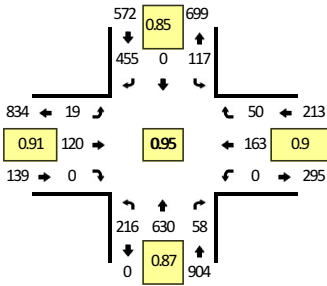
15-Min Count Period Beginning At	Columbia St (Northbound)				Columbia St (Southbound)				Cameron Ave (Eastbound)				Cameron Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	39	98	9	0	8	0	57	0	1	12	0	0	0	21	7	0	252	
11:45 AM	42	74	4	0	7	0	90	0	4	12	0	0	0	23	9	0	265	
12:00 PM	31	89	7	0	9	0	93	0	7	10	0	0	0	18	4	0	268	
12:15 PM	47	81	8	0	16	0	105	0	4	12	0	0	0	20	13	0	306	1091
12:30 PM	46	104	7	0	10	0	86	0	2	16	0	0	0	27	10	0	308	1147
12:45 PM	26	83	7	0	12	0	85	0	6	16	0	0	0	19	6	0	260	1142
1:00 PM	22	86	4	0	9	0	80	0	2	11	0	0	0	23	7	0	244	1118
1:15 PM	29	75	12	0	7	0	109	0	5	13	0	0	0	15	8	0	273	1085
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	184	416	28	0	40	0	344	0	8	64	0	0	0	108	40	0	1232	
Heavy Trucks	4	48	0		4	0	32		0	0	0		0	12	0		100	
Buses																		
Pedestrians		148				112				96				160			516	
Bicycles	0	4	8		0	0	0		4	24	0		0	20	0		60	
Scoters																		

Comments:

LOCATION: Columbia St -- Cameron Ave
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192530
DATE: Wed, Feb 19 2020

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



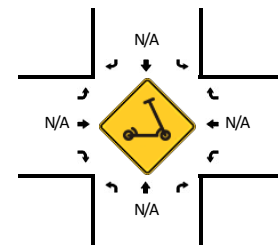
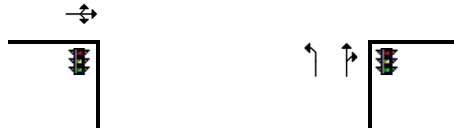
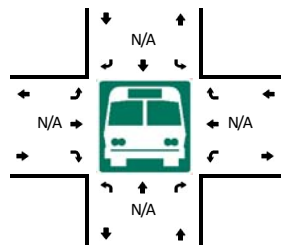
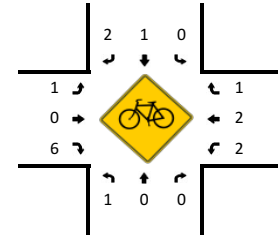
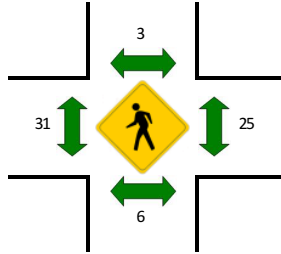
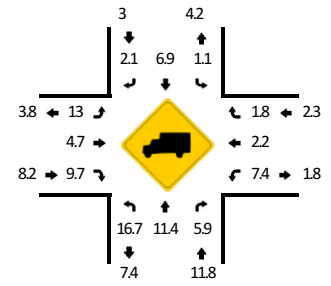
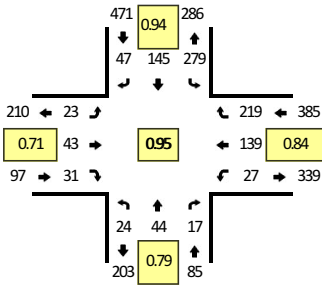
15-Min Count Period Beginning At	Columbia St (Northbound)				Columbia St (Southbound)				Cameron Ave (Eastbound)				Cameron Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	37	129	7	0	13	0	78	0	4	14	0	0	0	42	10	0	334	
4:15 PM	31	141	5	0	8	0	77	0	5	15	0	0	0	31	13	0	326	
4:30 PM	31	129	7	0	18	0	100	0	4	20	0	0	0	35	20	0	364	
4:45 PM	44	132	8	0	21	0	113	0	4	25	0	0	0	27	5	0	379	1403
5:00 PM	62	159	17	0	30	0	98	0	6	32	0	0	0	43	8	0	455	1524
5:15 PM	34	142	22	0	26	0	142	0	0	30	0	0	0	41	18	0	455	1653
5:30 PM	66	186	8	0	29	0	106	0	9	26	0	0	0	40	9	0	479	1768
5:45 PM	54	143	11	0	32	0	109	0	4	32	0	0	0	39	15	0	439	1828
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	264	744	32	0	116	0	424	0	36	104	0	0	0	160	36	0	1916	
Heavy Trucks	12	40	0		4	0	48		0	0	0		0	12	0		116	
Buses																		
Pedestrians		132				136				80				224			572	
Bicycles	16	4	0		4	0	4		0	8	0		0	24	0		60	
Scoters																		

Comments:

LOCATION: Raleigh St -- Cameron Ave/Country Club Rd
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192531
DATE: Tue, Feb 25 2020

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



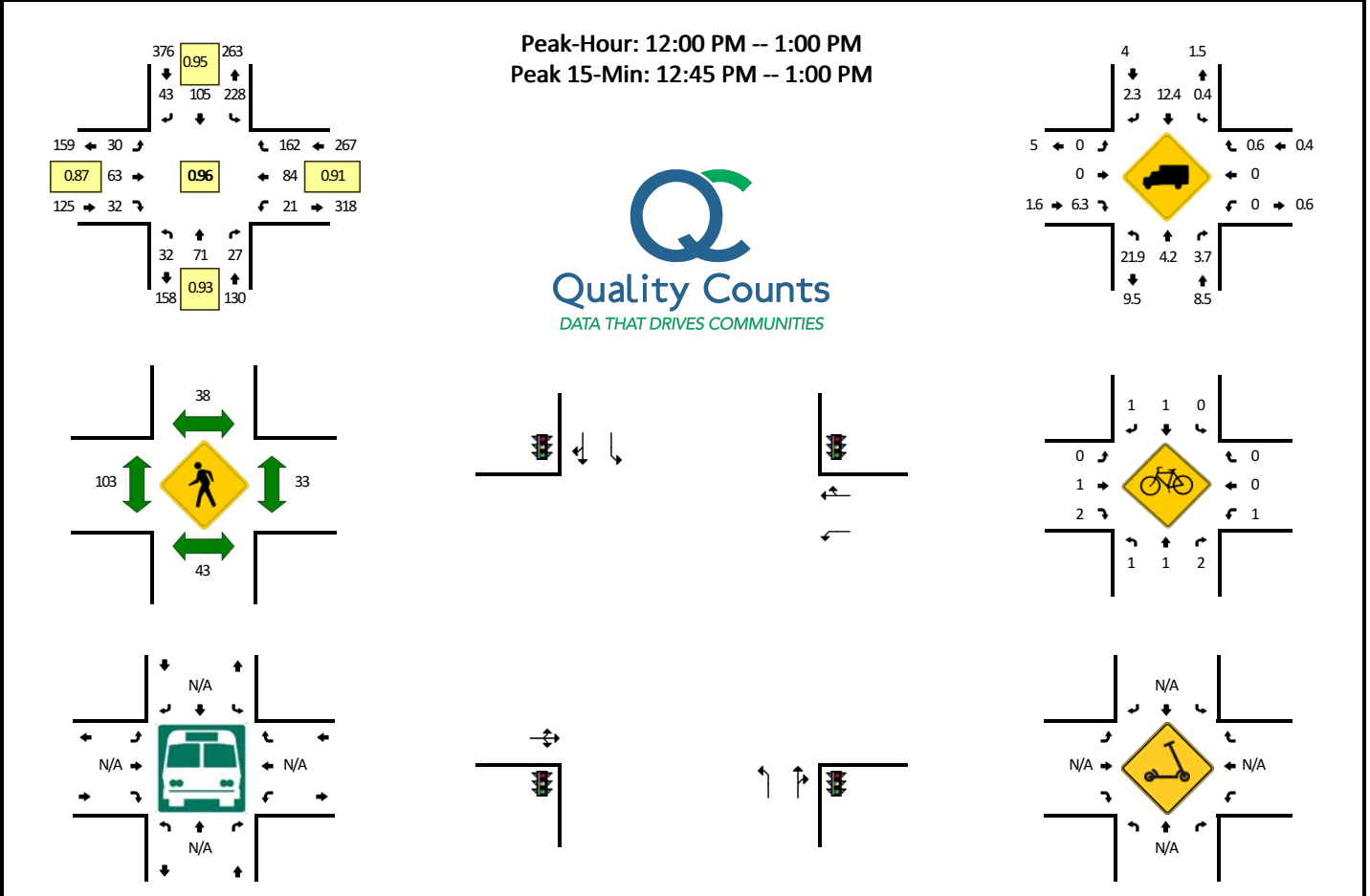
15-Min Count Period Beginning At	Raleigh St (Northbound)				Raleigh St (Southbound)				Cameron Ave/Country Club Rd (Eastbound)				Cameron Ave/Country Club Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	19	5	0	31	23	2	0	3	13	6	0	3	9	29	0	148	
7:15 AM	1	8	4	0	53	26	6	0	4	7	3	0	4	12	24	0	152	
7:30 AM	4	8	6	0	73	38	5	0	2	17	5	0	8	23	37	0	226	
7:45 AM	6	11	4	0	63	44	18	0	7	20	7	0	10	29	49	0	268	794
8:00 AM	8	11	5	0	73	40	12	0	5	12	9	0	7	30	42	0	254	900
8:15 AM	7	11	1	0	68	31	11	0	7	6	7	0	7	29	62	0	247	995
8:30 AM	3	9	3	0	75	36	10	0	6	20	8	0	6	36	51	0	263	1032
8:45 AM	6	13	8	0	63	38	14	0	5	5	7	0	7	44	64	0	274	1038

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	52	32	0	252	152	56	0	20	20	28	0	28	176	256	0	1096
Heavy Trucks	4	0	4		0	12	0		0	0	4		0	0	4		28
Buses																	
Pedestrians		4				8				48				36			96
Bicycles	0	0	0		0	0	4		4	0	4		0	0	0		12
Scooters																	

Comments:

LOCATION: Raleigh St -- Cameron Ave/Country Club Rd
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192532
DATE: Tue, Feb 25 2020

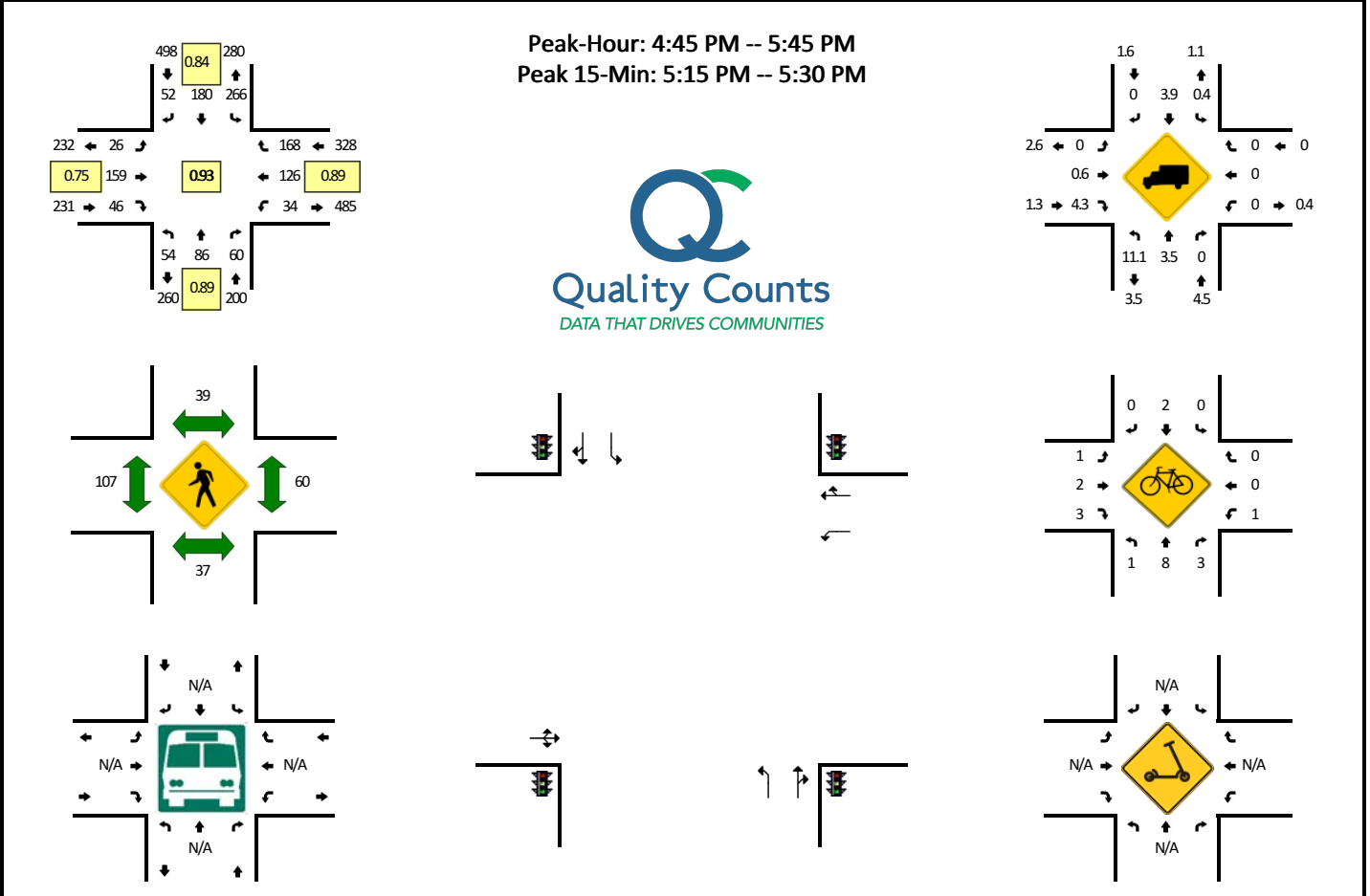


15-Min Count Period Beginning At	Raleigh St (Northbound)				Raleigh St (Southbound)				Cameron Ave/Country Club Rd (Eastbound)				Cameron Ave/Country Club Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	15	18	5	0	41	21	6	0	4	13	5	0	4	18	37	0	187	
11:45 AM	9	6	8	0	60	26	6	0	2	12	4	0	5	19	46	0	203	
12:00 PM	10	15	6	0	58	30	11	0	5	13	7	0	5	25	43	0	228	
12:15 PM	8	16	7	0	57	24	11	0	13	14	7	0	7	22	33	0	219	837
12:30 PM	7	20	6	0	61	17	10	0	8	16	12	0	6	17	37	0	217	867
12:45 PM	7	20	8	0	52	34	11	0	4	20	6	0	3	20	49	0	234	898
1:00 PM	4	16	5	0	51	26	10	0	1	16	7	0	3	17	45	0	201	871
1:15 PM	10	14	10	0	44	25	4	0	2	18	4	0	4	15	36	0	186	838
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	28	80	32	0	208	136	44	0	16	80	24	0	12	80	196	0	936	
Heavy Trucks	4	4	4		0	16	4		0	0	0		0	0	4		36	
Buses																		
Pedestrians		8				44				92				32			176	
Bicycles	0	0	4		0	0	0		0	0	4		4	0	0		12	
Scoters																		

Comments:

LOCATION: Raleigh St -- Cameron Ave/Country Club Rd
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192533
DATE: Wed, Feb 19 2020



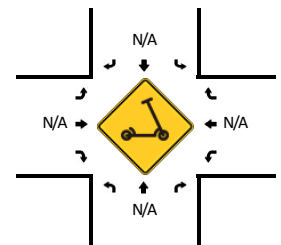
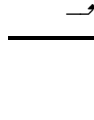
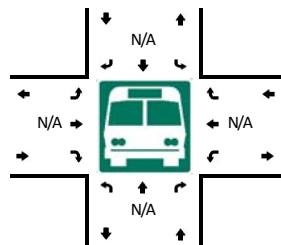
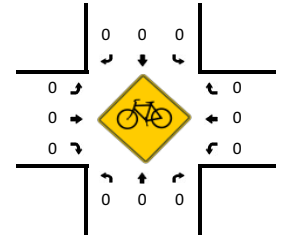
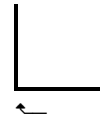
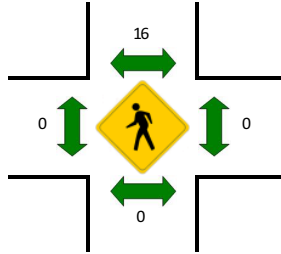
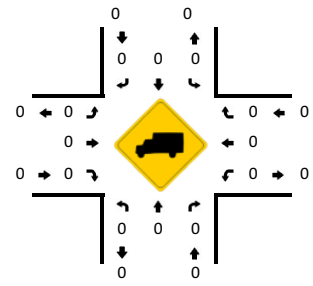
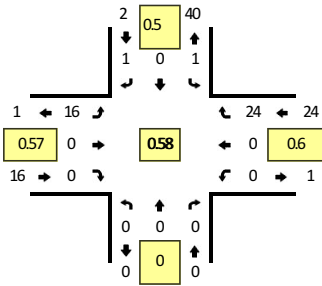
15-Min Count Period Beginning At	Raleigh St (Northbound)				Raleigh St (Southbound)				Cameron Ave/Country Club Rd (Eastbound)				Cameron Ave/Country Club Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	19	19	14	0	62	24	8	0	2	29	11	0	4	24	39	0	255	
4:15 PM	12	23	12	0	59	22	7	0	3	24	5	0	6	31	48	0	252	
4:30 PM	14	23	14	0	63	32	9	0	7	22	5	0	6	24	41	0	260	
4:45 PM	13	18	13	0	61	42	13	0	8	29	6	0	7	27	47	0	284	1051
5:00 PM	12	23	16	0	61	47	12	0	8	46	23	0	6	30	37	0	321	1117
5:15 PM	11	17	21	0	84	49	15	0	6	45	8	0	14	27	41	0	338	1203
5:30 PM	18	28	10	0	60	42	12	0	4	39	9	0	7	42	43	0	314	1257
5:45 PM	15	12	17	0	46	50	15	0	9	27	5	0	9	26	47	0	278	1251
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	44	68	84	0	336	196	60	0	24	180	32	0	56	108	164	0	1352	
Heavy Trucks	8	4	0		0	8	0		0	0	0		0	0	0		20	
Buses																		
Pedestrians		24				40				84				44			192	
Bicycles	4	16	0		0	4	0		0	4	0		0	0	0		28	
Scoters																		

Comments:

LOCATION: Western Parking Deck -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192534
DATE: Tue, Feb 25 2020

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



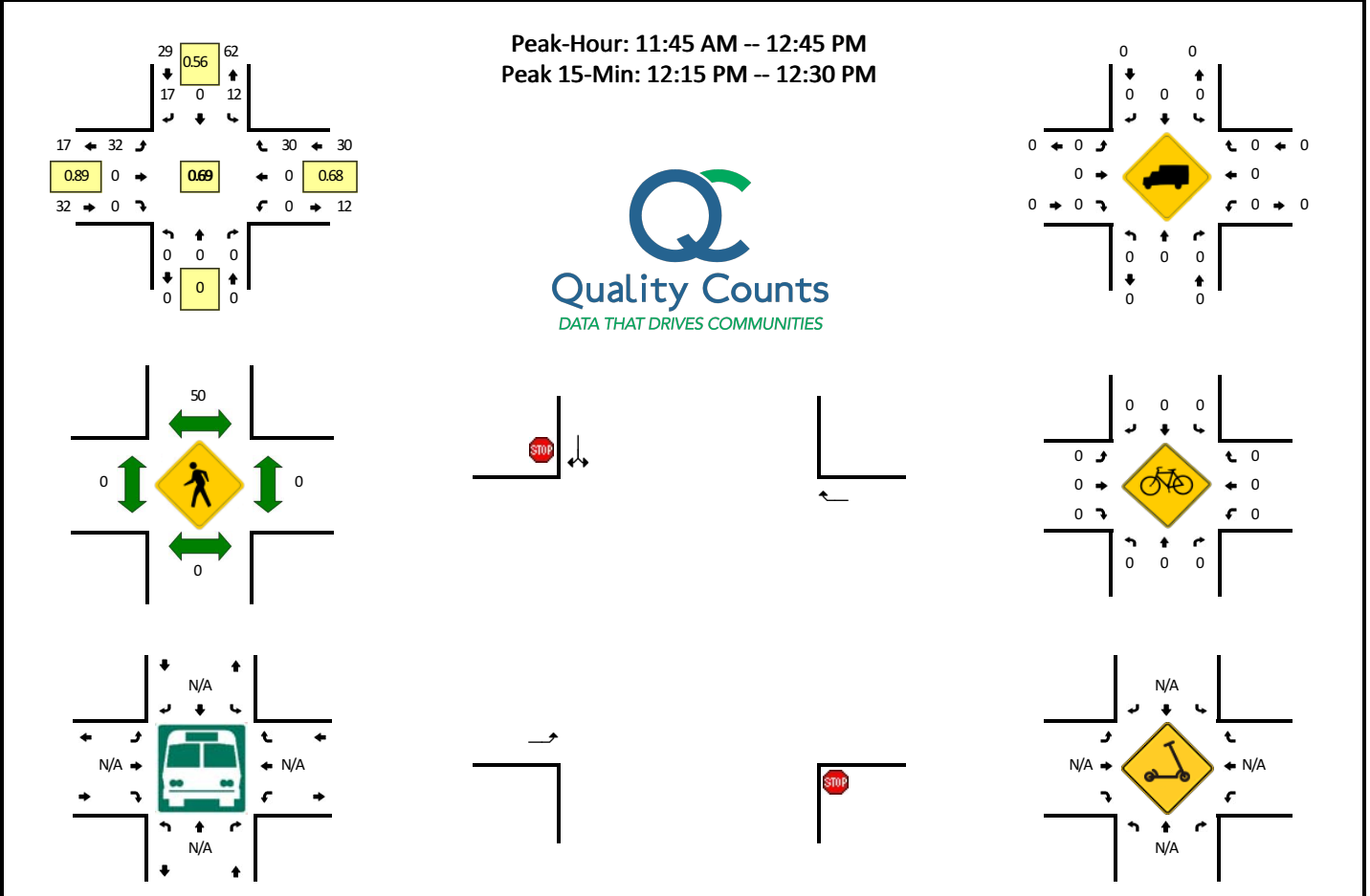
15-Min Count Period Beginning At	Western Parking Deck (Northbound)				Western Parking Deck (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	3	
7:30 AM	0	0	0	0	1	0	1	0	2	0	0	0	0	0	2	0	6	
7:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0	7	16
8:00 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	6	22
8:15 AM	0	0	0	0	1	0	0	0	4	0	0	0	0	0	5	0	10	29
8:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	6	0	8	31
8:45 AM	0	0	0	0	0	0	1	0	7	0	0	0	0	0	10	0	18	42

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	4	0	28	0	0	0	0	0	40	0	72
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses																	
Pedestrians		0				12				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	0

Comments:

LOCATION: Western Parking Deck -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192535
DATE: Tue, Feb 25 2020



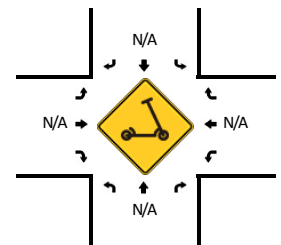
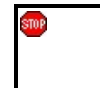
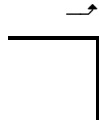
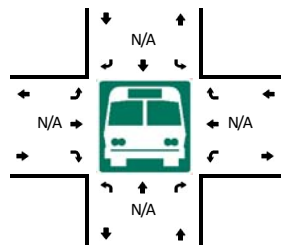
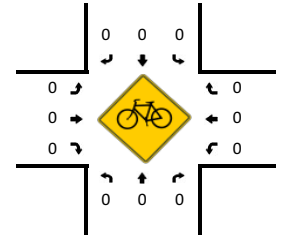
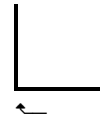
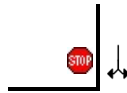
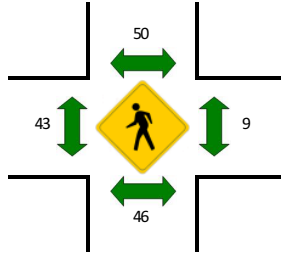
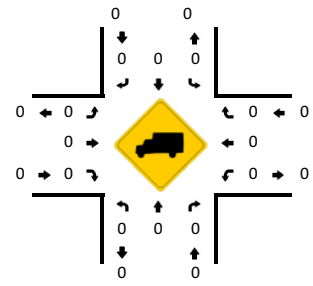
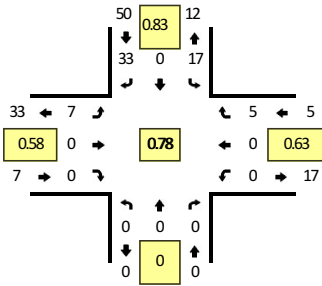
15-Min Count Period Beginning At	Western Parking Deck (Northbound)				Western Parking Deck (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	0	0	0	0	1	0	2	0	6	0	0	0	0	0	7	0	16	
11:45 AM	0	0	0	0	3	0	2	0	9	0	0	0	0	0	6	0	20	
12:00 PM	0	0	0	0	2	0	1	0	8	0	0	0	0	0	7	0	18	
12:15 PM	0	0	0	0	5	0	8	0	9	0	0	0	0	0	11	0	33	87
12:30 PM	0	0	0	0	2	0	6	0	6	0	0	0	0	0	6	0	20	91
12:45 PM	0	0	0	0	0	0	4	0	5	0	0	0	0	0	6	0	15	86
1:00 PM	0	0	0	0	3	0	5	0	4	0	0	0	0	0	8	0	20	88
1:15 PM	0	0	0	0	1	0	5	0	1	0	0	0	0	0	5	0	12	67
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	20	0	32	0	36	0	0	0	0	0	44	0	132	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		0				52				0				0			52	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Western Parking Deck -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192536
DATE: Wed, Feb 19 2020

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



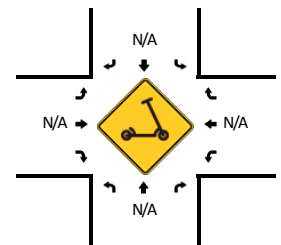
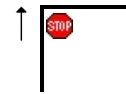
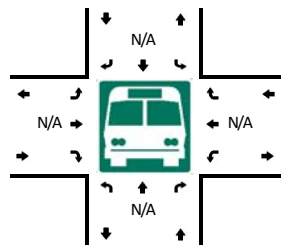
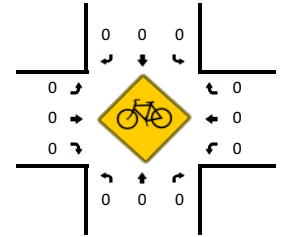
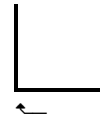
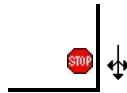
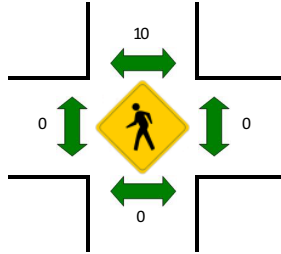
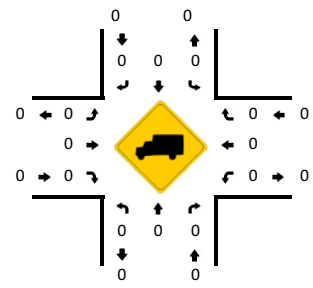
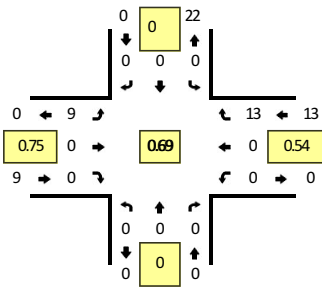
15-Min Count Period Beginning At	Western Parking Deck (Northbound)				Western Parking Deck (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	0	8	0	0	0	0	0	0	0	1	0	11	
4:15 PM	0	0	0	0	1	0	6	0	1	0	0	0	0	0	0	0	8	
4:30 PM	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	10	
4:45 PM	0	0	0	0	4	0	5	0	1	0	0	0	0	0	1	0	11	40
5:00 PM	0	0	0	0	7	0	8	0	3	0	0	0	0	0	2	0	20	49
5:15 PM	0	0	0	0	3	0	12	0	2	0	0	0	0	0	1	0	18	59
5:30 PM	0	0	0	0	3	0	8	0	1	0	0	0	0	0	1	0	13	62
5:45 PM	0	0	0	0	4	0	2	0	1	0	0	0	0	0	0	0	7	58
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	28	0	32	0	12	0	0	0	0	0	8	0	80	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		36				60				60				4			160	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: Surface Lot -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192537
DATE: Tue, Feb 25 2020

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



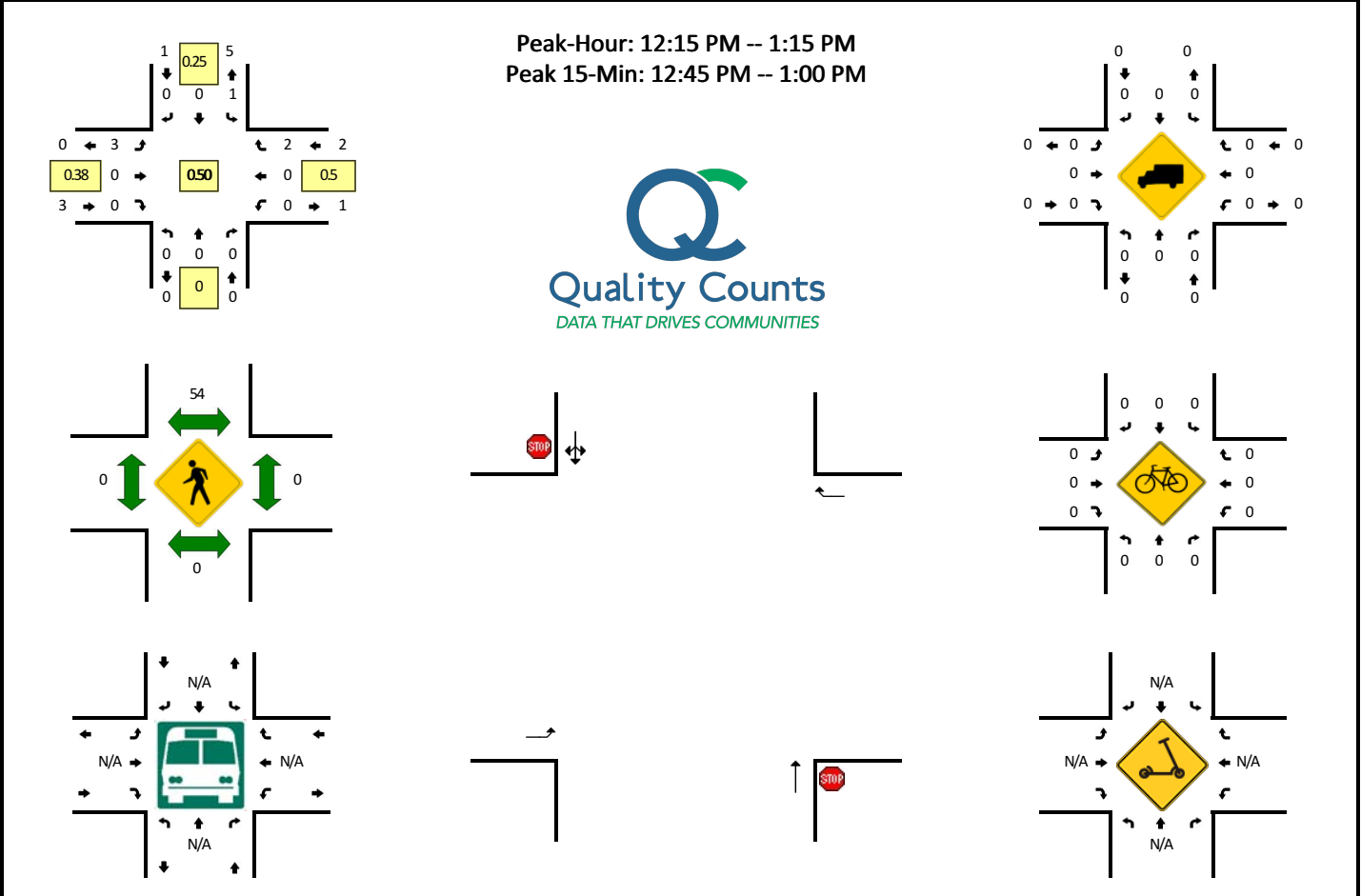
15-Min Count Period Beginning At	Surface Lot (Northbound)				Surface Lot (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	0	5	
7:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	4	11
8:00 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	5	16
8:15 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	6	0	8	22
8:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	3	20
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	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	0	0	0	0	0	0	8	0	0	0	0	0	24	0	32	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		0				24				0				0			24	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Surface Lot -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192538
DATE: Tue, Feb 25 2020

Peak-Hour: 12:15 PM -- 1:15 PM
 Peak 15-Min: 12:45 PM -- 1:00 PM



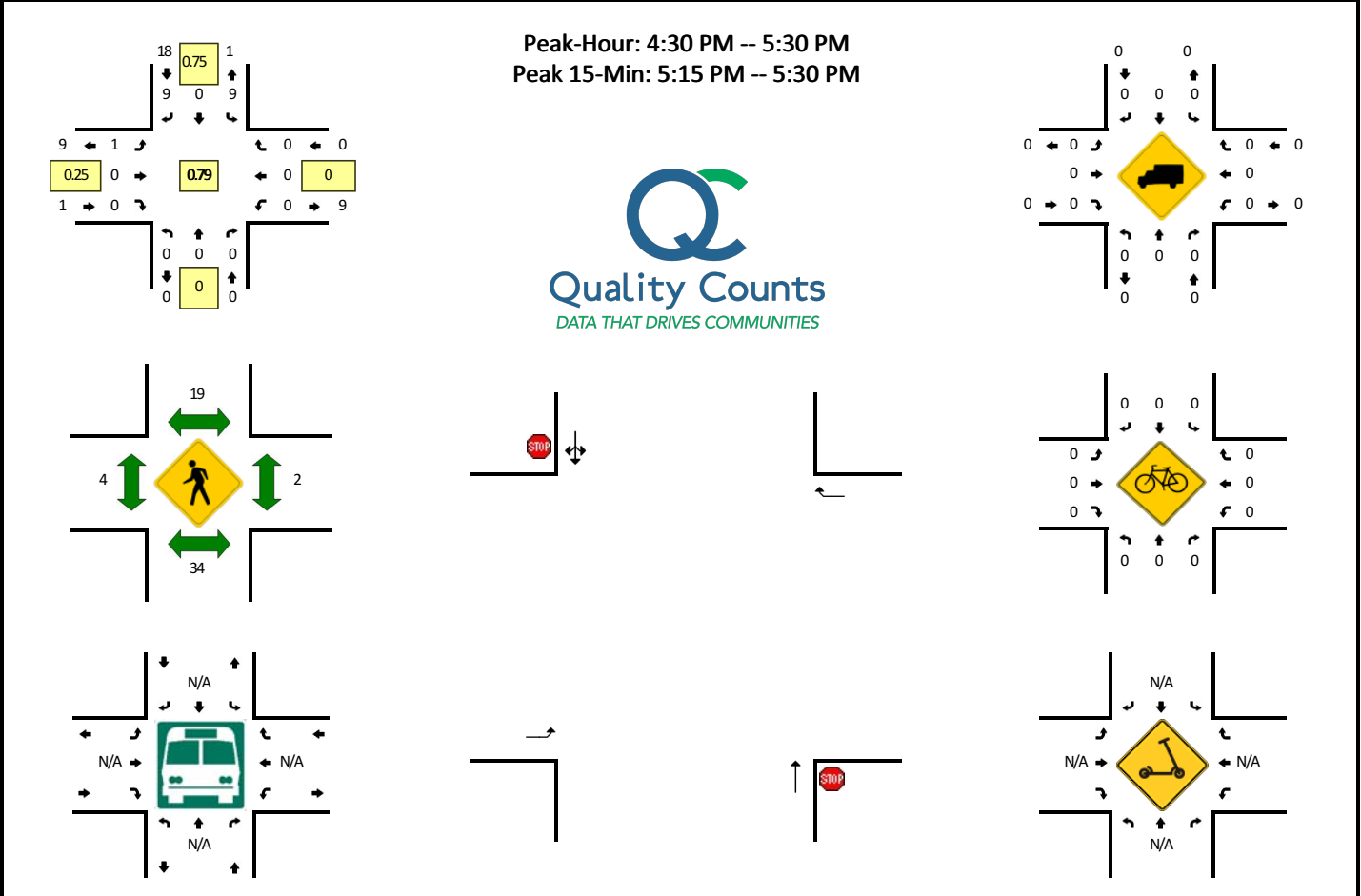
15-Min Count Period Beginning At	Surface Lot (Northbound)				Surface Lot (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3	
11:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
12:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	3
12:45 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	3	4
1:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	6
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
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	8	0	0	0	0	0	4	0	12	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		0				24				0				0			24	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Surface Lot -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192539
DATE: Wed, Feb 19 2020

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



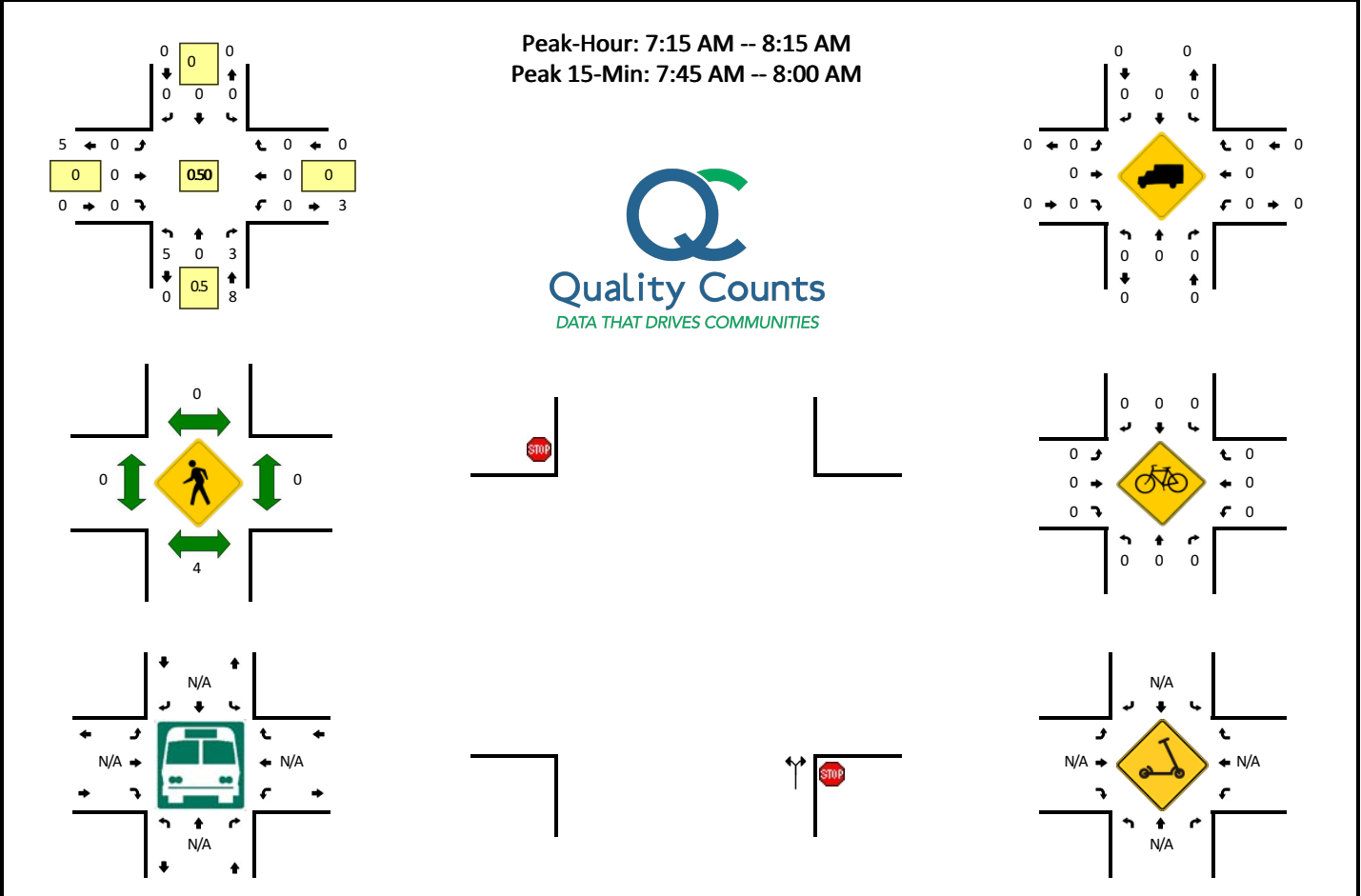
15-Min Count Period Beginning At	Surface Lot (Northbound)				Surface Lot (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0	5	
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
4:30 PM	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	4	
4:45 PM	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	4	14
5:00 PM	0	0	0	0	1	0	3	0	1	0	0	0	0	0	0	0	5	14
5:15 PM	0	0	0	0	4	0	2	0	0	0	0	0	0	0	0	0	6	19
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	18
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	15
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	16	0	8	0	0	0	0	0	0	0	0	0	24	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		48				24				0				8			80	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Western Wallace Parking Deck Exit -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192540
DATE: Tue, Feb 25 2020

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

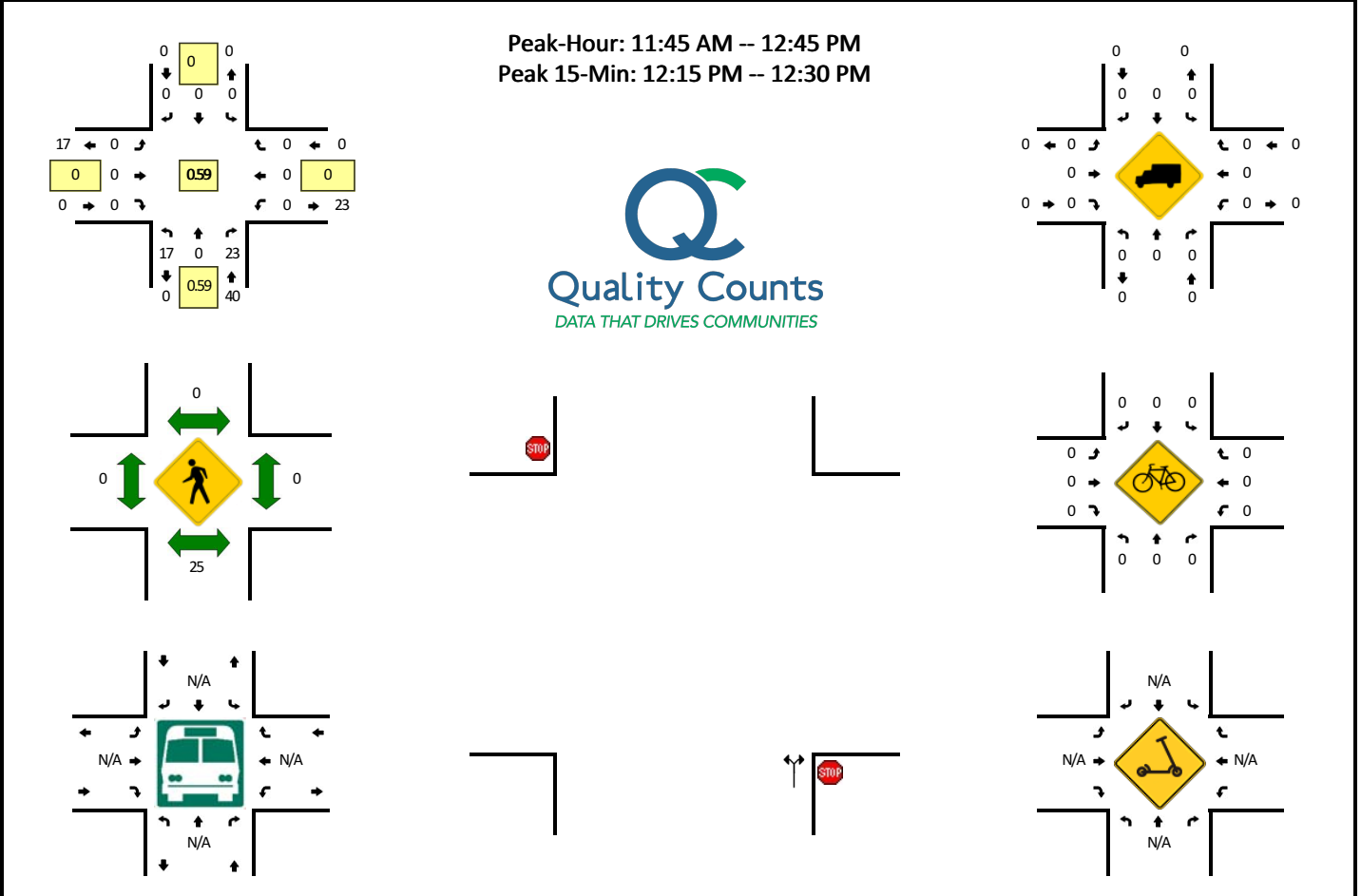


15-Min Count Period Beginning At	Western Wallace Parking Deck Exit (Northbound)				Western Wallace Parking Deck Exit (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:30 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
7:45 AM	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
8:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8:45 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	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	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	16	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																	0	

Comments:

LOCATION: Western Wallace Parking Deck Exit -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192541
DATE: Tue, Feb 25 2020

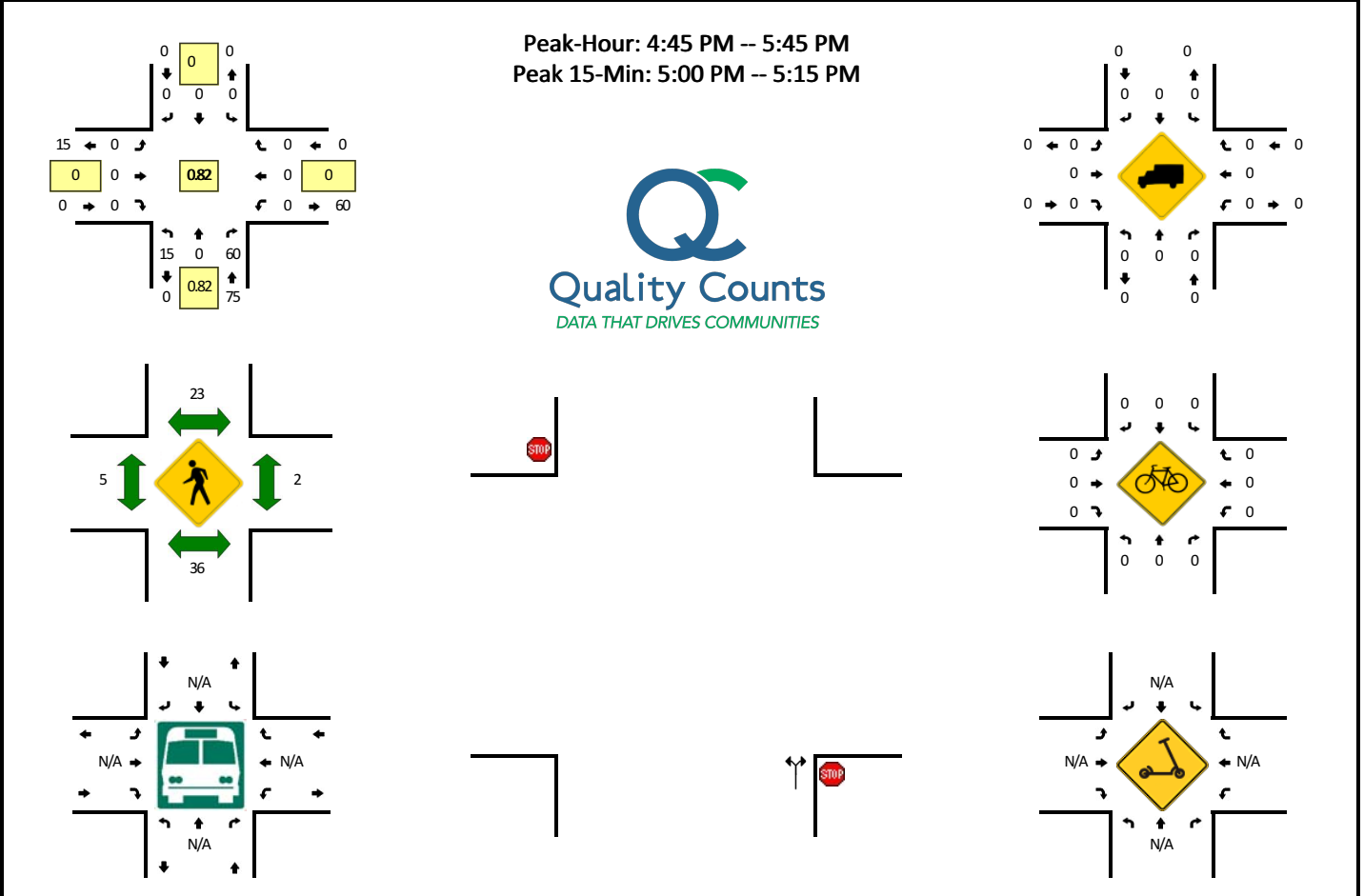


15-Min Count Period Beginning At	Western Wallace Parking Deck Exit (Northbound)				Western Wallace Parking Deck Exit (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
11:45 AM	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
12:00 PM	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
12:15 PM	7	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	17	35
12:30 PM	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	10	40
12:45 PM	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	39
1:00 PM	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	34
1:15 PM	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	21
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	28	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	68	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		36				0				0				0			36	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Western Wallace Parking Deck Exit -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192542
DATE: Wed, Feb 19 2020



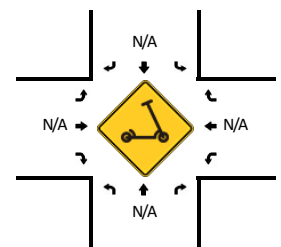
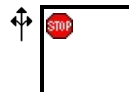
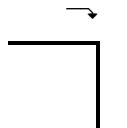
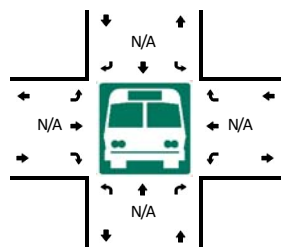
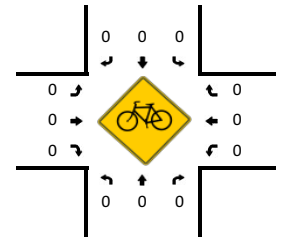
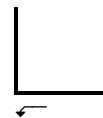
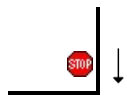
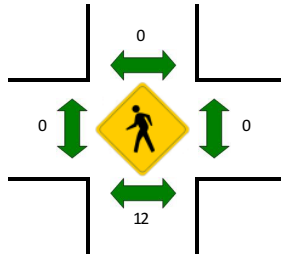
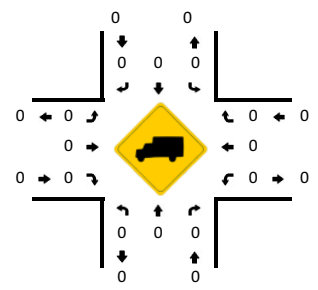
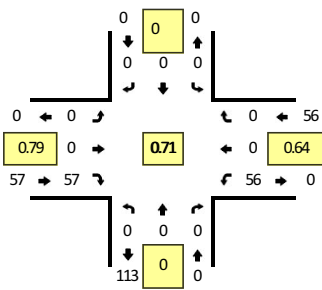
15-Min Count Period Beginning At	Western Wallace Parking Deck Exit (Northbound)				Western Wallace Parking Deck Exit (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
4:15 PM	7	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	18	
4:30 PM	1	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
4:45 PM	3	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	22	61
5:00 PM	5	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	23	73
5:15 PM	5	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	18	73
5:30 PM	2	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	12	75
5:45 PM	1	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	13	66
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	20	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0	92	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Buses																		
Pedestrians		28				28				4				0			60	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Western Alley -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192543
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Western Alley (Northbound)				Western Alley (Southbound)				Rosemary St (Eastbound)				Rosemary St (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	5	0	4	0	0	0	9	
7:15 AM	0	0	0	0	0	0	0	0	0	0	7	0	2	0	0	0	9	
7:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	4	0	0	0	10	
7:45 AM	0	0	0	0	0	0	0	0	0	0	14	0	13	0	0	0	27	55
8:00 AM	0	0	0	0	0	0	0	0	0	0	8	0	7	0	0	0	15	61
8:15 AM	0	0	0	0	0	0	0	0	0	0	14	0	15	0	0	0	29	81
8:30 AM	0	0	0	0	0	0	0	0	0	0	17	0	12	0	0	0	29	100
8:45 AM	0	0	0	0	0	0	0	0	0	0	18	0	22	0	0	0	40	113

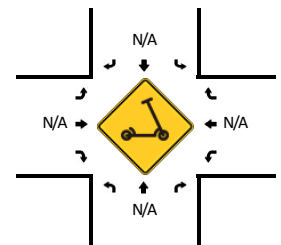
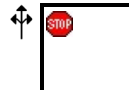
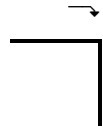
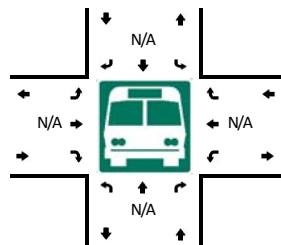
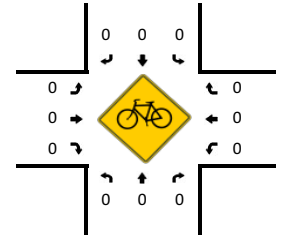
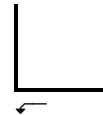
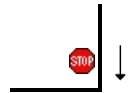
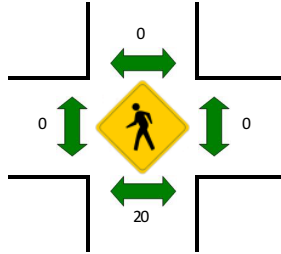
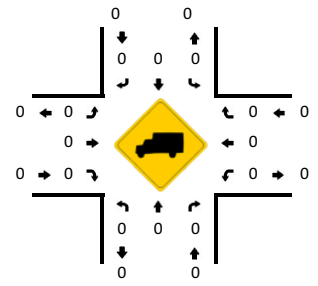
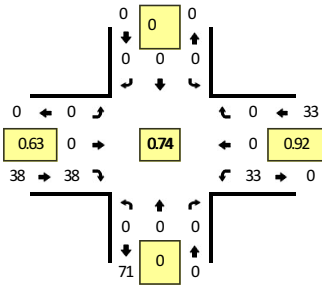
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	0	72	0	88	0	0	0	160
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses																	
Pedestrians		20				0				0				0			20
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

LOCATION: Western Alley -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192544
DATE: Tue, Feb 25 2020

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



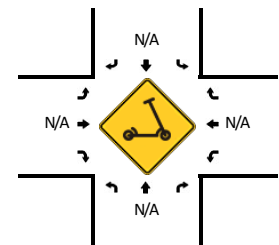
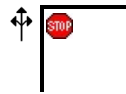
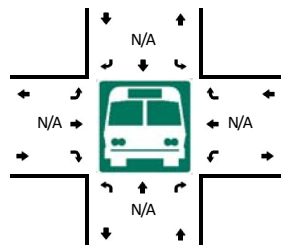
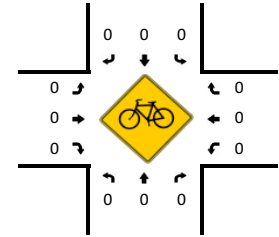
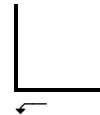
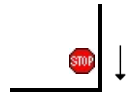
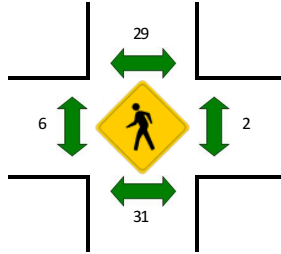
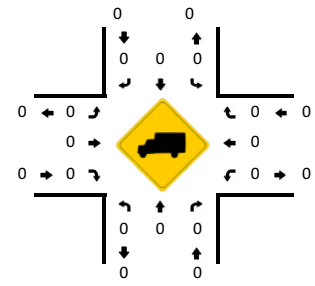
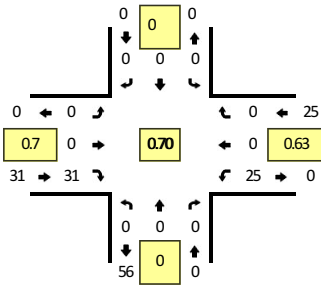
15-Min Count Period Beginning At	Western Alley (Northbound)				Western Alley (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	0	0	0	0	0	0	0	0	0	0	7	0	9	0	0	0	16	
11:45 AM	0	0	0	0	0	0	0	0	0	0	5	0	4	0	0	0	9	
12:00 PM	0	0	0	0	0	0	0	0	0	0	15	0	9	0	0	0	24	
12:15 PM	0	0	0	0	0	0	0	0	0	0	10	0	7	0	0	0	17	66
12:30 PM	0	0	0	0	0	0	0	0	0	0	7	0	9	0	0	0	16	66
12:45 PM	0	0	0	0	0	0	0	0	0	0	6	0	8	0	0	0	14	71
1:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	3	0	0	0	8	55
1:15 PM	0	0	0	0	0	0	0	0	0	0	7	0	9	0	0	0	16	54
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	60	0	36	0	0	0	96	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		4				0				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Western Alley -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192545
DATE: Wed, Feb 19 2020

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

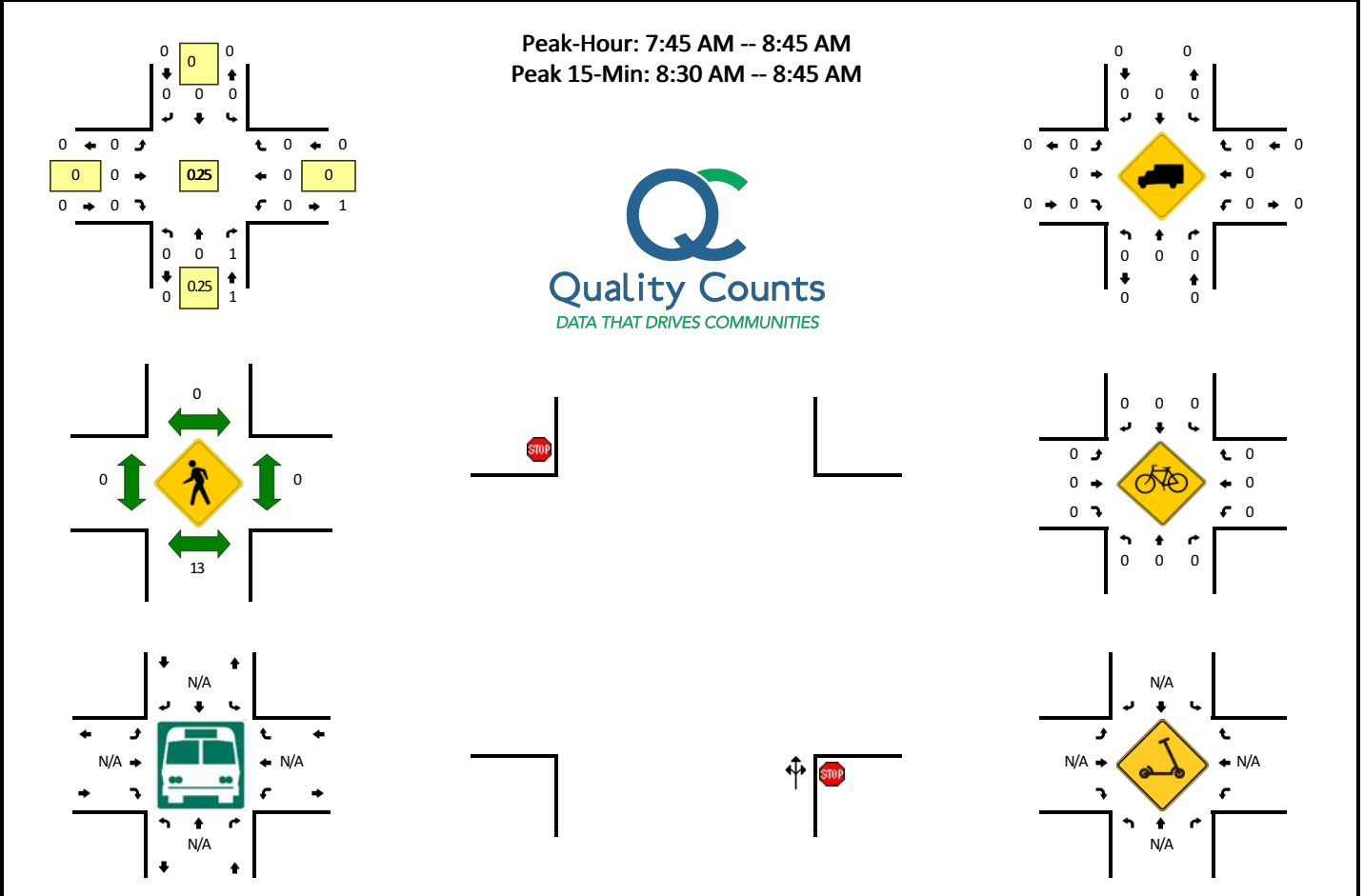


15-Min Count Period Beginning At	Western Alley (Northbound)				Western Alley (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	4	
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	5	
4:30 PM	0	0	0	0	0	0	0	0	0	0	8	0	6	0	0	0	14	
4:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	6	0	0	0	10	33
5:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	3	0	0	0	8	37
5:15 PM	0	0	0	0	0	0	0	0	0	0	7	0	3	0	0	0	10	42
5:30 PM	0	0	0	0	0	0	0	0	0	0	11	0	9	0	0	0	20	48
5:45 PM	0	0	0	0	0	0	0	0	0	0	8	0	10	0	0	0	18	56
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	44	0	36	0	0	0	80	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		36				24				12				0			72	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Eastern Wallace Parking Deck Exit -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192546
DATE: Tue, Feb 25 2020



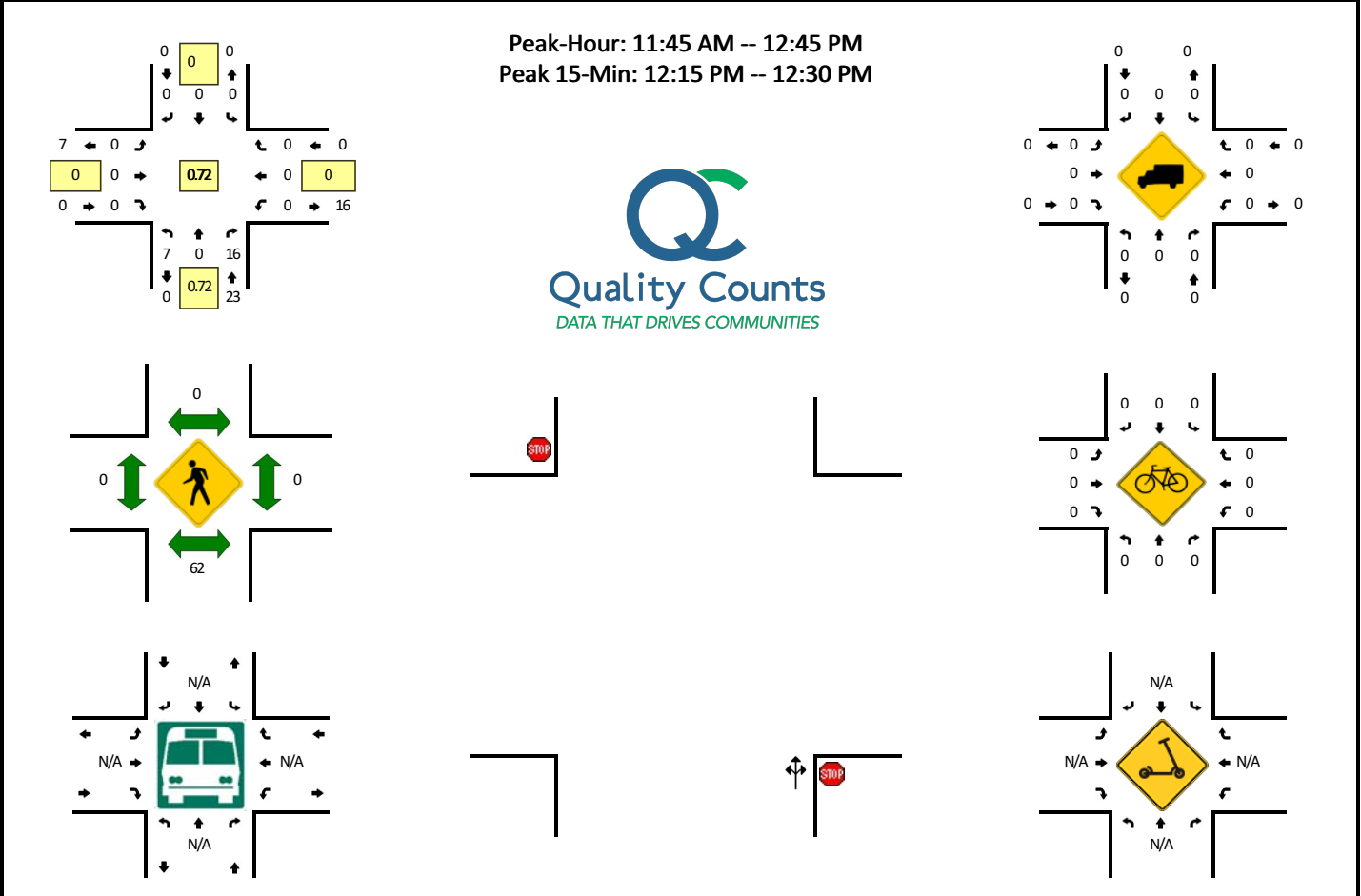
15-Min Count Period Beginning At	Eastern Wallace Parking Deck Exit (Northbound)				Eastern Wallace Parking Deck Exit (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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	0	0	0	0	0	0	0	0	0	0	0	0	4	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		12				0				0				0			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Eastern Wallace Parking Deck Exit -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192547
DATE: Tue, Feb 25 2020

Peak-Hour: 11:45 AM -- 12:45 PM
 Peak 15-Min: 12:15 PM -- 12:30 PM

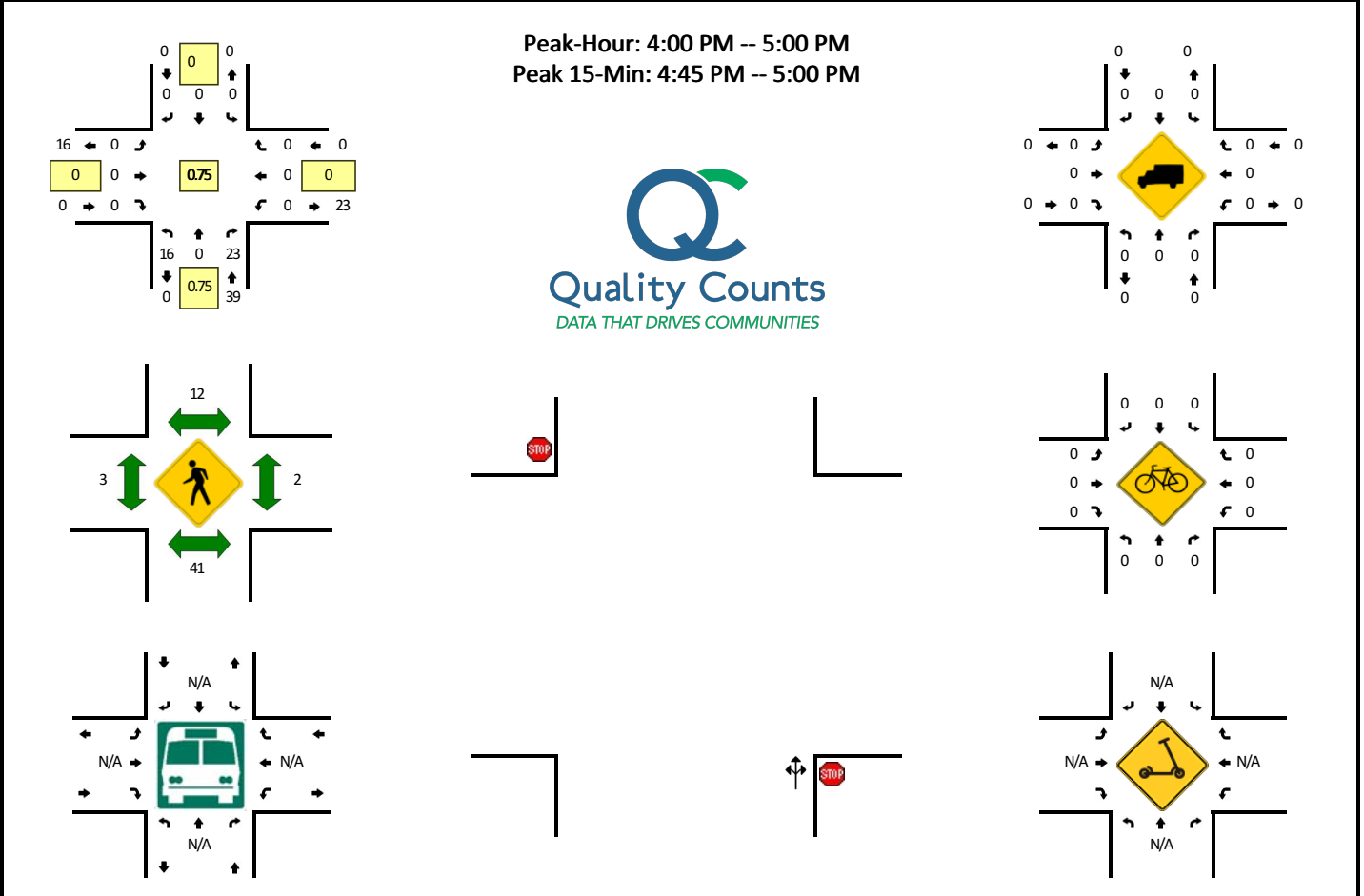


15-Min Count Period Beginning At	Eastern Wallace Parking Deck Exit (Northbound)				Eastern Wallace Parking Deck Exit (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
11:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
12:00 PM	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
12:15 PM	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	8	17
12:30 PM	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	8	23
12:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
1:15 PM	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	9	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	12	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	32	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Buses																		
Pedestrians		84				0				0				0			84	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Eastern Wallace Parking Deck Exit -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192548
DATE: Wed, Feb 19 2020



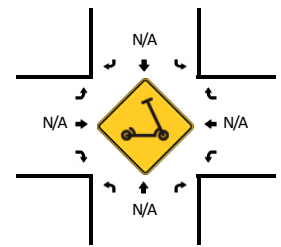
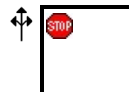
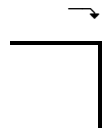
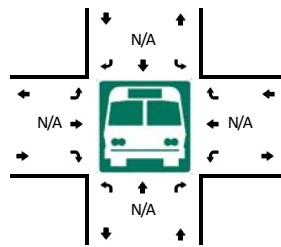
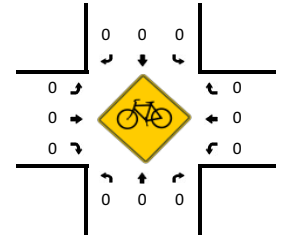
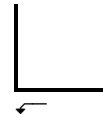
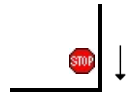
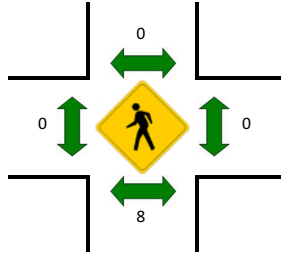
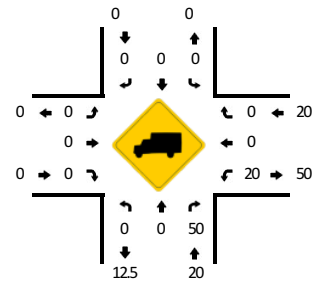
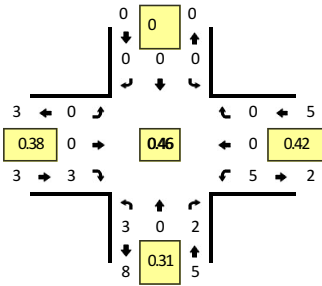
15-Min Count Period Beginning At	Eastern Wallace Parking Deck Exit (Northbound)				Eastern Wallace Parking Deck Exit (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
4:15 PM	5	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
4:30 PM	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	7	
4:45 PM	6	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	13	39
5:00 PM	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	33
5:15 PM	3	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	11	35
5:30 PM	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	33
5:45 PM	4	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	27
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	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	52	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		88				16				4				0			108	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Eastern Alley -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192549
DATE: Tue, Feb 25 2020

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



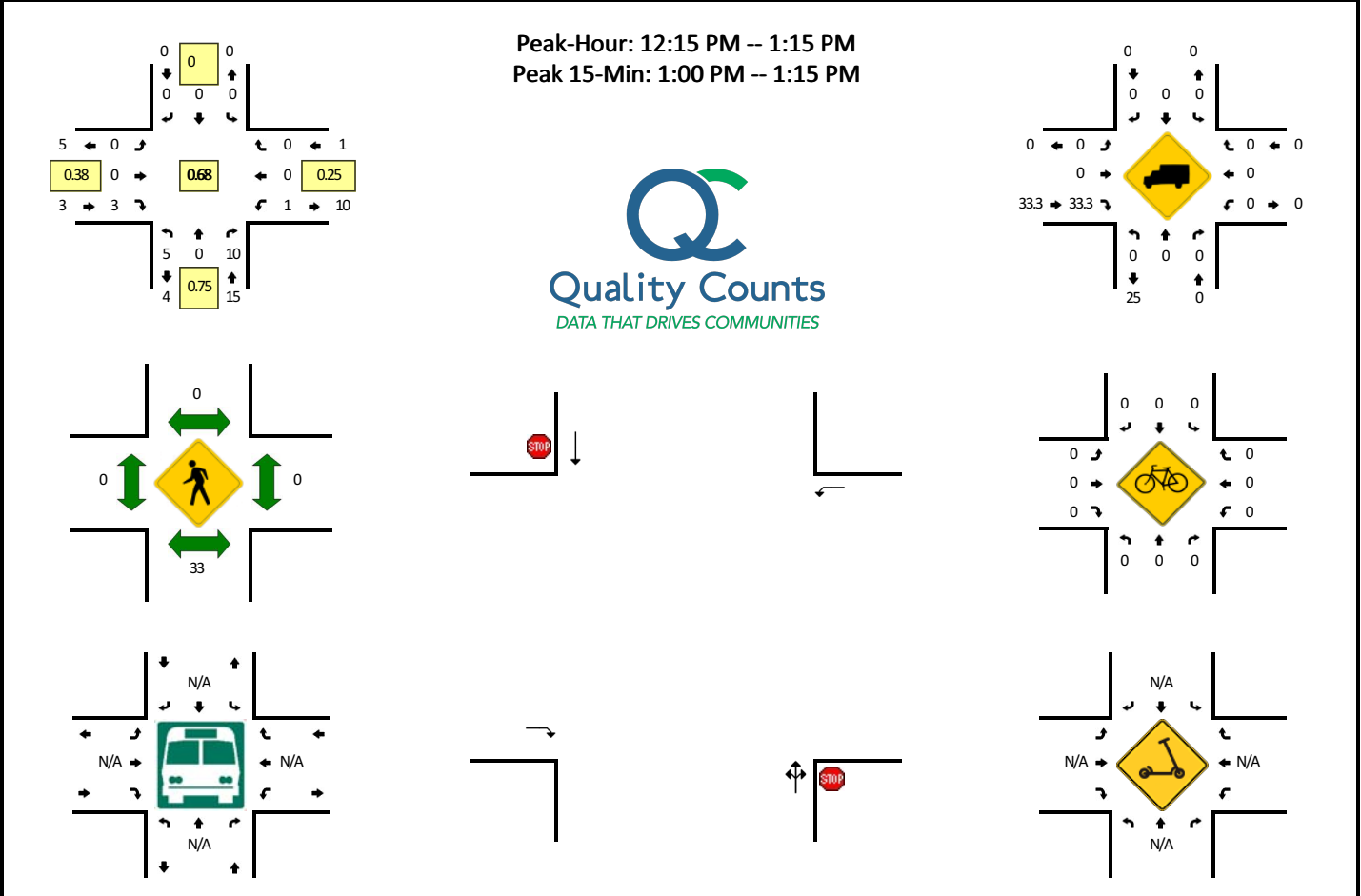
15-Min Count Period Beginning At	Eastern Alley (Northbound)				Eastern Alley (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	6
8:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	8
8:30 AM	2	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	7	13
8:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	12
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	0	8	0	0	0	0	0	0	0	0	0	12	0	0	0	28	
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4	
Buses																		
Pedestrians		8				0				0				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Eastern Alley -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192550
DATE: Tue, Feb 25 2020

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



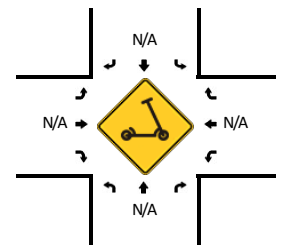
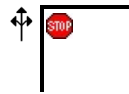
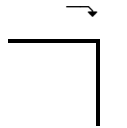
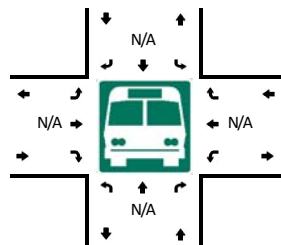
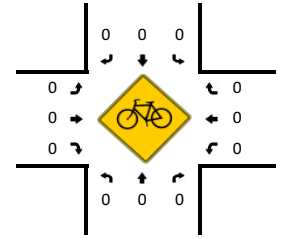
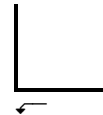
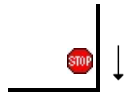
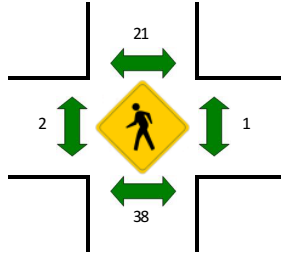
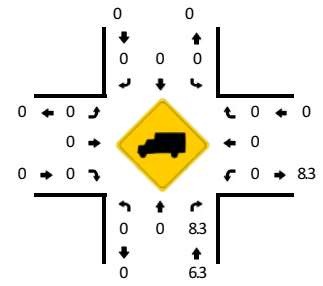
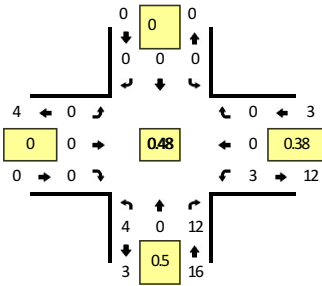
15-Min Count Period Beginning At	Eastern Alley (Northbound)				Eastern Alley (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
12:00 PM	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
12:15 PM	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	9
12:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
12:45 PM	2	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	6	16
1:00 PM	2	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	7	19
1:15 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17
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	0	12	0	0	0	0	0	0	0	4	0	4	0	0	0	28	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	
Buses																		
Pedestrians		56				0				0				0			56	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Eastern Alley -- Rosemary St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192551
DATE: Wed, Feb 19 2020

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



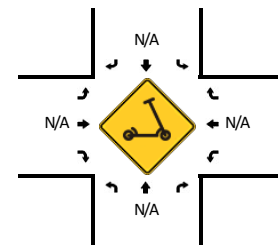
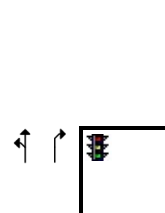
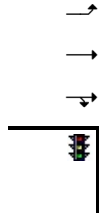
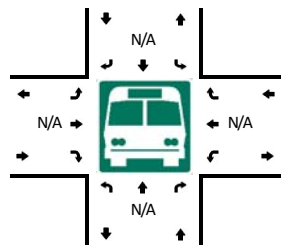
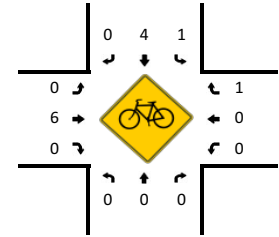
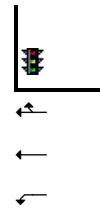
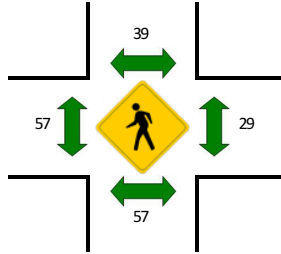
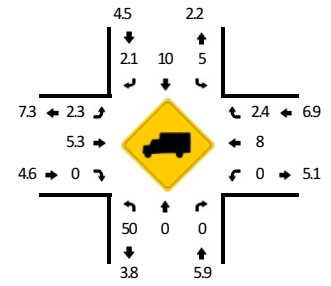
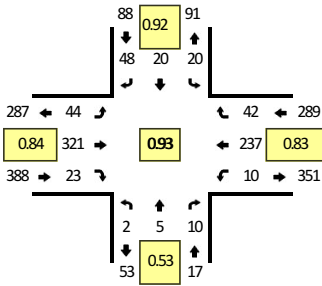
15-Min Count Period Beginning At	Eastern Alley (Northbound)				Eastern Alley (Southbound)				Rosemary St (Eastbound)				Rosemary St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	3	
4:15 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
4:30 PM	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3	
4:45 PM	3	0	5	0	0	0	0	0	0	0	0	0	2	0	0	0	10	18
5:00 PM	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	18
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18
5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	4	19
5:45 PM	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	12
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	12	0	20	0	0	0	0	0	0	0	0	0	8	0	0	0	40	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Buses																		
Pedestrians		44				16				4				0			64	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Church St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192552
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Church St (Northbound)				Church St (Southbound)				Franklin St (Eastbound)				Franklin St (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	1	0	3	0	2	19	1	0	0	34	4	0	64	
7:15 AM	1	0	1	0	1	1	10	0	5	37	2	0	0	30	5	0	93	
7:30 AM	0	0	5	0	9	3	10	0	13	66	2	0	0	57	10	0	175	
7:45 AM	1	1	3	0	12	4	20	0	4	75	9	0	2	58	5	0	194	526
8:00 AM	0	2	6	0	3	8	10	0	13	61	11	0	2	40	13	0	169	631
8:15 AM	0	0	0	0	4	5	13	0	9	104	3	0	4	59	9	0	210	748
8:30 AM	1	1	2	0	7	3	11	0	13	79	3	0	2	62	11	0	195	768
8:45 AM	1	2	2	0	6	4	14	0	9	77	6	0	2	76	9	0	208	782

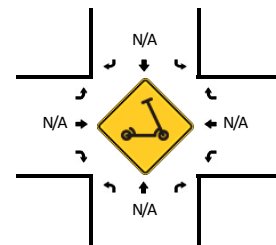
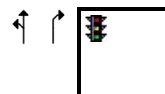
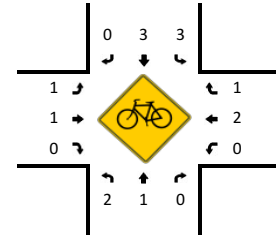
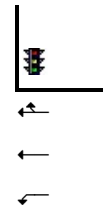
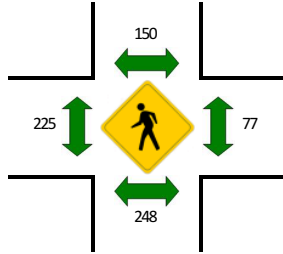
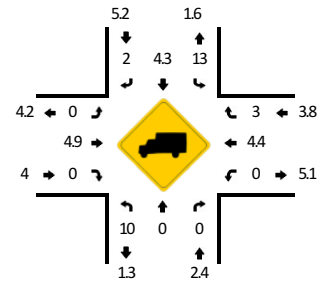
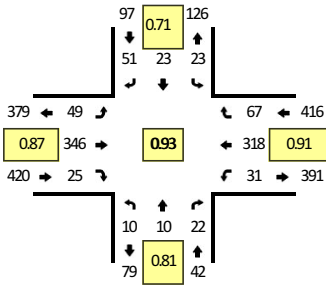
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	16	20	52	0	36	416	12	0	16	236	36	0	840
Heavy Trucks	0	0	0	0	0	0	0	0	4	16	0	0	0	20	0	0	40
Buses																	
Pedestrians		64				52				48				20			184
Bicycles	0	0	0		4	0	0		0	4	0		0	0	0		8
Scoters																	

Comments:

LOCATION: Church St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192553
DATE: Tue, Feb 25 2020

Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:30 PM -- 12:45 PM



15-Min Count Period Beginning At	Church St (Northbound)				Church St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	2	3	7	0	3	3	6	0	6	51	4	0	9	68	9	0	171	
11:45 AM	0	2	6	0	2	4	16	0	6	71	4	0	10	84	9	1	215	
12:00 PM	3	1	5	0	5	10	19	0	12	79	6	0	7	81	13	0	241	
12:15 PM	2	4	4	0	5	5	7	0	7	77	5	0	4	81	18	0	219	846
12:30 PM	4	2	7	0	6	3	13	0	15	92	6	0	12	84	18	0	262	937
12:45 PM	1	3	6	0	7	5	12	0	15	98	8	0	8	72	18	0	253	975
1:00 PM	3	2	4	0	1	2	11	0	13	79	6	0	5	67	14	1	208	942
1:15 PM	1	5	3	0	9	4	12	0	10	82	2	0	6	67	7	0	208	931

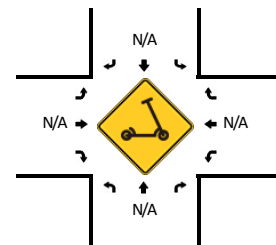
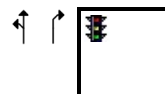
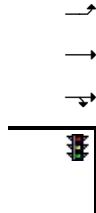
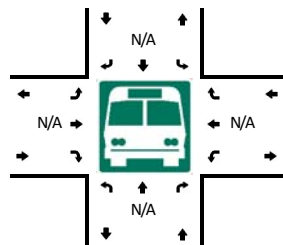
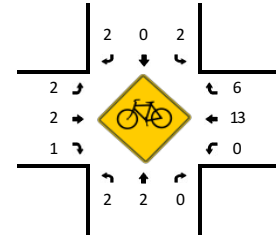
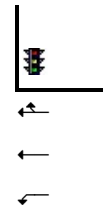
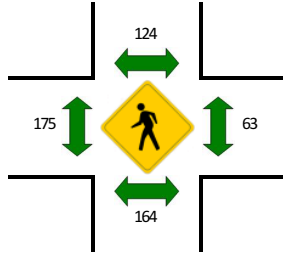
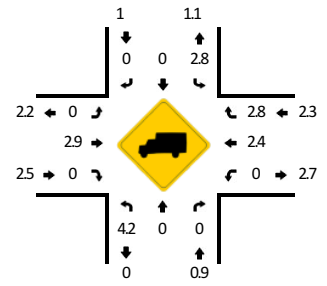
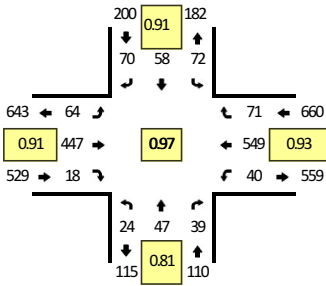
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	8	28	0	24	12	52	0	60	368	24	0	48	336	72	0	1048
Heavy Trucks	0	0	0		8	0	0		0	20	0		0	16	0		44
Buses																	
Pedestrians		312				160				192				68			732
Bicycles	8	0	0		4	0	0		4	0	0		0	0	0		16
Scoters																	

Comments:

LOCATION: Church St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15161008
DATE: Tue, Jan 21 2020

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



15-Min Count Period Beginning At	Church St (Northbound)				Church St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	3	6	0	14	4	7	0	6	87	2	0	9	72	11	0	225	
4:15 PM	8	5	6	0	9	17	15	0	13	87	6	0	11	119	26	0	322	
4:30 PM	10	2	4	0	15	6	11	0	8	101	7	0	2	101	17	0	284	
4:45 PM	11	11	9	0	9	6	11	0	11	90	6	0	11	106	16	0	297	1128
5:00 PM	6	16	12	0	19	11	10	0	17	125	4	0	7	125	19	0	371	1274
5:15 PM	9	16	6	0	20	15	20	0	13	112	6	0	13	133	14	0	377	1329
5:30 PM	4	7	11	0	20	16	19	0	15	111	4	0	10	150	17	1	385	1430
5:45 PM	5	8	10	0	13	16	21	0	19	99	4	0	9	141	21	0	366	1499

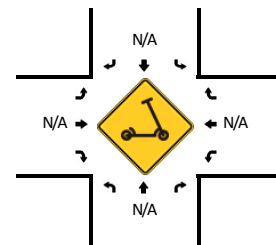
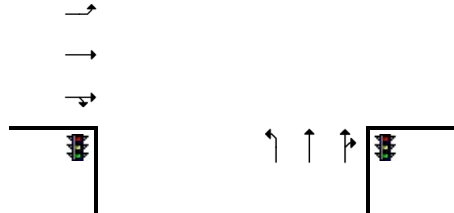
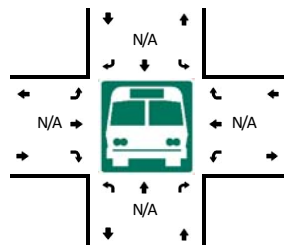
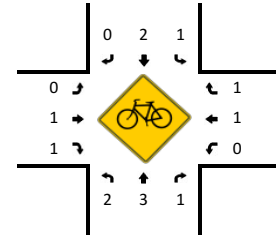
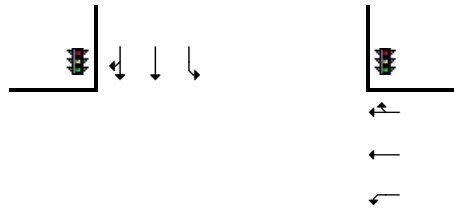
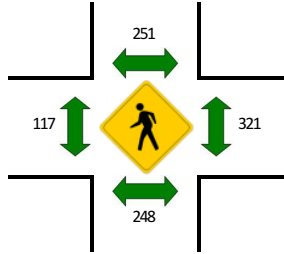
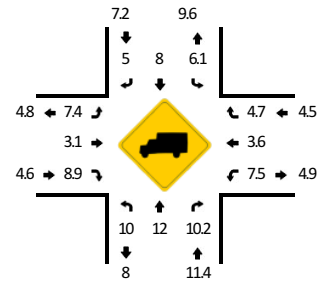
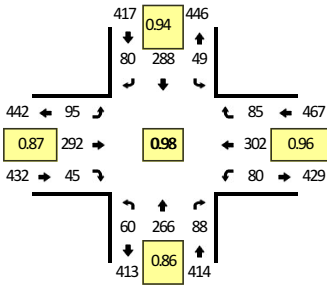
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	28	44	0	80	64	76	0	60	444	16	0	40	600	68	4	1540
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	20	0		36
Buses																	
Pedestrians		172				124				164				92			552
Bicycles	0	0	0		0	0	0		0	0	0		0	4	1		5
Scoters																	

Comments:

LOCATION: Columbia St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192555
DATE: Tue, Feb 25 2020

Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:30 PM -- 12:45 PM



15-Min Count Period Beginning At	Columbia St (Northbound)				Columbia St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:30 AM	11	73	20	0	15	61	16	0	20	40	4	0	10	57	14	0	341	
11:45 AM	12	63	25	0	14	71	21	0	23	59	7	0	13	79	27	0	414	
12:00 PM	10	75	18	0	15	80	16	0	18	70	9	0	23	79	18	0	431	
12:15 PM	17	65	16	0	13	75	23	0	22	73	7	0	26	70	26	0	433	1619
12:30 PM	16	69	36	0	5	75	20	0	21	72	16	0	11	86	16	0	443	1721
12:45 PM	17	57	18	0	16	58	21	0	34	77	13	0	20	67	25	0	423	1730
1:00 PM	11	76	23	0	11	77	23	0	23	60	11	0	15	51	22	0	403	1702
1:15 PM	11	58	12	0	11	70	16	0	31	62	18	0	25	69	18	0	401	1670

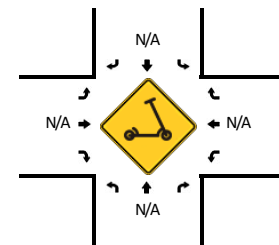
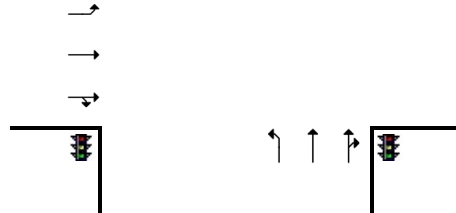
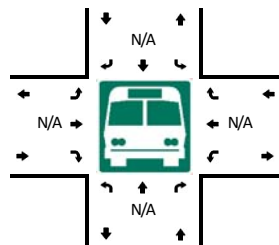
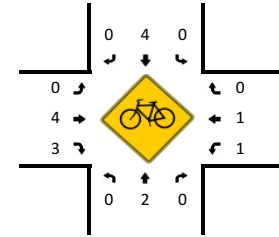
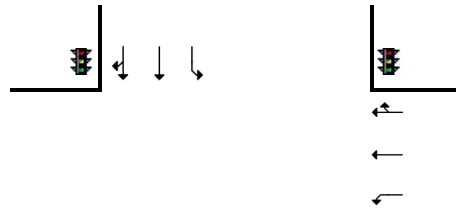
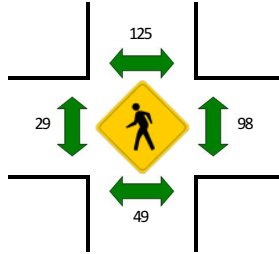
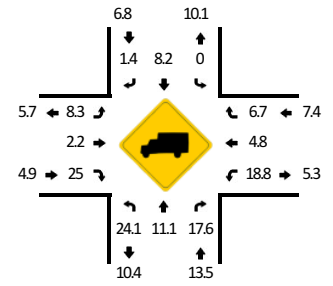
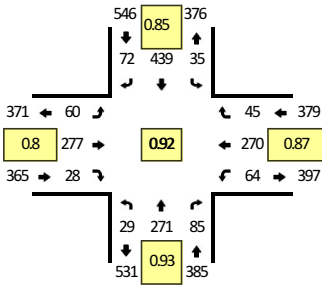
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	276	144	0	20	300	80	0	84	288	64	0	44	344	64	0	1772
Heavy Trucks	4	24	16		0	32	8		8	12	8		4	8	0		124
Buses		236				308				120				212			876
Pedestrians	4	4	4		0	0	0		0	0	0		0	4	0		16
Bicycles																	
Scoters																	

Comments:

LOCATION: Columbia St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15192554
DATE: Tue, Feb 25 2020

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



15-Min Count Period Beginning At	Columbia St (Northbound)				Columbia St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	65	7	0	5	70	3	0	0	16	4	0	7	30	7	0	219	
7:15 AM	4	53	10	0	8	107	6	0	5	31	5	0	11	32	9	0	281	
7:30 AM	12	82	14	0	3	123	17	0	9	54	11	0	14	46	5	0	390	
7:45 AM	5	57	10	0	11	137	11	0	14	69	12	0	17	69	8	0	420	1310
8:00 AM	10	67	20	0	6	105	7	0	10	54	6	0	13	53	6	0	357	1448
8:15 AM	6	64	18	0	5	110	13	0	25	82	7	0	15	69	10	0	424	1591
8:30 AM	10	70	23	0	13	114	13	0	11	69	6	0	20	72	17	0	438	1639
8:45 AM	3	70	24	0	11	110	39	0	14	72	9	0	16	76	12	0	456	1675

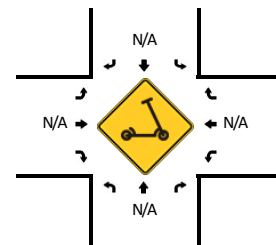
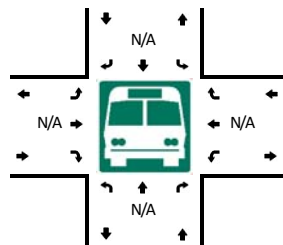
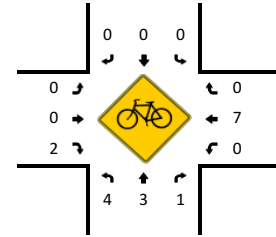
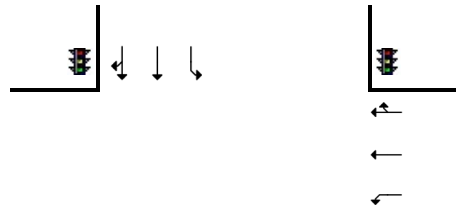
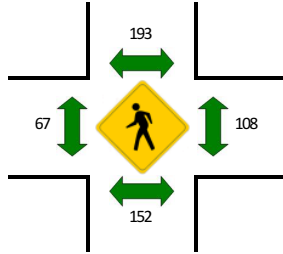
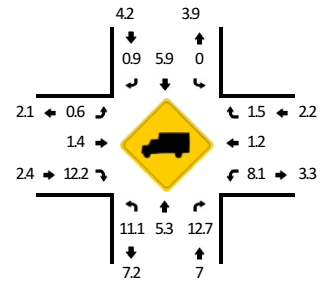
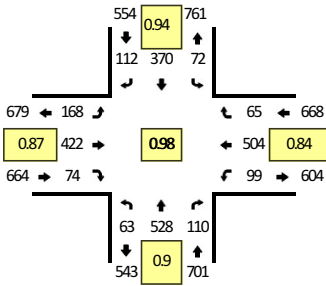
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	280	96	0	44	440	156	0	56	288	36	0	64	304	48	0	1824
Heavy Trucks	8	36	16		0	28	4		8	4	4		8	8	4		128
Buses																	
Pedestrians		56				152				44				140			392
Bicycles	0	0	0		0	12	0		0	4	8		4	4	0		32
Scoters																	

Comments:

LOCATION: Columbia St -- Franklin St
CITY/STATE: Chapel Hill, NC

QC JOB #: 15161010
DATE: Tue, Jan 21 2020

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



15-Min Count Period Beginning At	Columbia St (Northbound)				Columbia St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	15	99	13	0	14	65	14	0	19	95	19	0	24	79	18	0	474	
4:15 PM	15	129	18	0	12	84	29	0	28	88	18	0	14	105	12	0	552	
4:30 PM	14	110	28	0	21	78	19	0	37	98	20	0	16	93	13	0	547	
4:45 PM	18	121	17	0	16	90	14	0	31	92	20	0	21	110	8	0	558	2131
5:00 PM	14	135	25	0	21	98	29	0	52	121	18	0	21	104	15	0	653	2310
5:15 PM	14	141	23	0	20	87	30	0	31	123	21	0	25	126	21	0	662	2420
5:30 PM	21	139	34	0	17	89	28	0	43	89	13	0	20	123	15	0	631	2504
5:45 PM	14	113	28	0	14	96	25	0	42	89	22	0	33	151	14	0	641	2587
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	56	564	92	0	80	348	120	0	124	492	84	0	100	504	84	0	2648	
Heavy Trucks	8	28	12		0	20	4		4	0	12		0	4	4		96	
Buses																		
Pedestrians		156				252				48				92			548	
Bicycles	4	1	1		0	0	0		0	0	2		0	3	0		11	
Scoters																		

Comments:



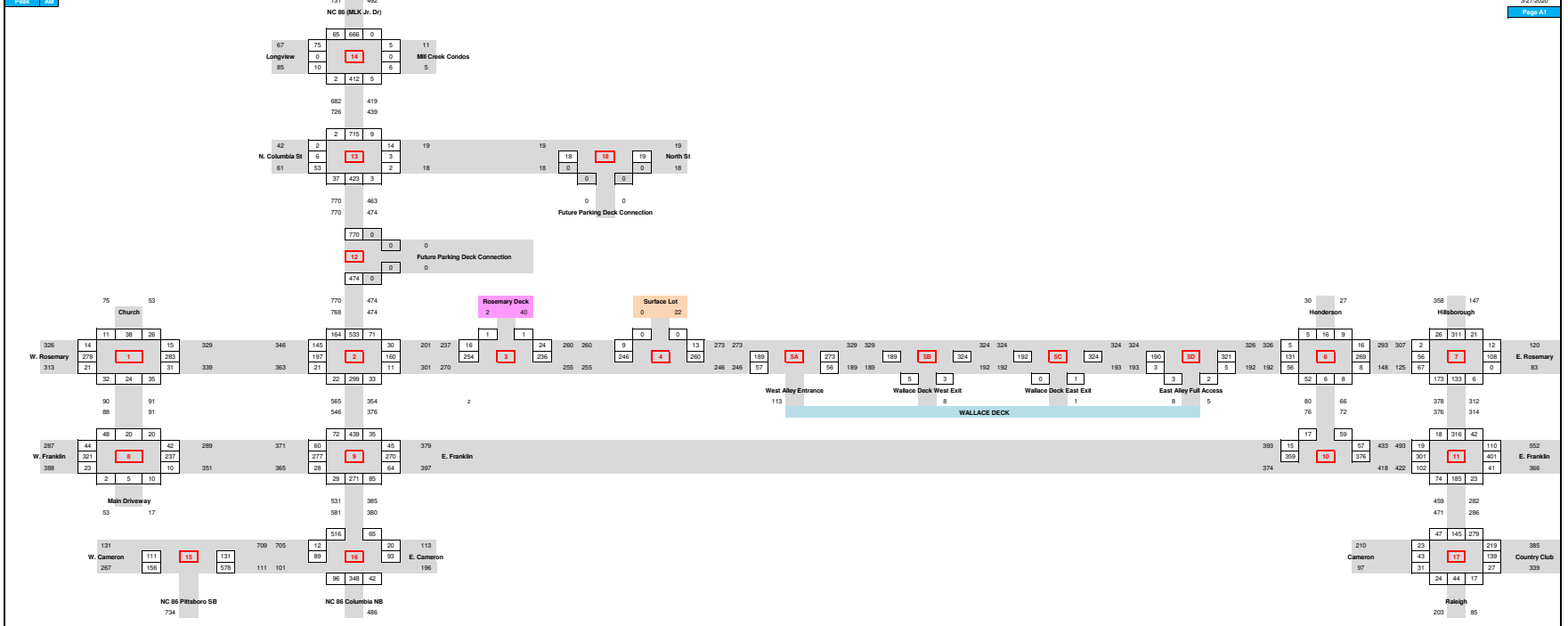
Appendix C – Traffic Volume Development Scenarios

E. Rosemary Parking Deck & Office Building Trip Generation

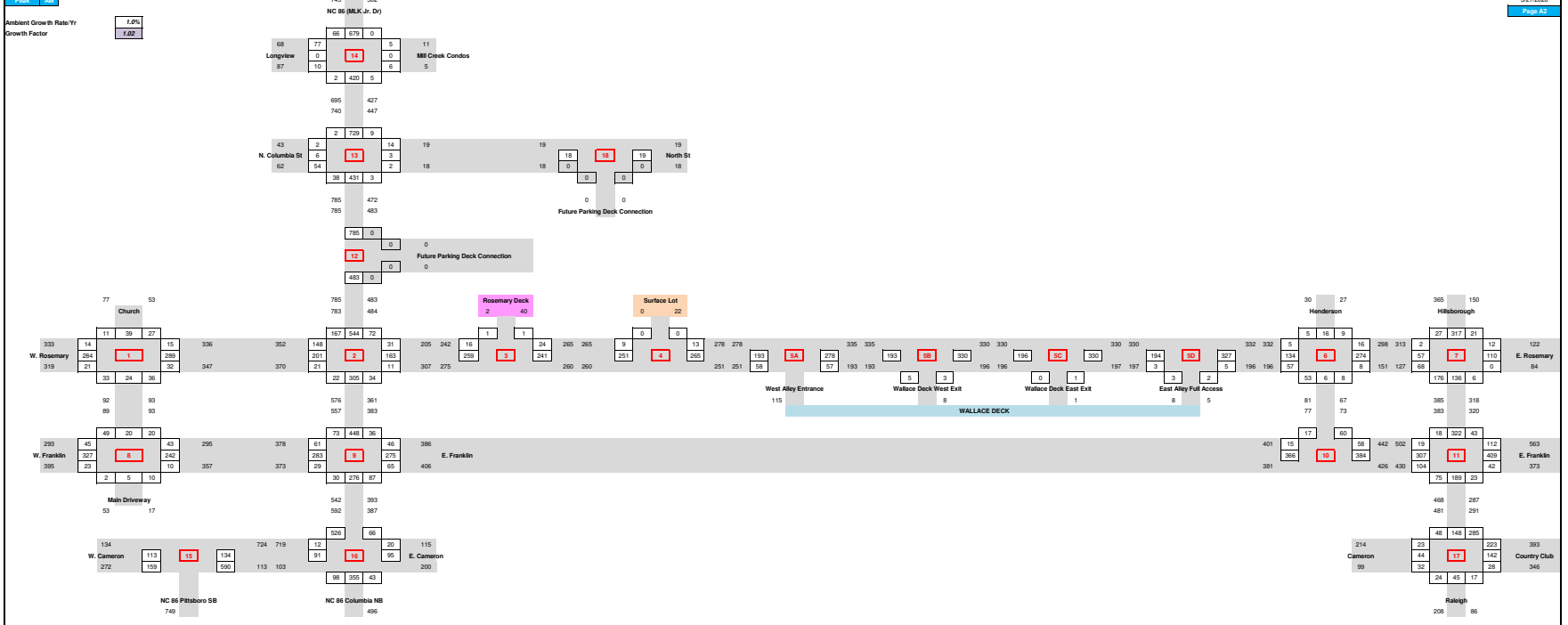
Parking Deck

Facility	ITE LUC	Spaces/Ratio	Daily Estimate			AM Peak Hour			Noon Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Existing Rosemary Deck Counts		285	310	310	620	40	2	42	62	29	91	12	50	62
Existing Private Lot Counts		109	110	110	220	22	0	22	5	1	6	1	18	19
Existing Wallace Deck/Alley Counts		306	945	945	1890	121	14	135	75	78	153	59	130	189
Existing Total Parking (reallocated to new deck)		700	1365	1365	2730	183	16	199	142	108	250	72	198	270
Proposed Lot Ratios (1100/841)		0.2354	321	321	643	43	4	47	33	25	58	17	47	64
TOTALS - TRIPS TO/FROM NEW DECK			1686	1686	3373	226	20	246	175	133	308	89	245	334

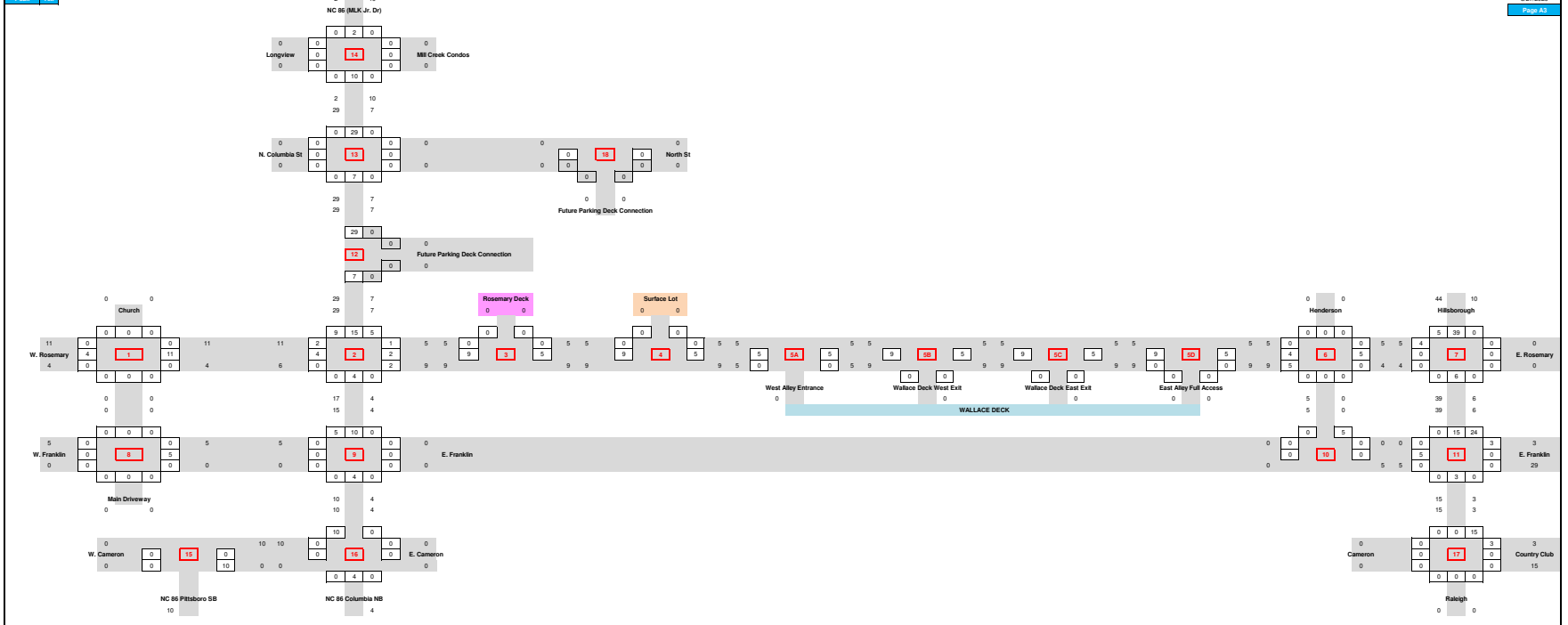
2020 Raw Count Traffic Volume Data

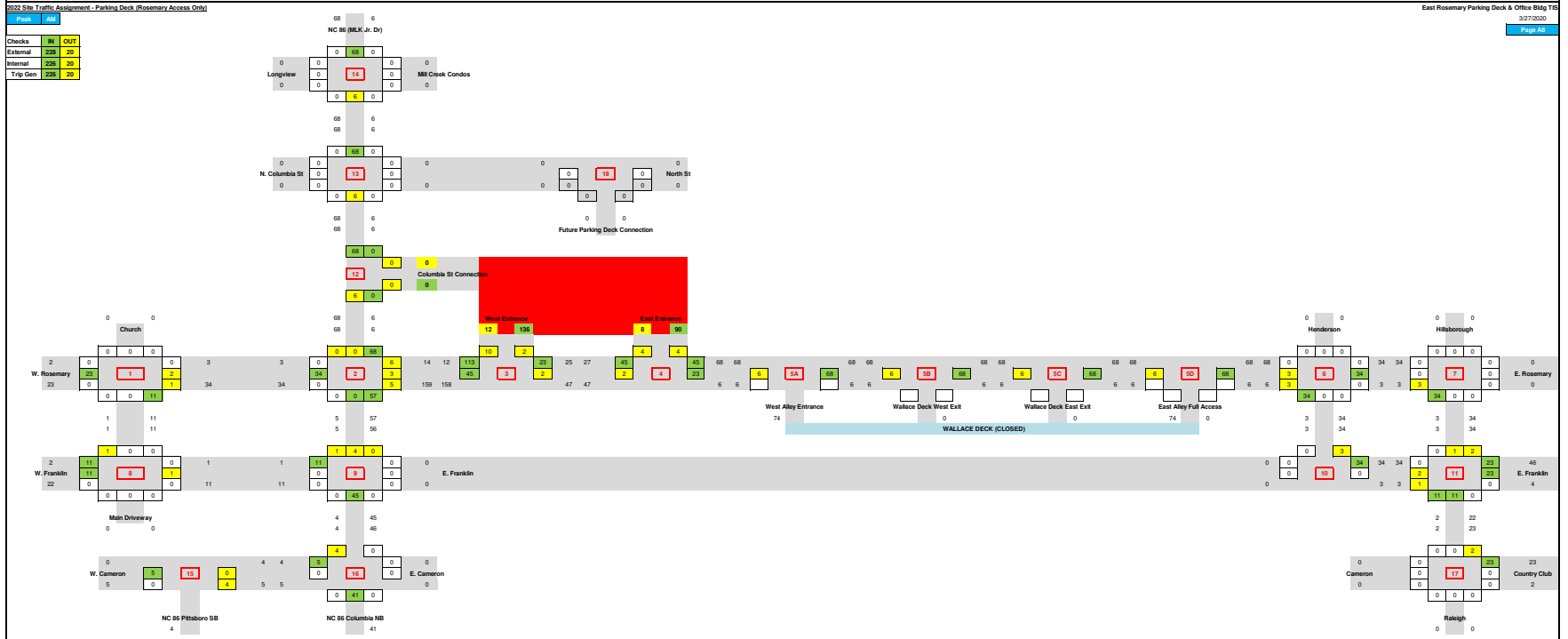
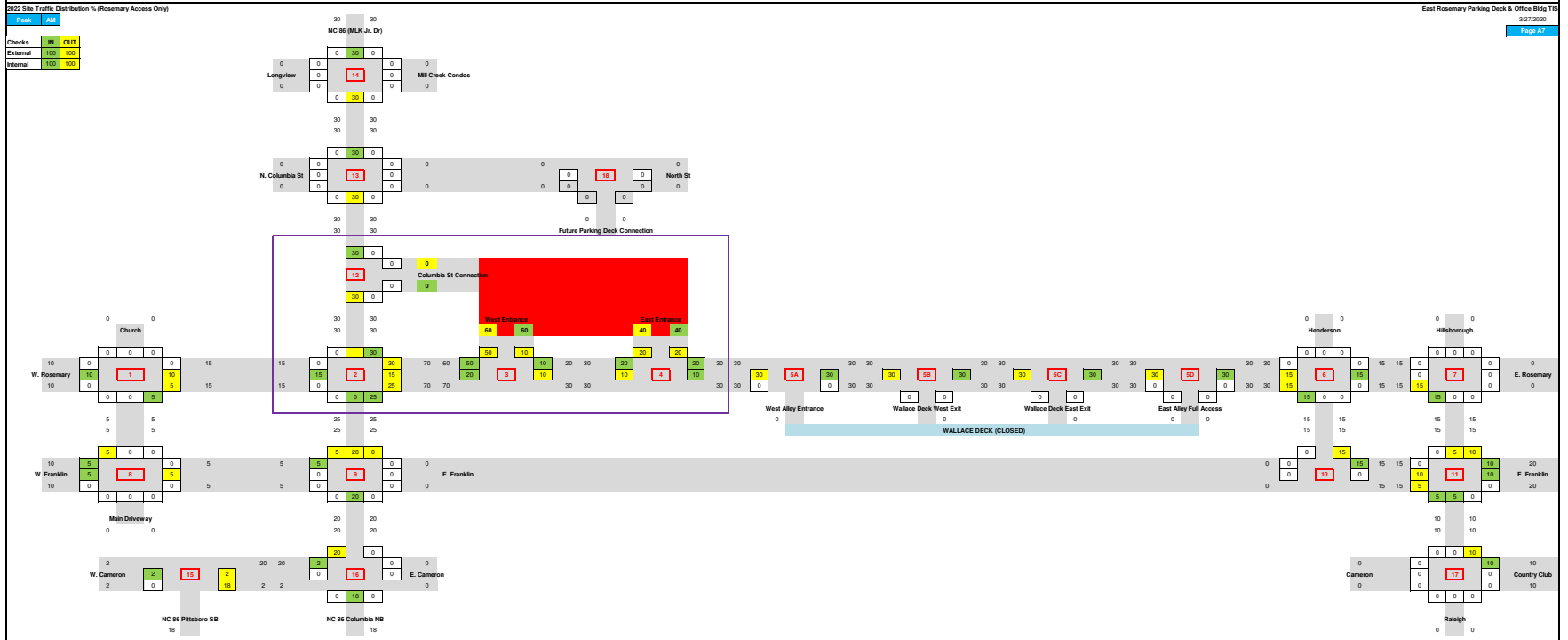
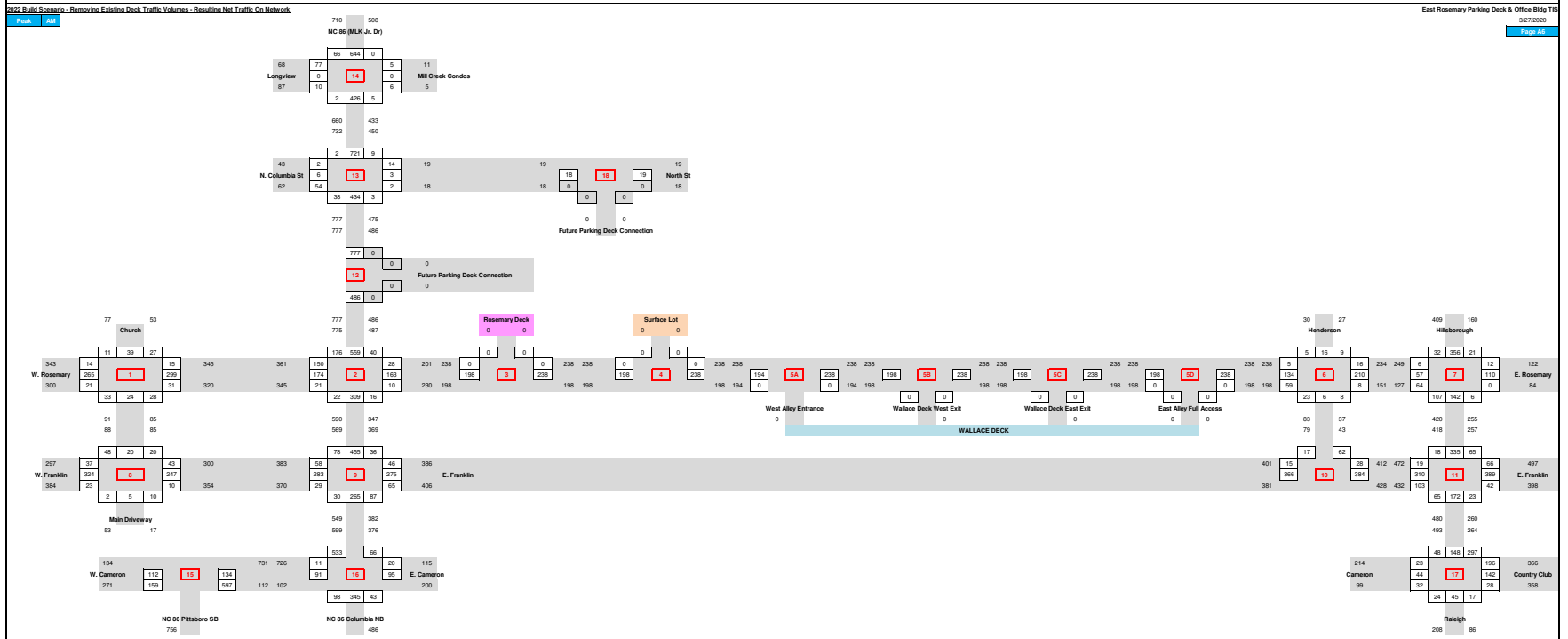
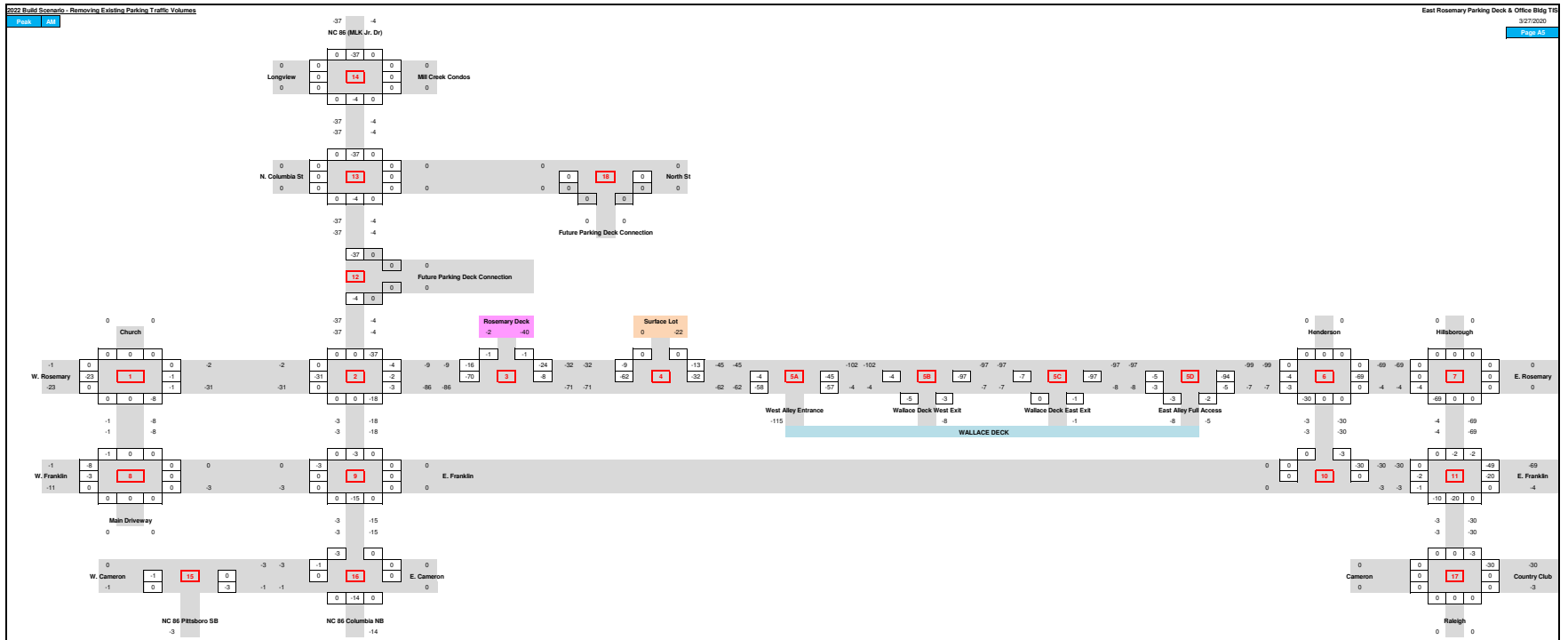


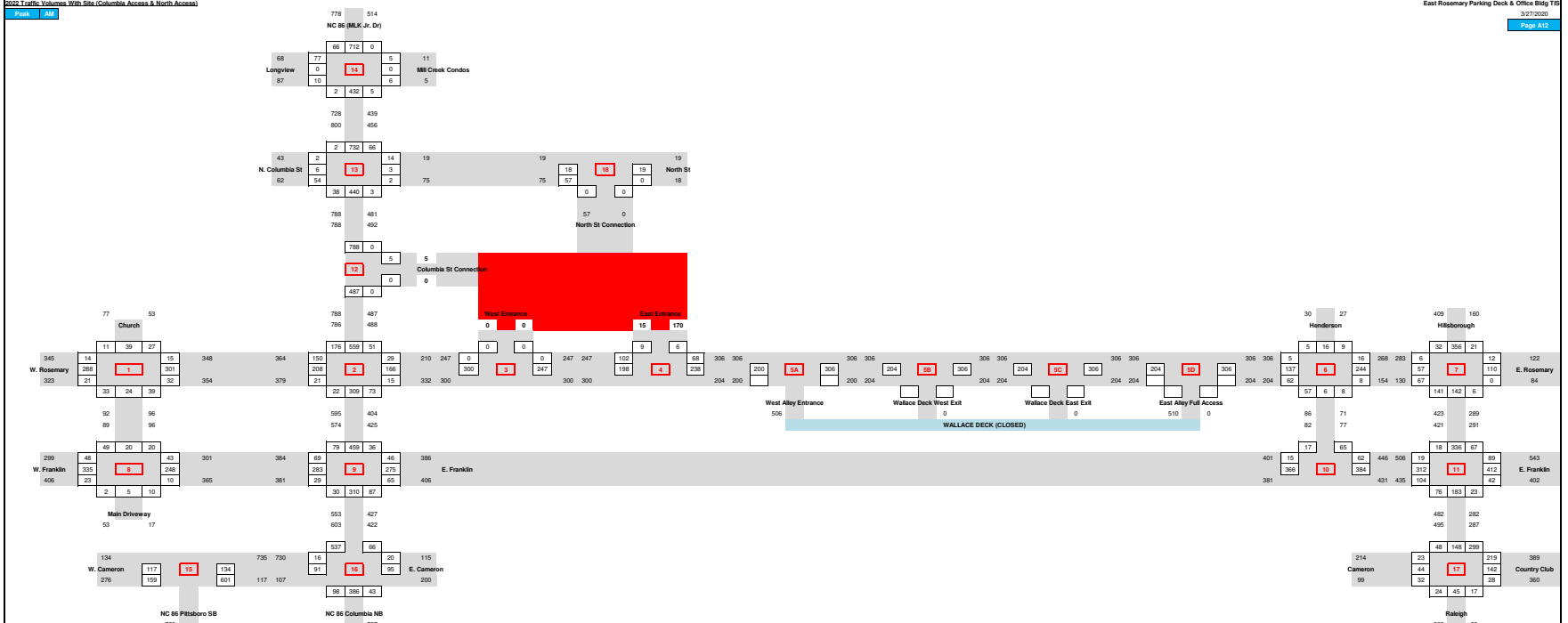
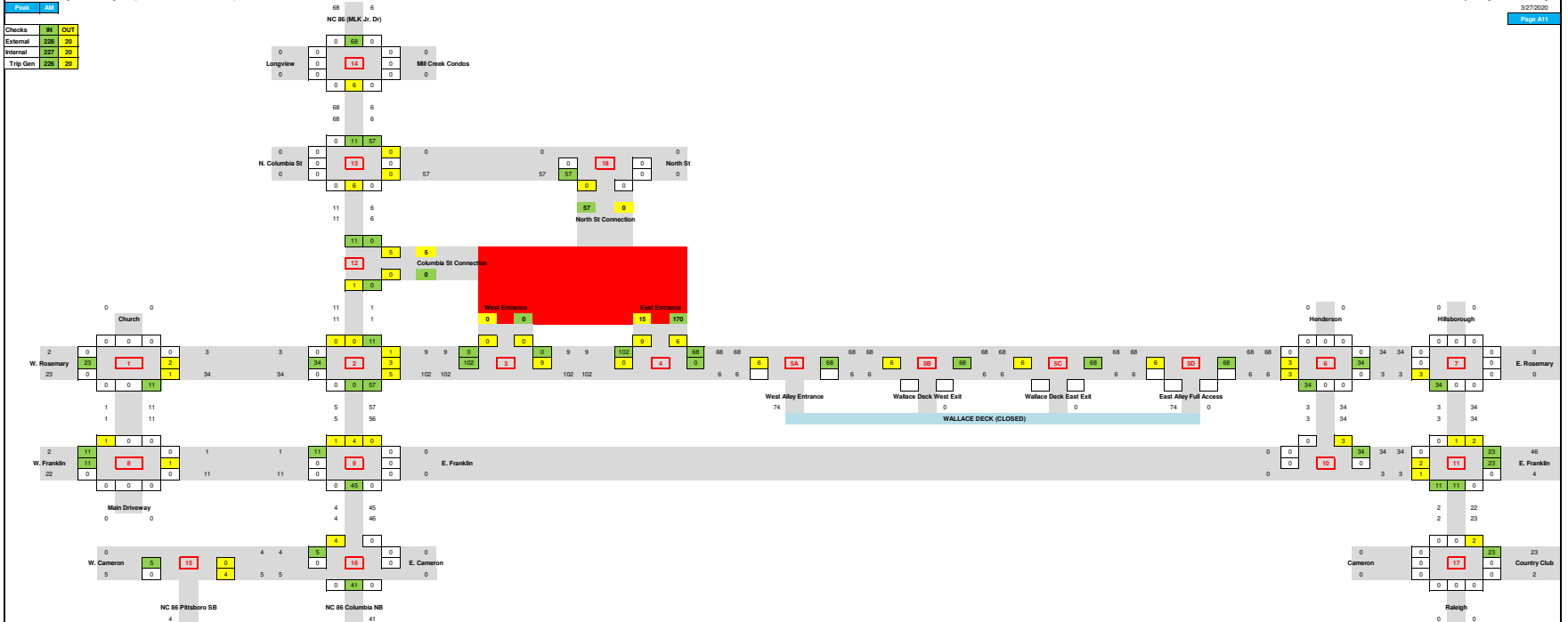
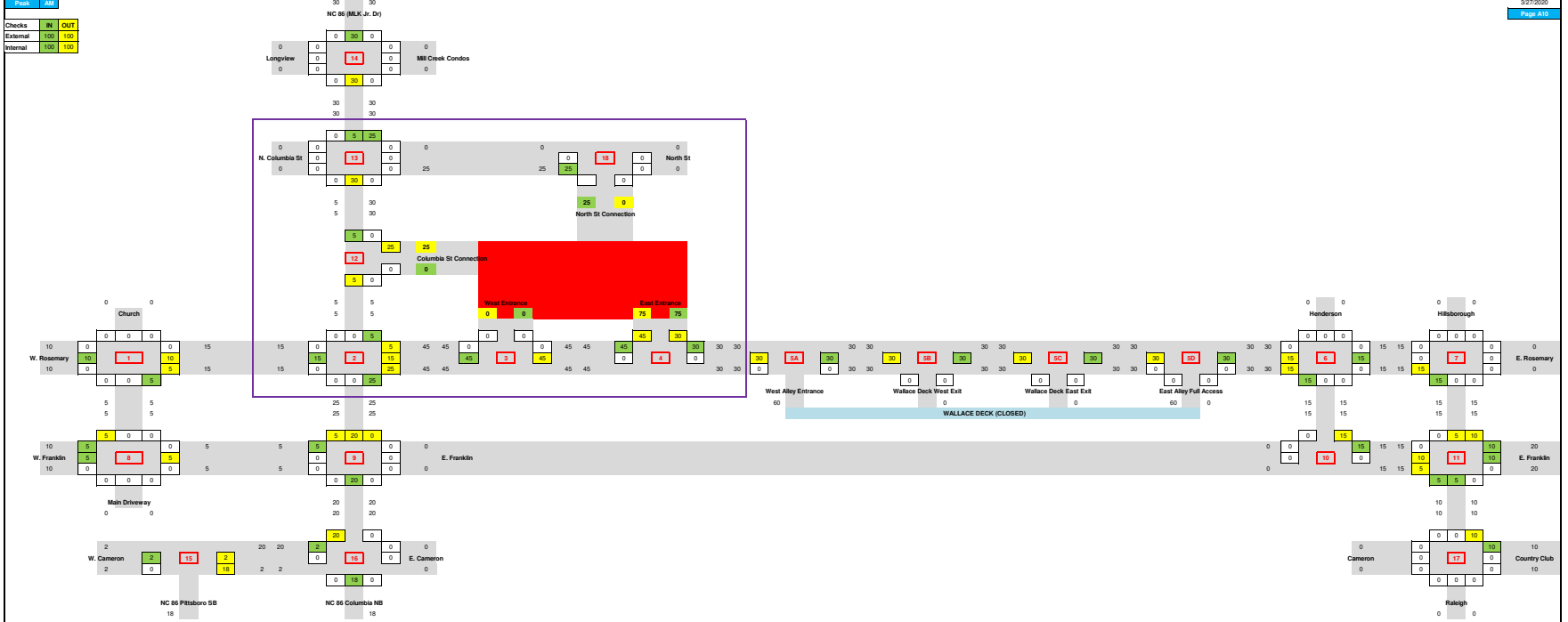
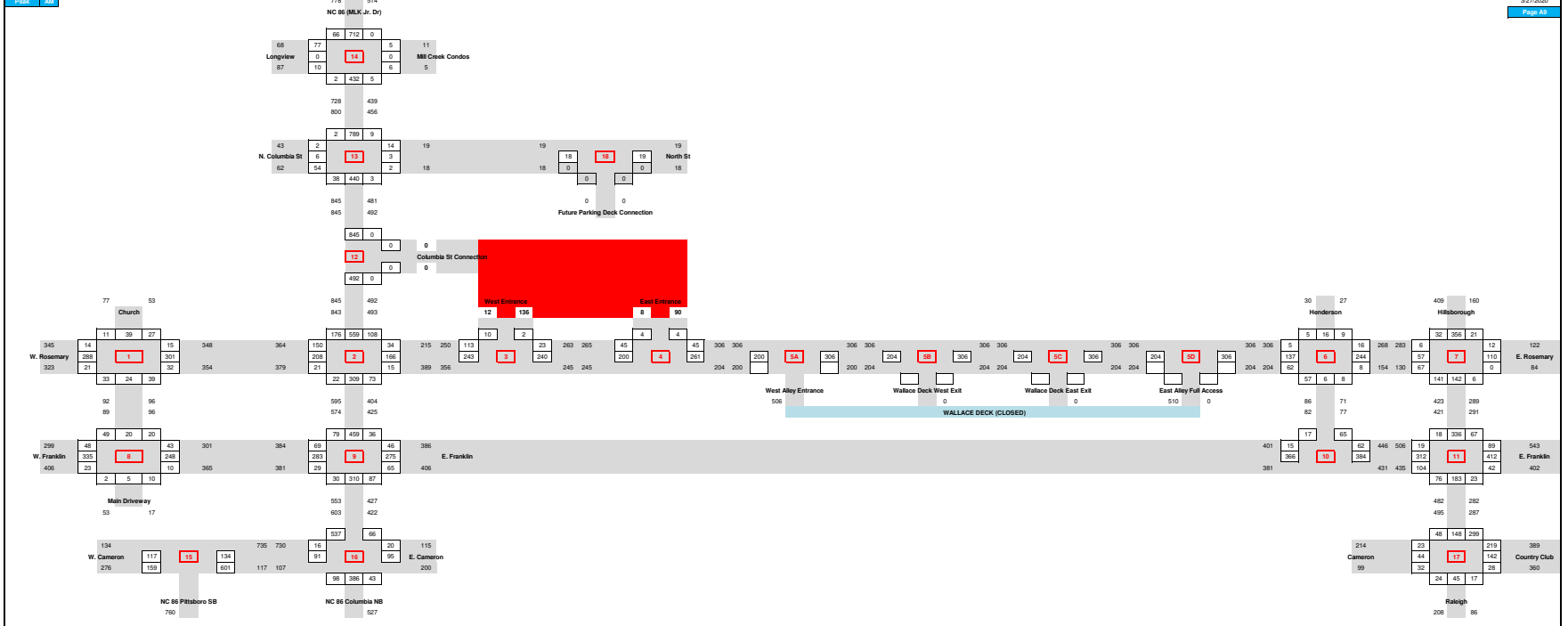
2020 Ambient Growth Traffic Volume

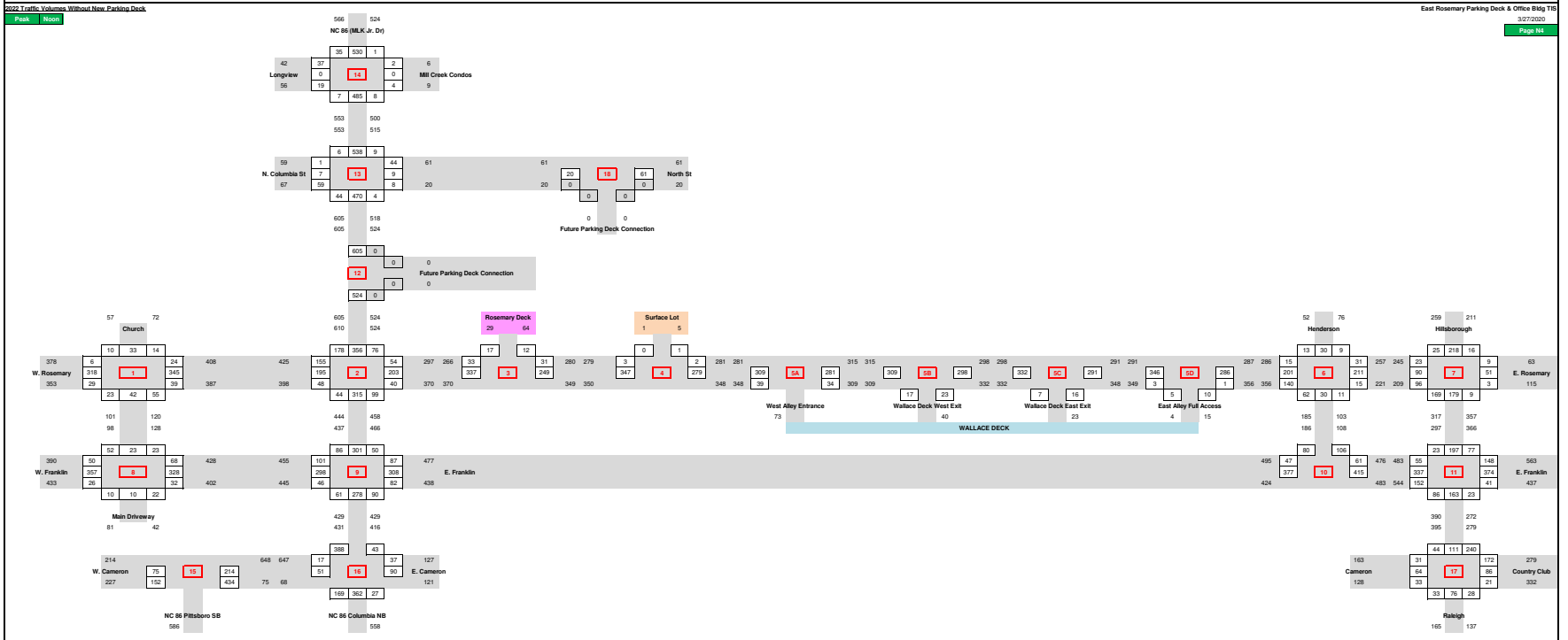
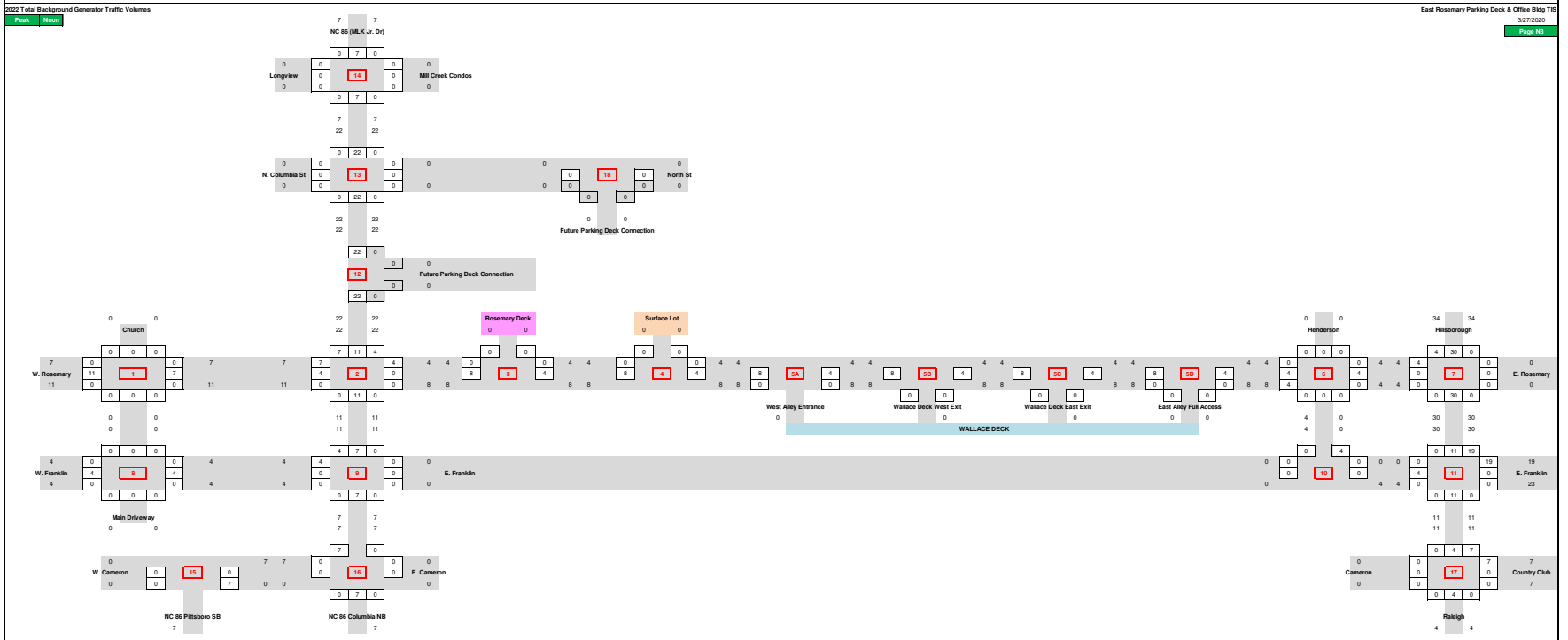
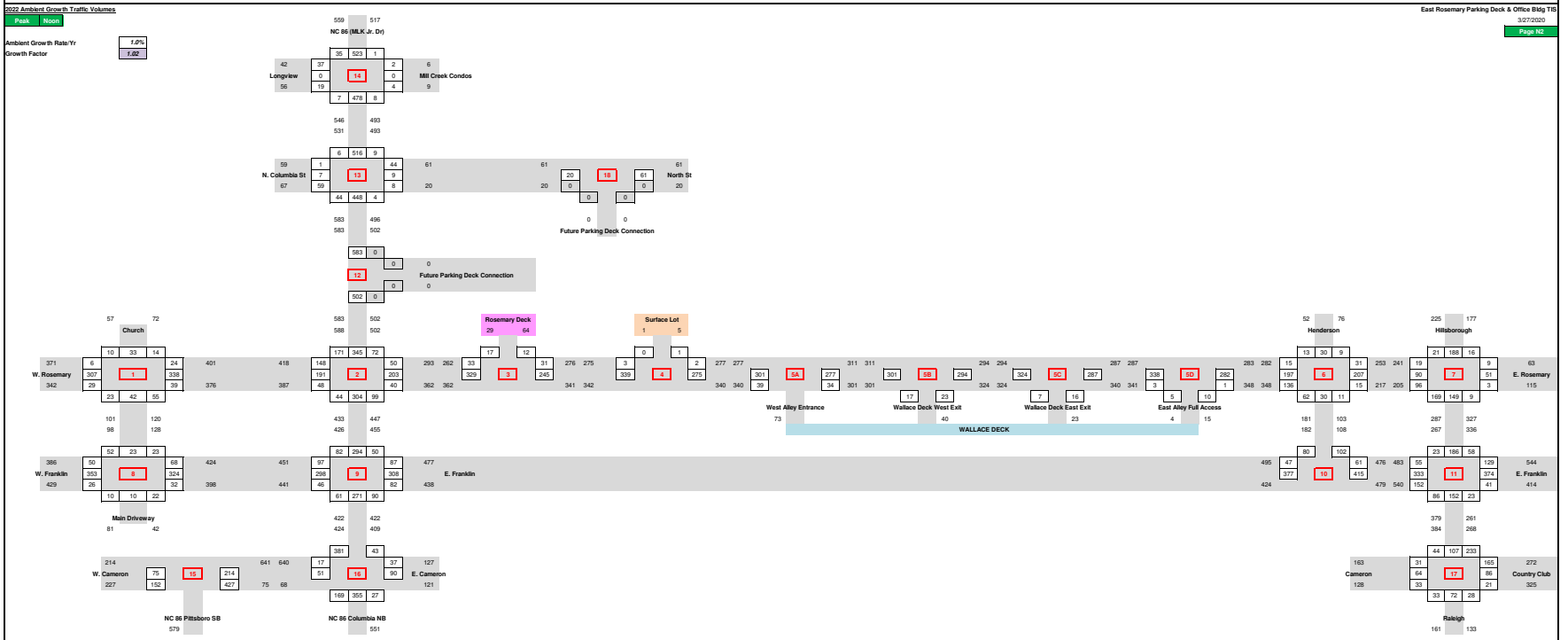
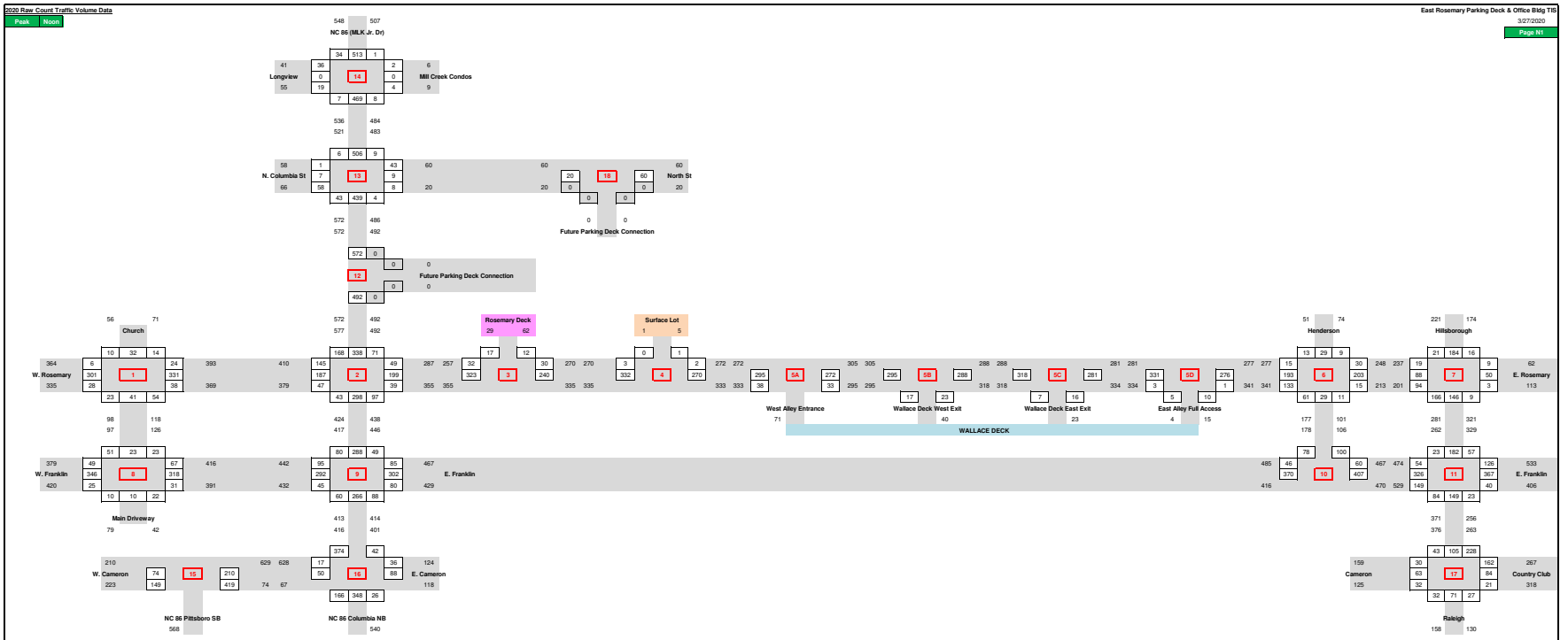


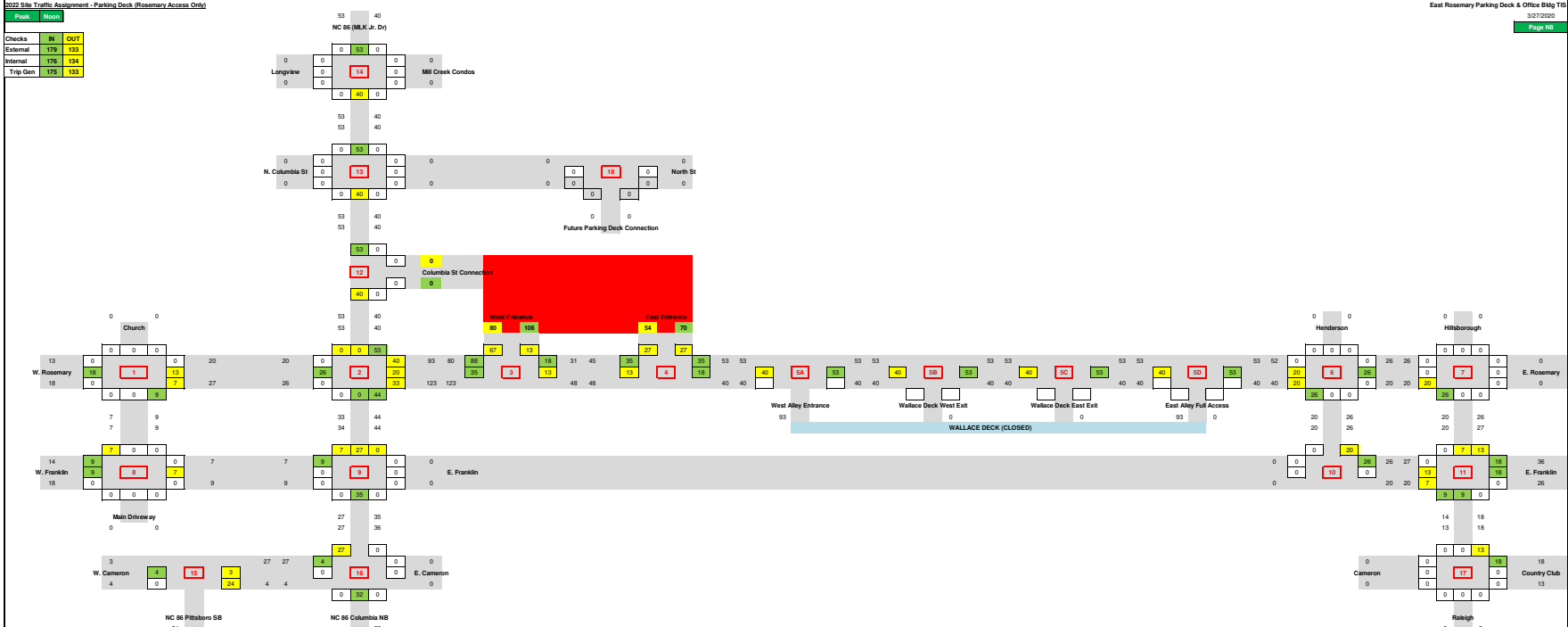
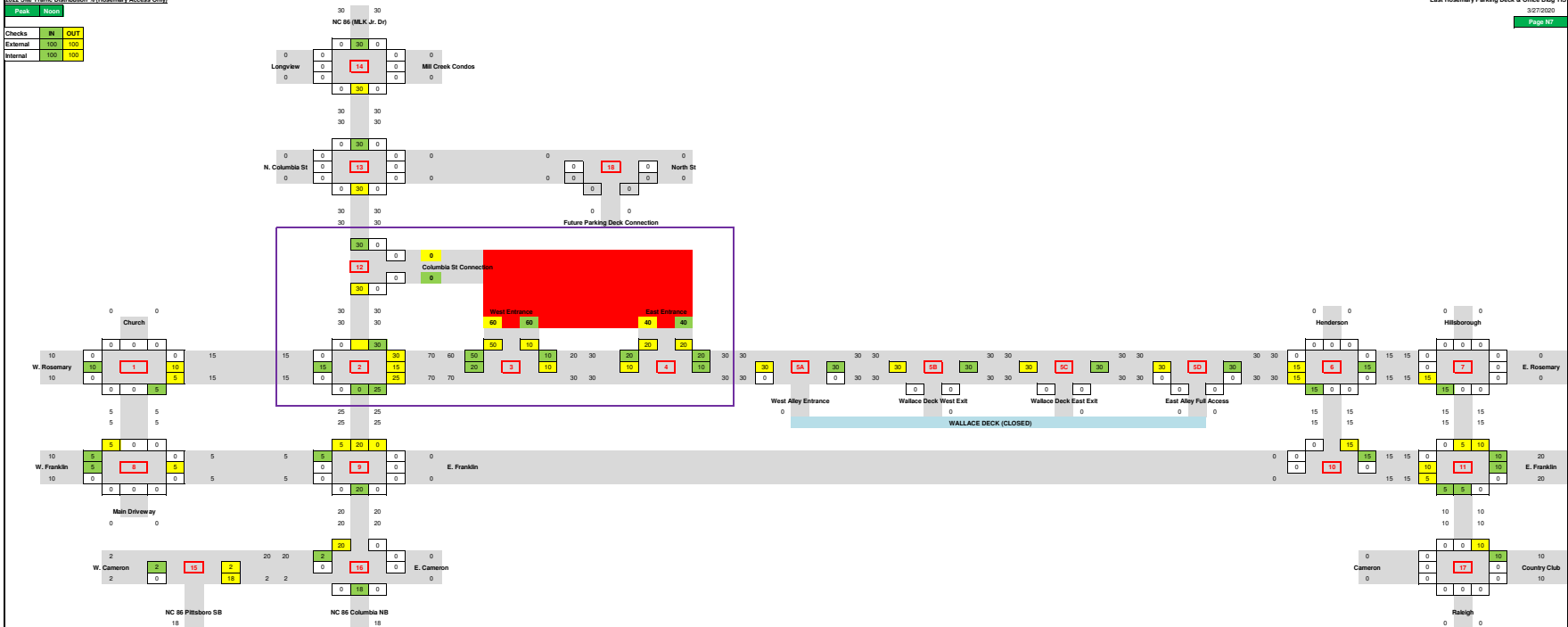
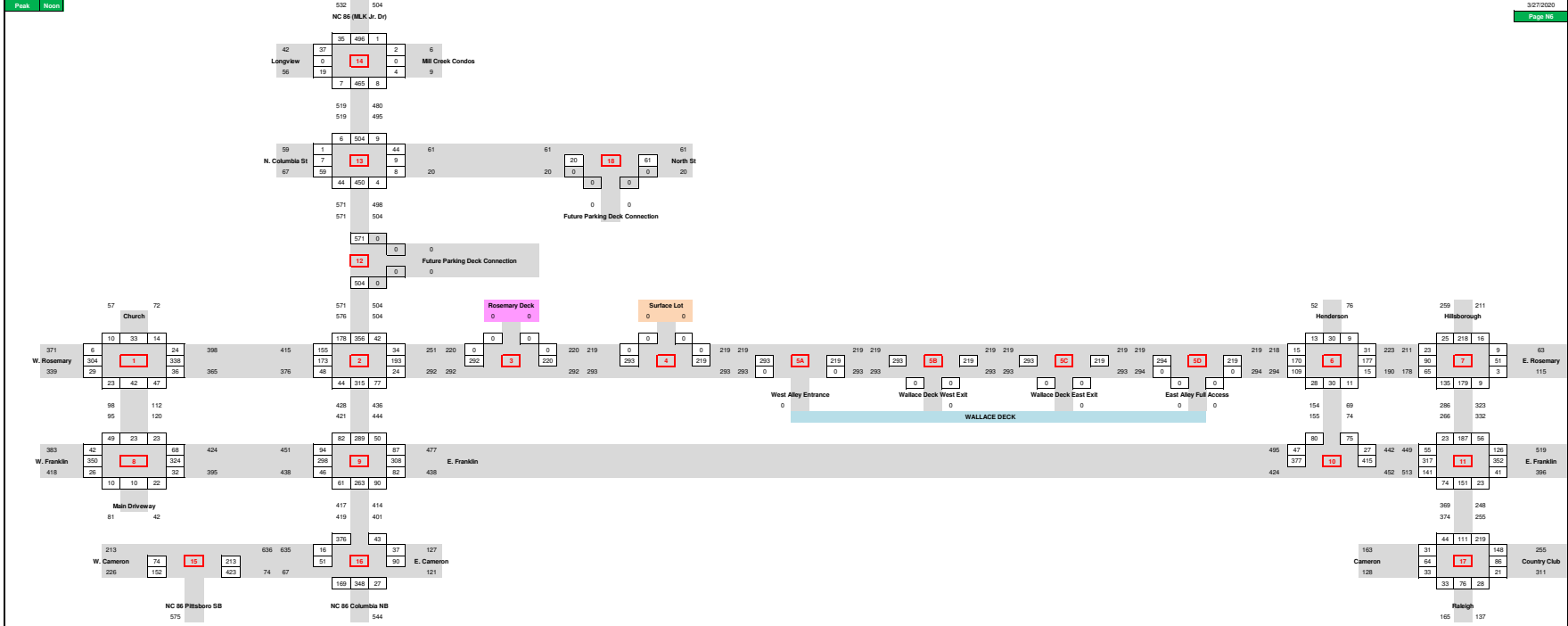
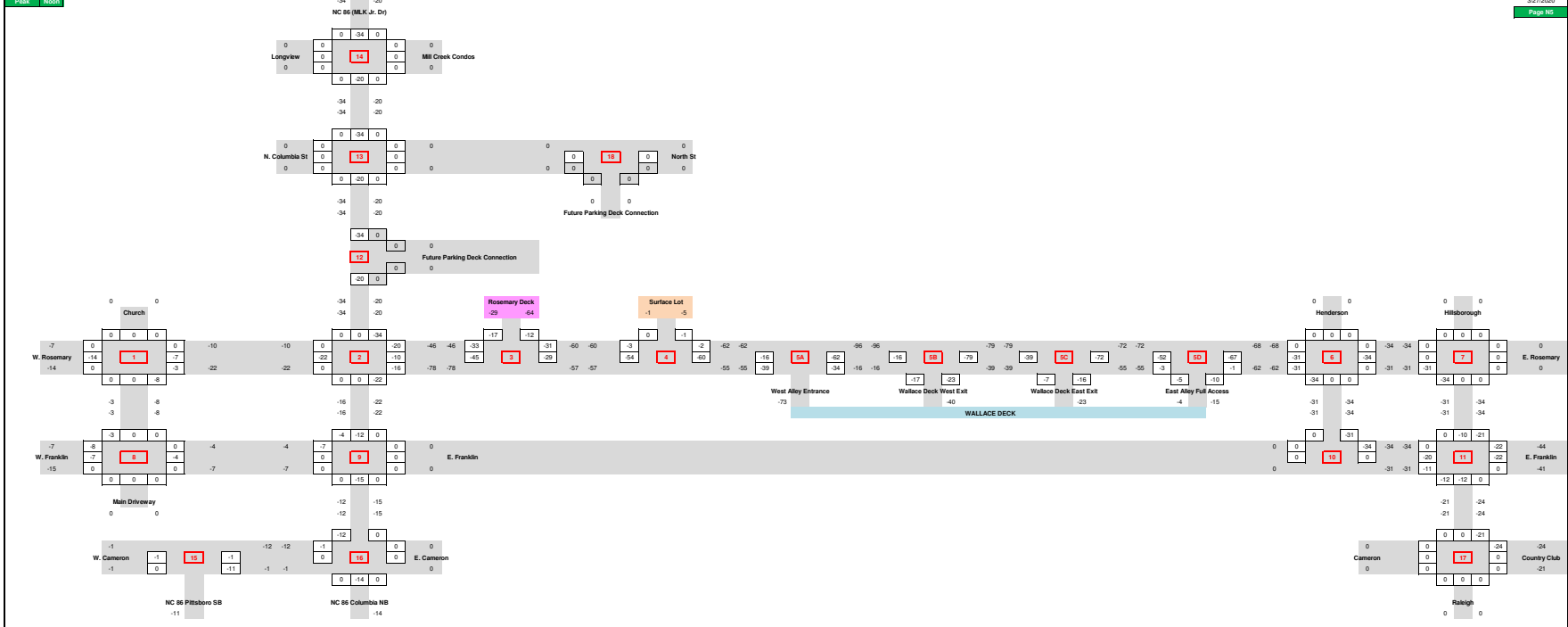
2020 Total Background Generated Traffic Volume

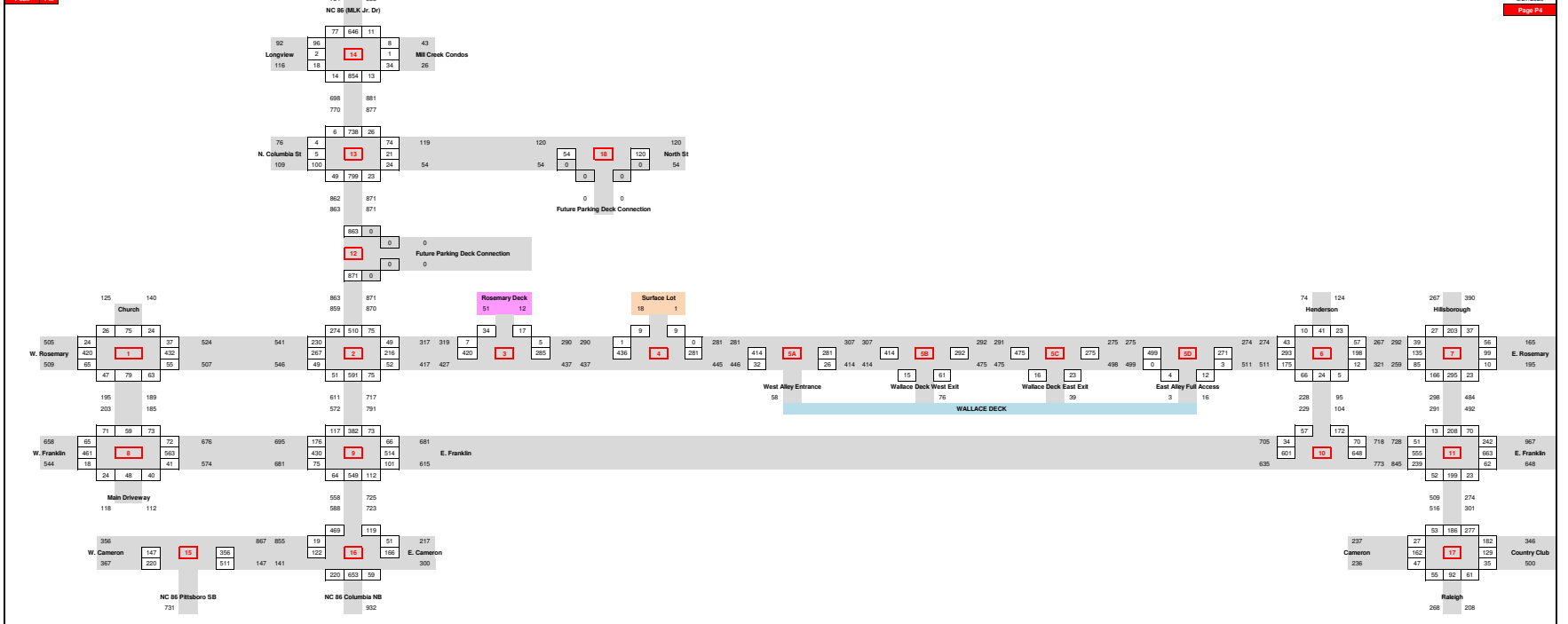
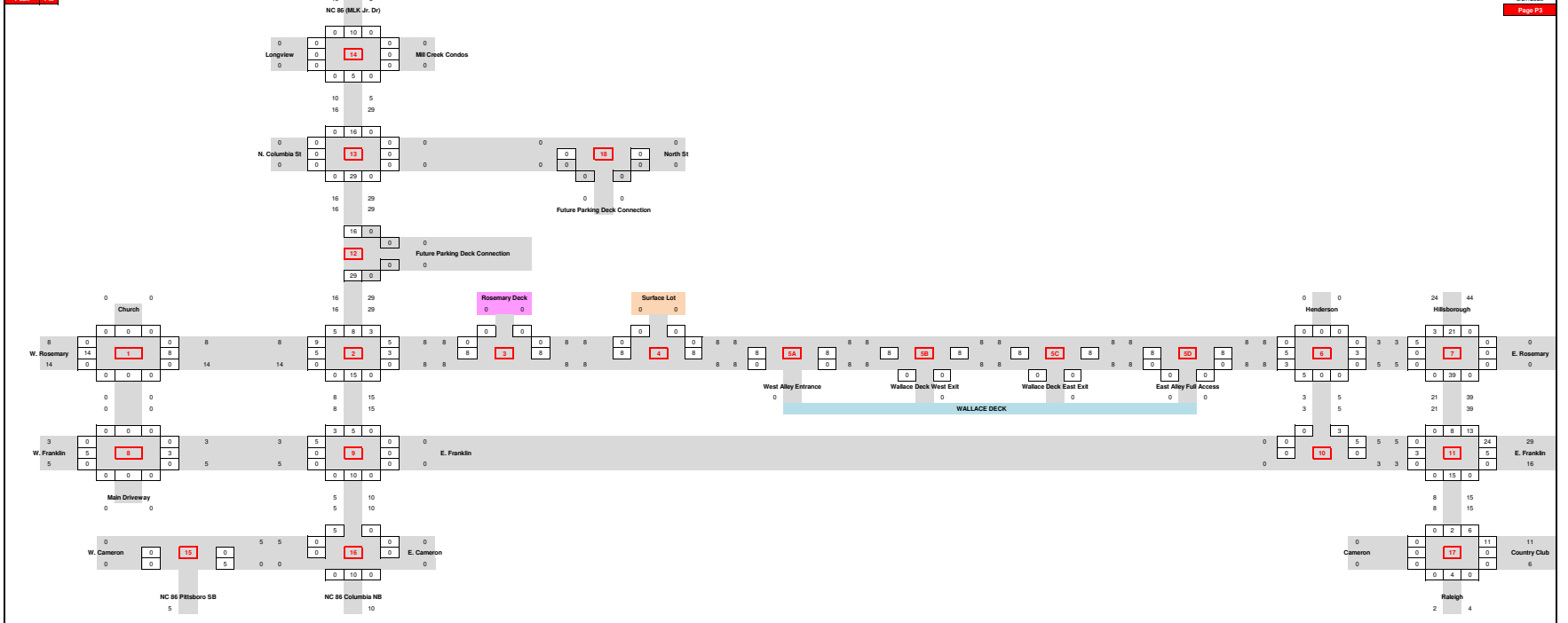
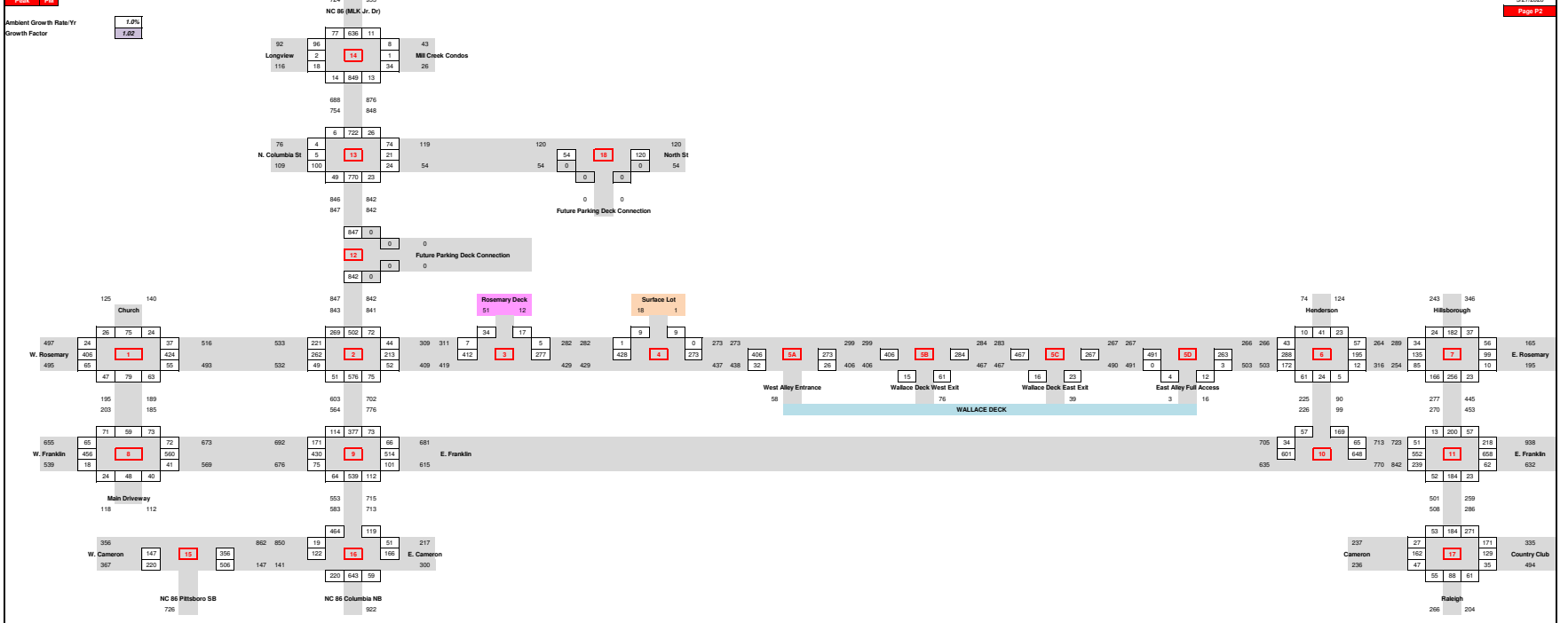
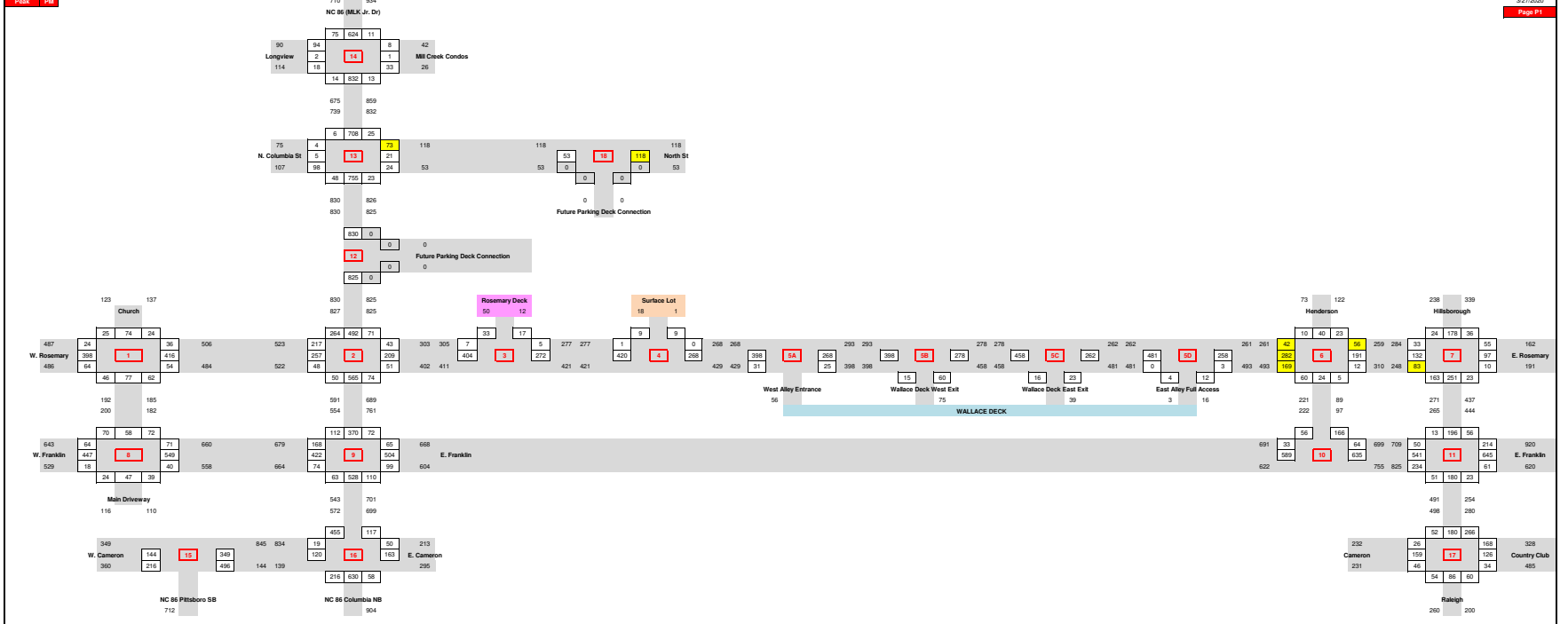


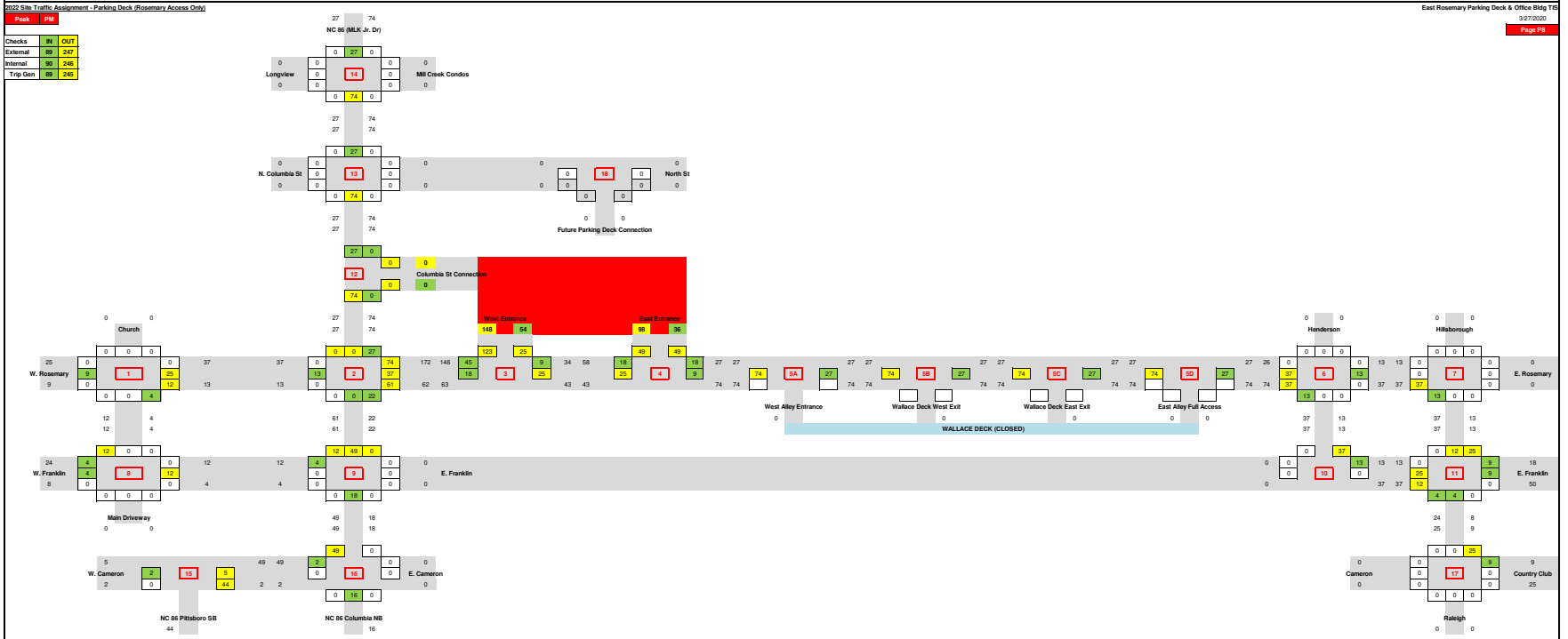
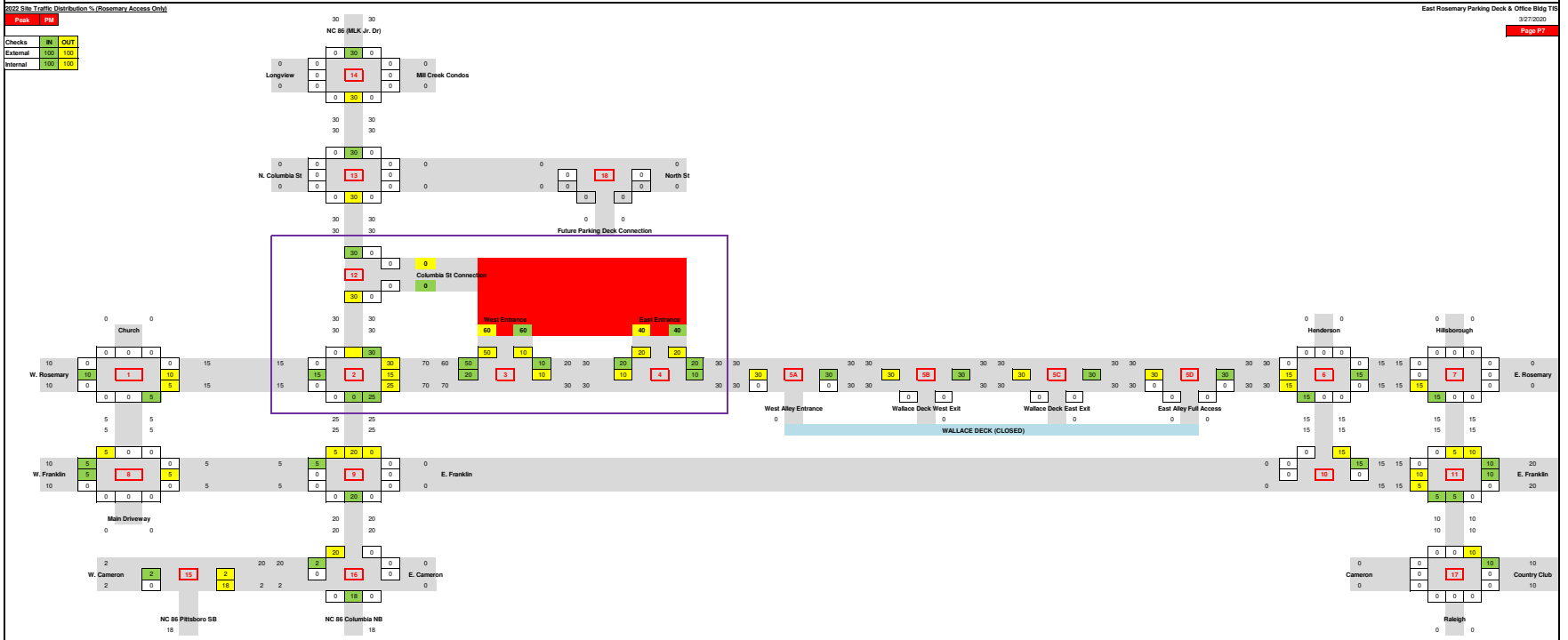
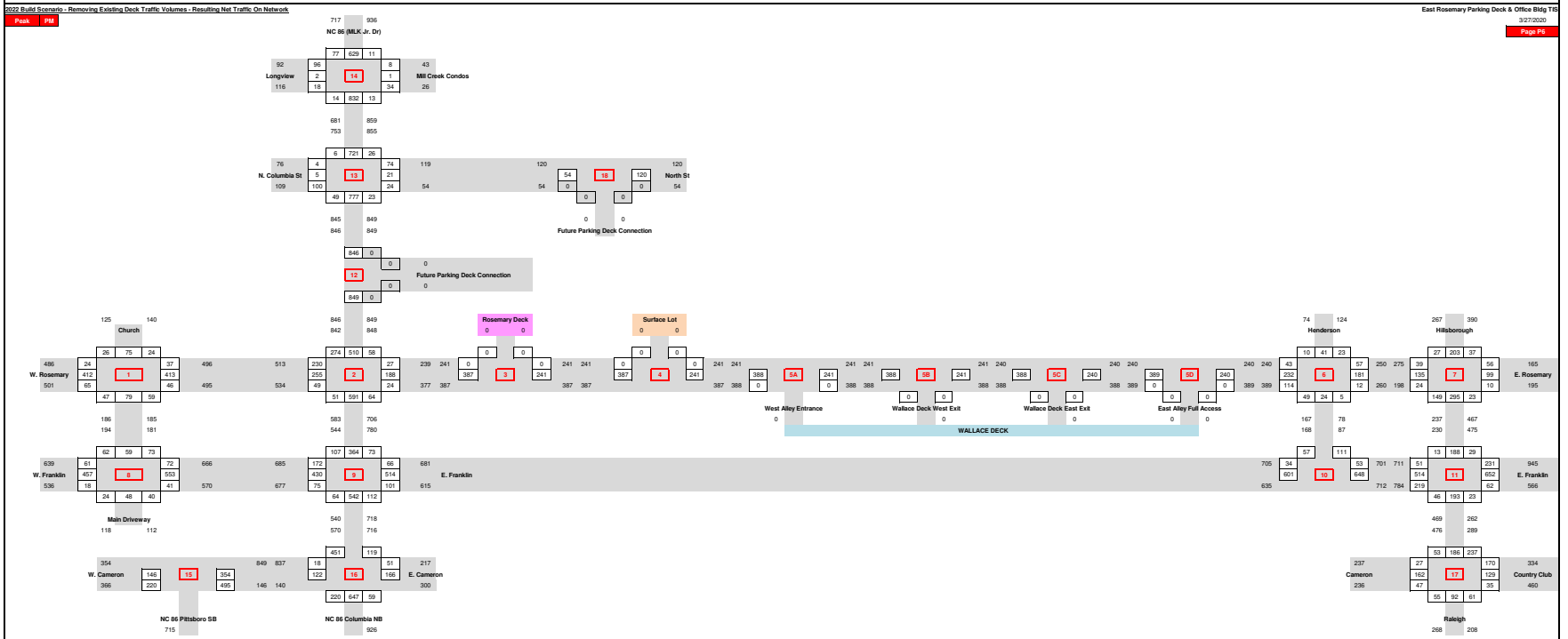
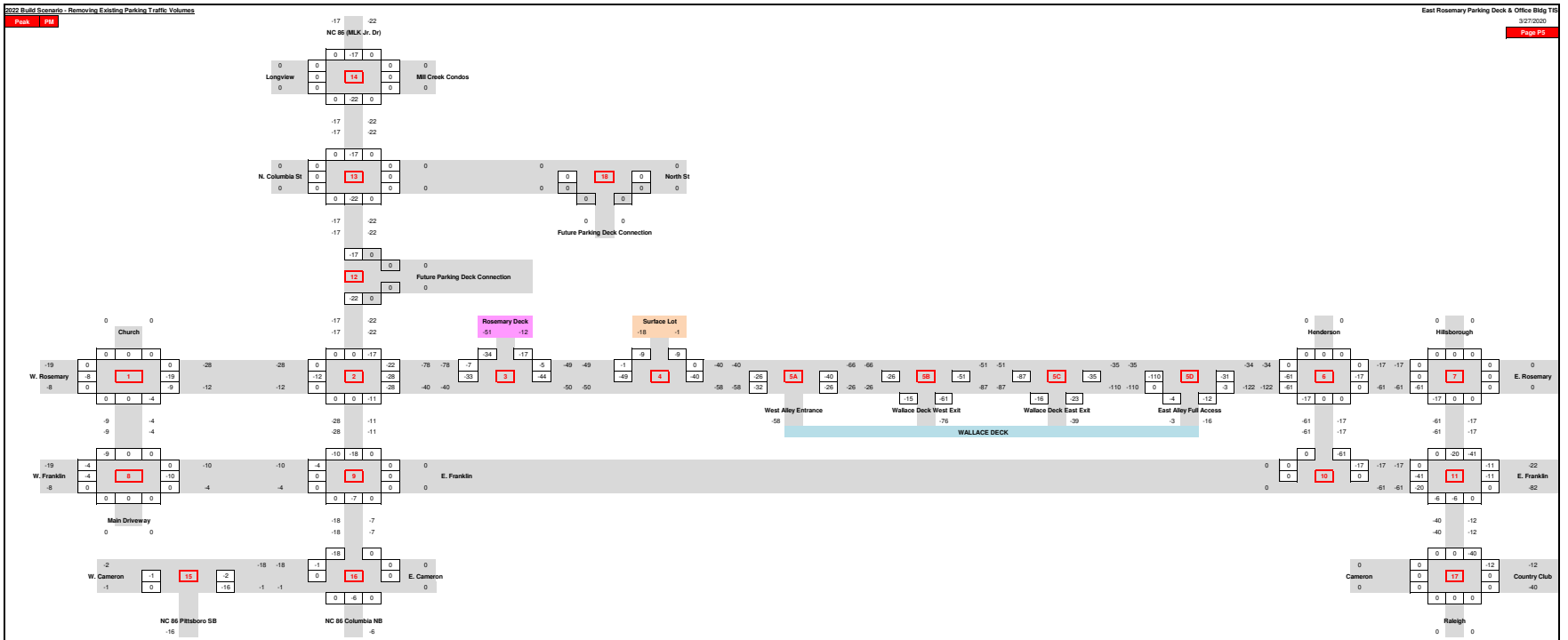


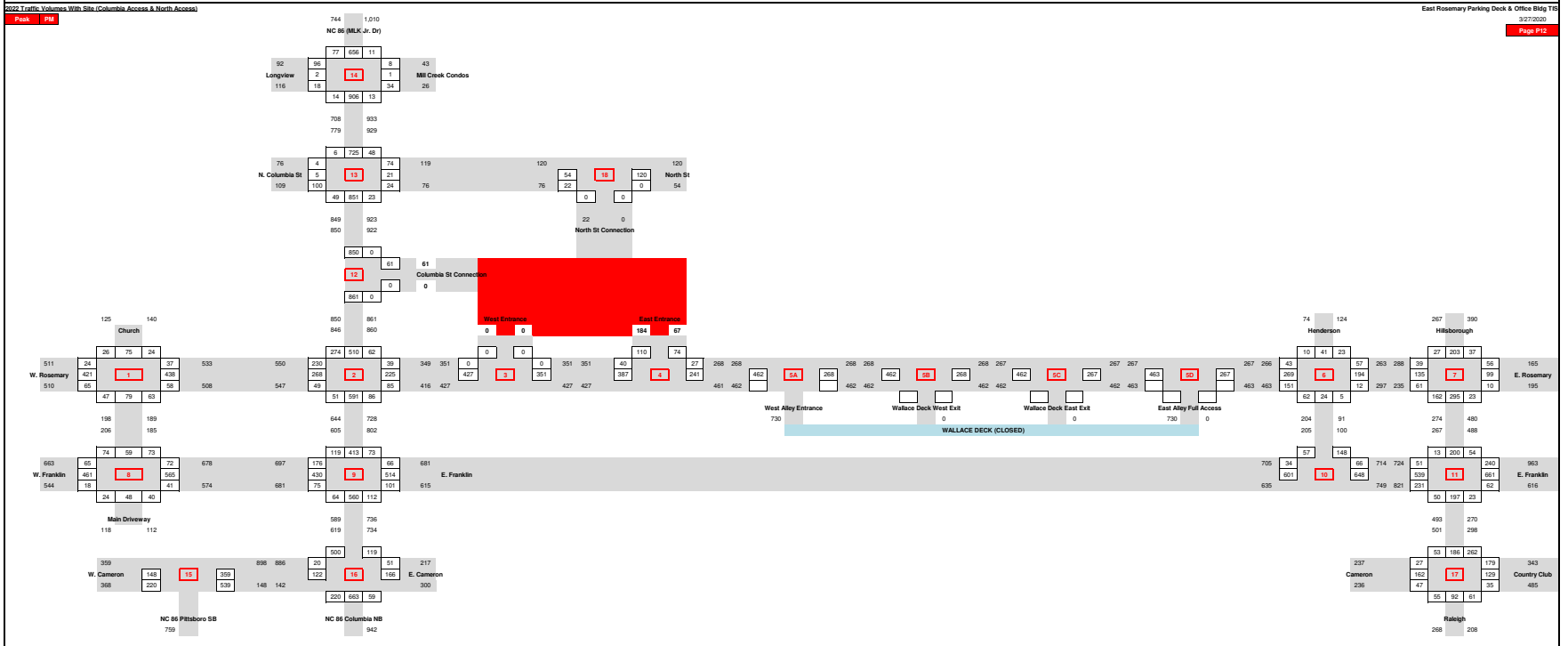
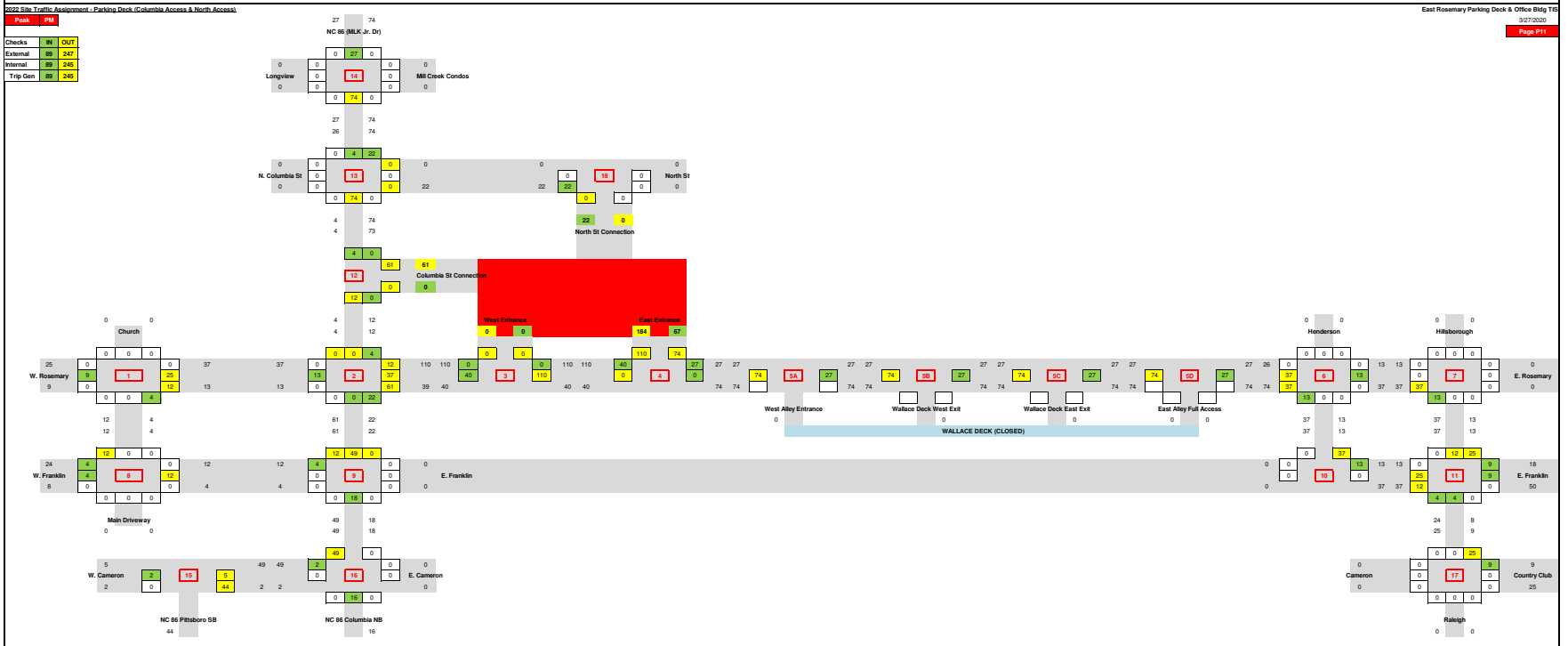
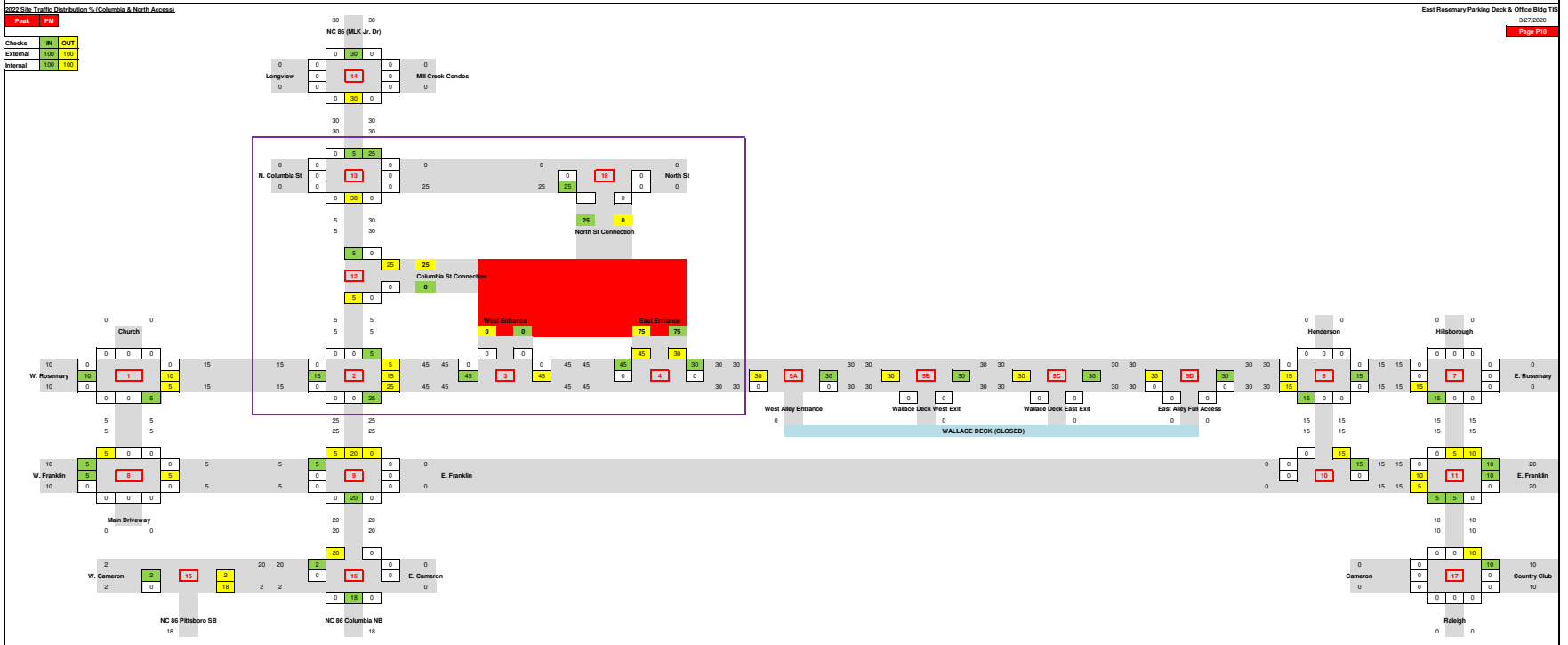
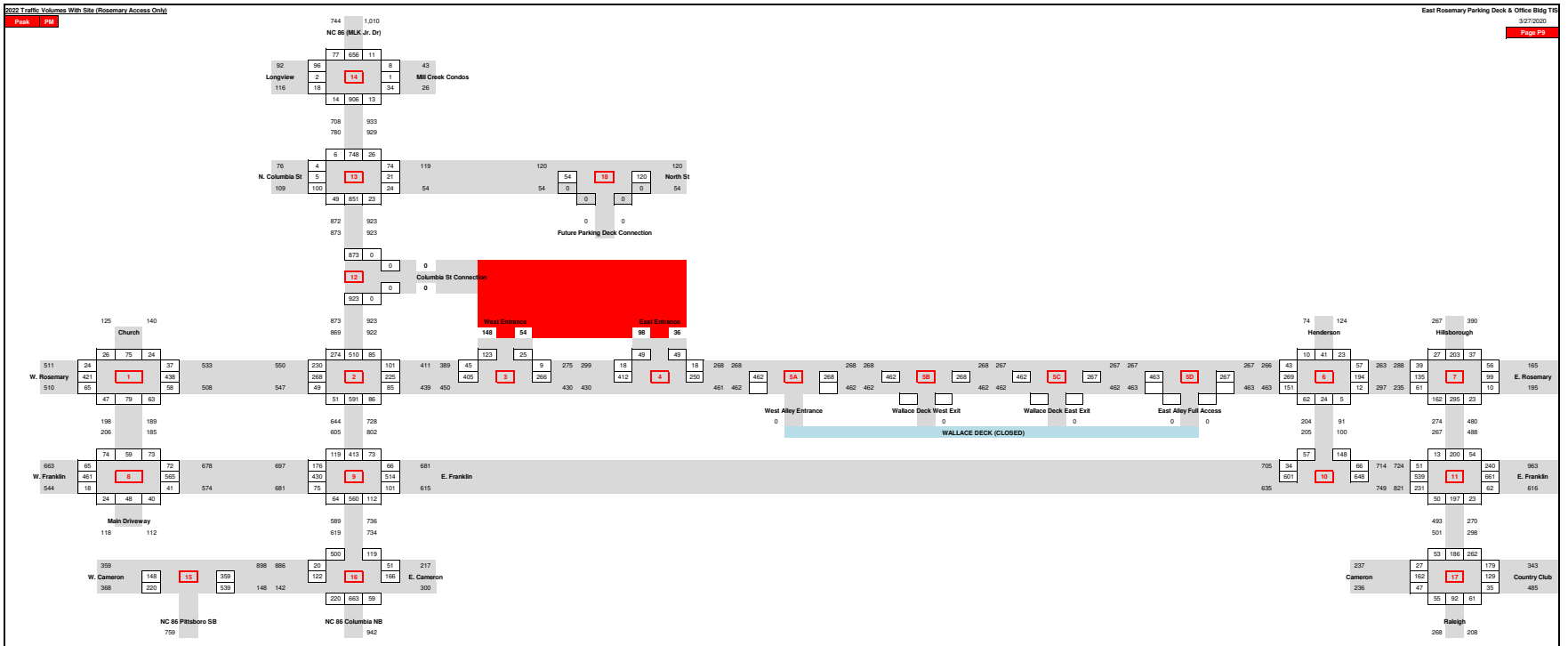














Appendix D – Synchro Signalized Capacity Analysis Output

2020 Existing Base Year

Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2020 Existing AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	278	21	31	283	15	32	24	35	26	38	11
Future Volume (vph)	14	278	21	31	283	15	32	24	35	26	38	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.95			0.97	
Frt		0.991			0.994			0.948			0.981	
Flt Protected		0.998			0.995			0.983			0.983	
Satd. Flow (prot)	0	1734	0	0	1737	0	0	1511	0	0	1602	0
Flt Permitted		0.982			0.950			0.882			0.881	
Satd. Flow (perm)	0	1704	0	0	1654	0	0	1338	0	0	1408	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	20		17	17		20	21		31	31		21
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.84	0.84	0.84	0.72	0.72	0.72
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	16	323	24	35	318	17	38	29	42	36	53	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	363	0	0	370	0	0	109	0	0	104	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.5	35.5		35.4	35.4		15.1	15.1		15.1	15.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		43.0			43.0			10.4			10.4	
Actuated g/C Ratio		0.72			0.72			0.17			0.17	
v/c Ratio		0.30			0.31			0.47			0.43	
Control Delay		5.6			8.4			25.9			26.8	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2020 Existing AM Peak
 Timing Plan: AM Peak

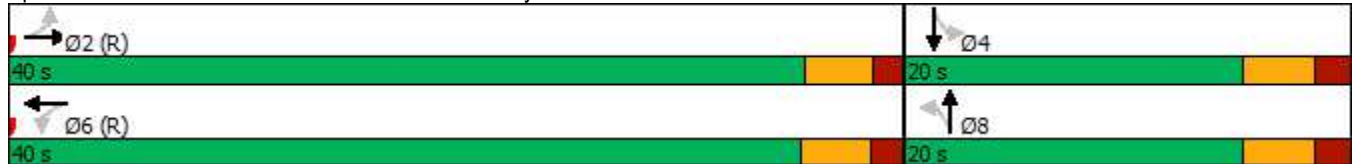


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.6			8.4			25.9			26.8	
LOS		A			A			C			C	
Approach Delay		5.6			8.4			25.9			26.8	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		45			142			34			34	
Queue Length 95th (ft)		97			186			69			52	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1222			1185			334			352	
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		0.30			0.31			0.33			0.30	

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	23 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	11.3
Intersection LOS:	B
Intersection Capacity Utilization	49.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: Church Street & W. Rosemary Street



Lanes, Volumes, Timings
 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

2020 Existing AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	197	21	11	160	30	22	299	33	71	533	164
Future Volume (vph)	145	197	21	11	160	30	22	299	33	71	533	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.99	1.00		0.98	1.00		0.98	0.99		0.93		0.91
Frt		0.986			0.977			0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1639	0	1585	1623	0	1355	2730	0	1485	2673	1285
Flt Permitted	0.291			0.602			0.374			0.502		
Satd. Flow (perm)	433	1639	0	988	1623	0	523	2730	0	731	2673	1169
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			339			353			476	
Travel Time (s)		25.8			11.6			9.6			13.0	
Confl. Peds. (#/hr)	12		16	16		12	19		34	34		19
Peak Hour Factor	0.86	0.86	0.86	0.90	0.90	0.90	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	5%	5%	5%
Adj. Flow (vph)	169	229	24	12	178	33	24	332	37	81	606	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	253	0	12	211	0	24	369	0	81	606	186
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	21.0	53.0		32.0	32.0		15.0	54.0		13.0	52.0	21.0
Total Split (%)	17.5%	44.2%		26.7%	26.7%		12.5%	45.0%		10.8%	43.3%	17.5%
Maximum Green (s)	15.2	47.0		26.0	26.0		9.2	48.2		7.9	46.2	15.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	39.6	39.6		19.9	19.9		67.0	60.4		67.3	62.8	77.4

Lanes, Volumes, Timings
 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

2020 Existing AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.33	0.33		0.17	0.17		0.56	0.50		0.56	0.52	0.64
v/c Ratio	0.64	0.47		0.07	0.78		0.07	0.27		0.18	0.43	0.24
Control Delay	38.9	30.3		36.3	62.8		8.4	11.6		13.8	21.6	10.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.9	30.3		36.3	62.8		8.4	11.6		13.8	21.6	10.2
LOS	D	C		D	E		A	B		B	C	B
Approach Delay		33.7			61.4			11.4			18.4	
Approach LOS		C			E			B			B	
Queue Length 50th (ft)	92	143		8	147		5	47		27	165	56
Queue Length 95th (ft)	133	177		m22	250		m10	65		57	237	105
Internal Link Dist (ft)		677			259			273			396	
Turn Bay Length (ft)	100			150			75			150		400
Base Capacity (vph)	275	655		222	365		370	1375		461	1397	782
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	49	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.61	0.39		0.05	0.58		0.06	0.27		0.18	0.45	0.24

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 84 (70%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 25.4 Intersection LOS: C
 Intersection Capacity Utilization 62.5% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2020 Existing AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	131	56	8	269	16	52	6	8	9	16	5
Future Volume (vph)	5	131	56	8	269	16	52	6	8	9	16	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99			1.00			0.95			0.97	
Frt		0.955			0.993			0.984			0.979	
Flt Protected	0.950				0.999			0.962			0.985	
Satd. Flow (prot)	1593	1584	0	0	1660	0	0	1558	0	0	1559	0
Flt Permitted	0.570				0.993			0.742			0.884	
Satd. Flow (perm)	951	1584	0	0	1650	0	0	1157	0	0	1380	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		156			1195			366			450	
Travel Time (s)		5.3			40.7			12.5			15.3	
Confl. Peds. (#/hr)	4		6	6		4	22		23	23		22
Peak Hour Factor	0.89	0.89	0.89	0.75	0.75	0.75	0.87	0.87	0.87	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	6	147	63	11	359	21	60	7	9	13	24	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	210	0	0	391	0	0	76	0	0	44	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	25.1	25.1		25.1	25.1		25.2	25.2		25.2	25.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.9	4.9			4.9			4.8			4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	44.6	44.6			44.6			9.2			9.2	
Actuated g/C Ratio	0.74	0.74			0.74			0.15			0.15	

Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2020 Existing AM Peak
Timing Plan: AM Peak



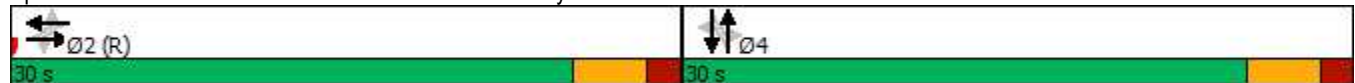
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.01	0.18			0.32			0.43				0.21
Control Delay	2.8	3.0			5.3			26.9				23.9
Queue Delay	0.0	0.0			0.0			0.0				0.0
Total Delay	2.8	3.0			5.3			26.9				23.9
LOS	A	A			A			C				C
Approach Delay		3.0			5.3			26.9				23.9
Approach LOS		A			A			C				C
Queue Length 50th (ft)	1	20			54			36				15
Queue Length 95th (ft)	m2	42			107			26				27
Internal Link Dist (ft)		76			1115			286				370
Turn Bay Length (ft)	85											
Base Capacity (vph)	707	1178			1227			485				579
Starvation Cap Reductn	0	0			0			0				0
Spillback Cap Reductn	0	0			0			0				0
Storage Cap Reductn	0	0			0			0				0
Reduced v/c Ratio	0.01	0.18			0.32			0.16				0.08

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 6 (10%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 8.0
 Intersection Capacity Utilization 42.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2020 Existing AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	2	56	67	0	108	12	173	133	6	21	311	26
Future Volume (vph)	2	56	67	0	108	12	173	133	6	21	311	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00		1.00	1.00	
Frt		0.927			0.986			0.994			0.988	
Flt Protected		0.999					0.950			0.950		
Satd. Flow (prot)	0	1701	0	0	1830	0	1752	1832	0	1752	1814	0
Flt Permitted		0.995					0.407			0.662		
Satd. Flow (perm)	0	1694	0	0	1830	0	751	1832	0	1215	1814	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	6		3	3		6	13		2	2		13
Peak Hour Factor	0.82	0.82	0.82	0.71	0.71	0.71	0.93	0.93	0.93	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	2	68	82	0	152	17	186	143	6	23	346	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	152	0	0	169	0	186	149	0	23	375	0
Turn Type	Perm	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	19.9	19.9		17.0	17.0		11.8	14.8		14.8	14.8	
Total Split (s)	28.0	28.0		28.0	28.0		13.0	32.0		19.0	19.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		21.7%	53.3%		31.7%	31.7%	
Maximum Green (s)	23.1	23.1		23.0	23.0		8.2	27.2		14.2	14.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.9			5.0		4.8	4.8		4.8	4.8	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		10.3			10.2		42.4	43.3		29.8	29.8	
Actuated g/C Ratio		0.17			0.17		0.71	0.72		0.50	0.50	
v/c Ratio		0.52			0.54		0.28	0.11		0.04	0.42	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2020 Existing AM Peak
Timing Plan: AM Peak

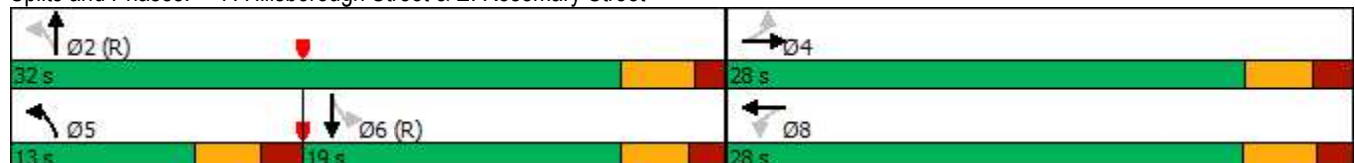


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		20.4			28.8		6.8	5.8		11.5	13.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.1	
Total Delay		20.4			28.8		6.8	5.8		11.5	13.9	
LOS		C			C		A	A		B	B	
Approach Delay		20.4			28.8			6.3			13.8	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		35			57		42	31		4	84	
Queue Length 95th (ft)		49			75		66	54		18	185	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		652			701		672	1323		603	901	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	63	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.23			0.24		0.28	0.11		0.04	0.45	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	12 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.54
Intersection Signal Delay:	14.8
Intersection LOS:	B
Intersection Capacity Utilization:	49.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2020 Existing AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	321	23	10	237	42	2	5	10	20	20	48
Future Volume (vph)	44	321	23	10	237	42	2	5	10	20	20	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.99		0.94	0.98			0.99	0.96		0.96	
Frt		0.990			0.977				0.850		0.927	
Flt Protected	0.950			0.950				0.985			0.989	
Satd. Flow (prot)	1430	2807	0	1431	2751	0	0	1621	1399	0	1466	0
Flt Permitted	0.549			0.512				0.884			0.917	
Satd. Flow (perm)	780	2807	0	725	2751	0	0	1435	1349	0	1352	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			755			285			379	
Travel Time (s)		33.9			25.7			9.7			10.3	
Confl. Peds. (#/hr)	39		57	57		39	57		29	29		57
Peak Hour Factor	0.84	0.84	0.84	0.83	0.83	0.83	0.53	0.53	0.53	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	52	382	27	12	286	51	4	9	19	22	22	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	409	0	12	337	0	0	13	19	0	96	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%	48.3%	48.3%	48.3%	
Maximum Green (s)	25.4	25.4		25.4	25.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	43.5	43.5		43.5	43.5			10.2	10.2		10.1	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2020 Existing AM Peak
 Timing Plan: AM Peak

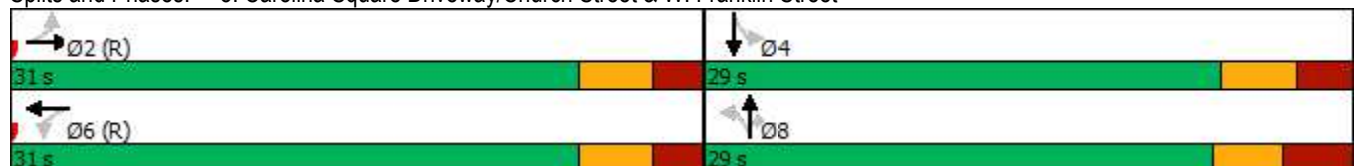


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.17	0.17			0.17
v/c Ratio	0.09	0.20		0.02	0.17			0.05	0.08			0.42
Control Delay	4.8	4.3		4.4	3.4			19.9	20.4			22.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	4.8	4.3		4.4	3.4			19.9	20.4			22.2
LOS	A	A		A	A			B	C			C
Approach Delay		4.4			3.4			20.2				22.2
Approach LOS		A			A			C				C
Queue Length 50th (ft)	5	23		1	10			4	6			30
Queue Length 95th (ft)	18	45		m9	68			9	12			54
Internal Link Dist (ft)		913			675			205				299
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	565	2033		525	1992			574	539			540
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	0.09	0.20		0.02	0.17			0.02	0.04			0.18

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 6.4
 Intersection LOS: A
 Intersection Capacity Utilization 55.5%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.





















Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2020 Existing AM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	277	28	64	270	45	29	271	85	35	439	72
Future Volume (vph)	60	277	28	64	270	45	29	271	85	35	439	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.88	0.99		0.95	0.97		0.98	0.96		0.91	0.99	
Frt		0.986			0.978			0.964			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1372	2980	0	1410	2674	0	1342	2576	0	1346	2613	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1202	2980	0	1343	2674	0	1315	2576	0	1219	2613	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		755			941			981			353	
Travel Time (s)		25.7			32.1			26.8			9.6	
Confl. Peds. (#/hr)	125		49	49		125	29		98	98		29
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	75	346	35	74	310	52	31	291	91	41	516	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	381	0	74	362	0	31	382	0	41	601	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2		15.0	28.0		15.0	28.1	
Total Split (s)	22.0	38.0		22.0	38.0		22.0	38.0		22.0	38.0	
Total Split (%)	18.3%	31.7%		18.3%	31.7%		18.3%	31.7%		18.3%	31.7%	
Maximum Green (s)	16.6	31.8		16.1	31.8		16.1	32.1		16.1	32.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2		2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2		-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	3.0		1.0	3.0		1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	10.9	54.2		11.1	54.4		8.6	30.8		9.1	33.9	

Lanes, Volumes, Timings

2020 Existing AM Peak

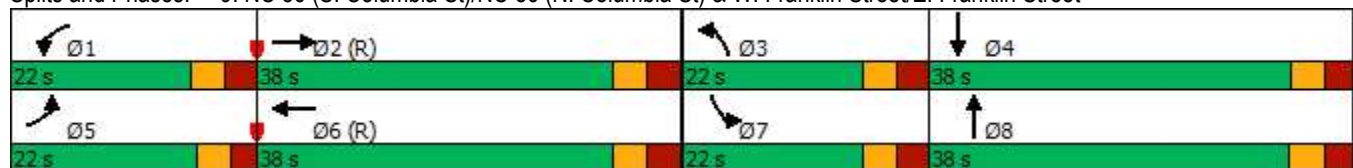
9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.09	0.45		0.09	0.45		0.07	0.26		0.08	0.28	
v/c Ratio	0.60	0.28		0.57	0.30		0.33	0.58		0.41	0.82	
Control Delay	70.2	29.2		78.2	15.1		36.2	34.9		92.5	30.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	
Total Delay	70.2	29.2		78.2	15.1		36.2	34.9		92.5	31.0	
LOS	E	C		E	B		D	C		F	C	
Approach Delay		35.9			25.8			35.0			34.9	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	49	103		48	111		24	153		30	234	
Queue Length 95th (ft)	93	183		103	71		m38	211		69	124	
Internal Link Dist (ft)		675			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	194	1346		199	1211		190	736		190	770	
Starvation Cap Reductn	0	0		0	0		0	0		0	8	
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	0.39	0.28		0.37	0.30		0.16	0.52		0.22	0.79	

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 42 (35%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 33.1 Intersection LOS: C
 Intersection Capacity Utilization 65.0% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2020 Existing AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	15	359	376	57	59	17
Future Volume (vph)	15	359	376	57	59	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.95	
Frt			0.980		0.969	
Flt Protected		0.998			0.963	
Satd. Flow (prot)	0	3223	2776	0	1430	0
Flt Permitted		0.934			0.963	
Satd. Flow (perm)	0	3013	2776	0	1384	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	26			26	44	87
Peak Hour Factor	0.91	0.91	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	5%	5%	5%	5%	4%	4%
Parking (#/hr)						0
Adj. Flow (vph)	16	395	418	63	75	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	411	481	0	97	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	17.0	17.0	22.0		25.0	
Total Split (s)	35.0	35.0	35.0		25.0	
Total Split (%)	58.3%	58.3%	58.3%		41.7%	
Maximum Green (s)	28.8	28.8	28.9		19.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		44.8	44.8		8.6	
Actuated g/C Ratio		0.75	0.75		0.14	
v/c Ratio		0.18	0.23		0.48	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2020 Existing AM Peak
 Timing Plan: AM Peak

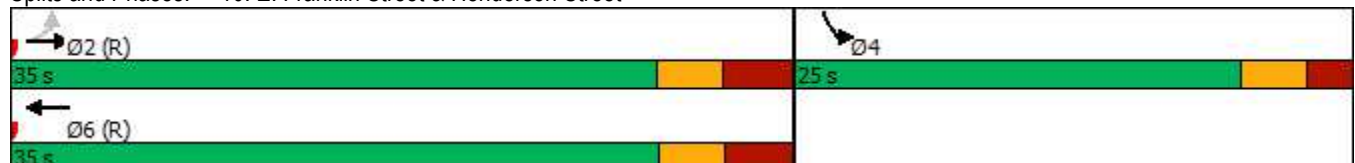


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		5.8	5.4		24.1	
Queue Delay		0.0	0.0		0.0	
Total Delay		5.8	5.4		24.1	
LOS		A	A		C	
Approach Delay		5.8	5.4		24.1	
Approach LOS		A	A		C	
Queue Length 50th (ft)		84	19		29	
Queue Length 95th (ft)		95	160		38	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		2251	2074		476	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.18	0.23		0.20	

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	30 (50%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.48
Intersection Signal Delay:	7.4
Intersection LOS:	A
Intersection Capacity Utilization:	46.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: E. Franklin Street & Henderson Street



Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2020 Existing AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	301	102	41	401	110	74	185	23	42	316	18
Future Volume (vph)	19	301	102	41	401	110	74	185	23	42	316	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99	0.99			0.99		0.99	1.00	
Fr _t		0.962			0.968			0.989			0.992	
Fl _t Protected	0.950			0.950				0.987		0.950		
Satd. Flow (prot)	1539	2929	0	1578	3145	0	0	1770	0	1627	1695	0
Fl _t Permitted	0.412			0.461				0.584		0.459		
Satd. Flow (perm)	664	2929	0	757	3145	0	0	1043	0	779	1695	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	9		16	16		9	25		11	11		25
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.83	0.83	0.83	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	22	350	119	45	436	120	89	223	28	44	329	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	469	0	45	556	0	0	340	0	44	348	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4				8
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4		8
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	45.0	45.0		45.0	45.0		14.0	75.0		75.0	61.0	
Total Split (%)	37.5%	37.5%		37.5%	37.5%		11.7%	62.5%		62.5%	50.8%	
Maximum Green (s)	39.7	39.7		39.7	39.7		7.8	68.6		68.6	54.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	68.7	68.7		68.7	68.7			41.3		41.3	41.3	

Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2020 Existing AM Peak
 Timing Plan: AM Peak

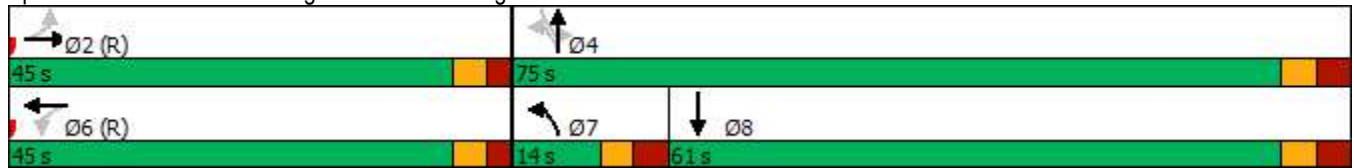


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.34		0.34	0.34	
v/c Ratio	0.06	0.28		0.10	0.31			0.95		0.16	0.60	
Control Delay	19.1	15.8		16.3	15.7			73.2		30.1	41.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	1.4	
Total Delay	19.1	15.8		16.3	15.7			73.2		30.1	42.7	
LOS	B	B		B	B			E		C	D	
Approach Delay		16.0			15.7			73.2			41.3	
Approach LOS		B			B			E			D	
Queue Length 50th (ft)	5	86		15	111			255		28	258	
Queue Length 95th (ft)	28	157		45	193			284		46	351	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	379	1676		433	1800			608		454	791	
Starvation Cap Reductn	0	0		0	0			0		0	259	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.06	0.28		0.10	0.31			0.56		0.10	0.65	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 91 (76%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 32.0
 Intersection LOS: C
 Intersection Capacity Utilization 74.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street



Lanes, Volumes, Timings
 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

2020 Existing AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	75	0	10	6	0	5	2	412	5	0	666	65
Future Volume (vph)	75	0	10	6	0	5	2	412	5	0	666	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		1.00			0.99		1.00	1.00			1.00	
Frt		0.984			0.944			0.998			0.987	
Flt Protected		0.958			0.972		0.950					
Satd. Flow (prot)	0	1735	0	0	1701	0	1686	3364	0	1846	3452	0
Flt Permitted		0.742			0.815		0.290					
Satd. Flow (perm)	0	1344	0	0	1417	0	513	3364	0	1846	3452	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)			16	16			4		4	4		4
Peak Hour Factor	0.52	0.52	0.52	0.92	0.92	0.92	0.93	0.93	0.93	0.84	0.84	0.84
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	144	0	19	7	0	5	2	443	5	0	793	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	163	0	0	12	0	2	448	0	0	870	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		11.5			11.4		21.4	21.4			21.4	
Actuated g/C Ratio		0.27			0.27		0.50	0.50			0.50	

Lanes, Volumes, Timings
 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

2020 Existing AM Peak
 Timing Plan: AM Peak

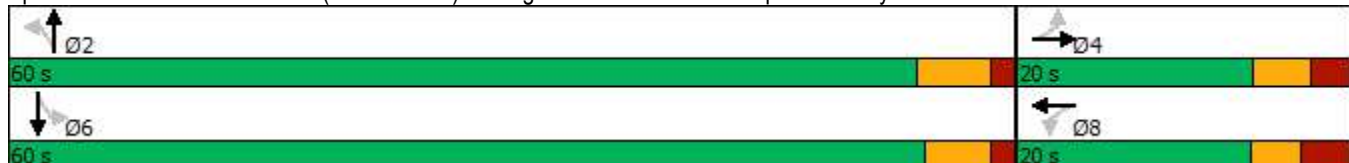


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.45			0.03		0.01	0.27				0.51
Control Delay		17.5			12.0		6.5	7.2				8.9
Queue Delay		0.0			0.0		0.0	0.0				0.0
Total Delay		17.5			12.0		6.5	7.2				8.9
LOS		B			B		A	A				A
Approach Delay		17.5			12.0			7.2				8.9
Approach LOS		B			B			A				A
Queue Length 50th (ft)		29			2		0	28				64
Queue Length 95th (ft)		41			11		3	58				108
Internal Link Dist (ft)		371			258			2028				704
Turn Bay Length (ft)							225					
Base Capacity (vph)		475			497		513	3364				3452
Starvation Cap Reductn		0			0		0	0				0
Spillback Cap Reductn		0			0		0	0				0
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		0.34			0.02		0.00	0.13				0.25

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	43
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	9.4
Intersection LOS:	A
Intersection Capacity Utilization:	41.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2020 Existing AM Peak
 Timing Plan: AM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	111	156	578	131	0	0		
Future Volume (vph)	111	156	578	131	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.94		0.90					
Frt	0.921							
Flt Protected			0.950					
Satd. Flow (prot)	1429	0	2837	1592	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1429	0	2558	1592	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		57	57					
Peak Hour Factor	0.81	0.81	0.87	0.87	0.90	0.90		
Heavy Vehicles (%)	2%	2%	9%	9%	2%	2%		
Adj. Flow (vph)	137	193	664	151	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	330	0	664	151	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	17.0			15.0			13.0	20.0
Total Split (s)	20.0			40.0			20.0	20.0
Total Split (%)	33.3%			66.7%			33%	33%
Maximum Green (s)	14.9			35.0			14.9	16.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	15.0		35.0	40.5				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2020 Existing AM Peak
 Timing Plan: AM Peak

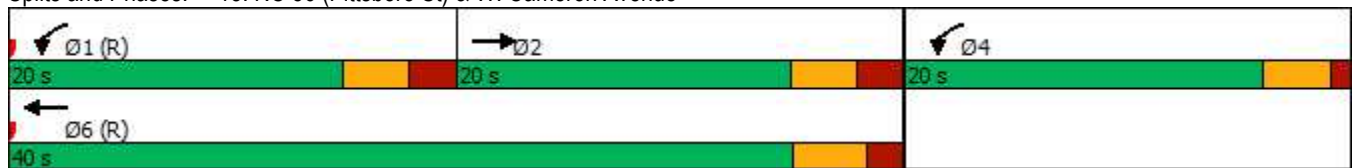


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.25		0.58	0.68				
v/c Ratio	0.92		0.40	0.14				
Control Delay	58.1		11.3	5.0				
Queue Delay	0.0		0.0	0.0				
Total Delay	58.1		11.3	5.0				
LOS	E		B	A				
Approach Delay	58.1			10.2				
Approach LOS	E			B				
Queue Length 50th (ft)	116		151	34				
Queue Length 95th (ft)	#214		229	m61				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	357		1612	1073				
Starvation Cap Reductn	0		0	0				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.92		0.41	0.14				

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 50 (83%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 24.0
 Intersection LOS: C
 Intersection Capacity Utilization 46.3%
 ICU Level of Service A
 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: 15: NC 86 (Pittsboro St) & W. Cameron Avenue

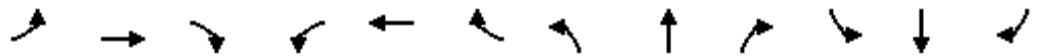


Lanes, Volumes, Timings

2020 Existing AM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	89	0	0	93	20	96	348	42	65	0	516
Future Volume (vph)	12	89	0	0	93	20	96	348	42	65	0	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.95				0.99		0.79	0.94		0.73		0.77
Frt				0.976			0.984					0.850
Flt Protected	0.950						0.950	0.999		0.950		
Satd. Flow (prot)	1532	1668	0	0	1563	0	1248	2442	0	1413	0	2302
Flt Permitted	0.527						0.950	0.999		0.950		
Satd. Flow (perm)	811	1668	0	0	1563	0	982	2430	0	1038	0	1776
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	39		102	102		39	71		107	107		71
Peak Hour Factor	0.79	0.79	0.79	0.83	0.83	0.83	0.86	0.86	0.86	0.89	0.89	0.89
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	15	113	0	0	112	24	112	405	49	73	0	580
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	15	113	0	0	136	0	101	465	0	73	0	580
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	31.0	31.0			31.0		26.0	26.0		35.0		35.0
Total Split (%)	25.8%	25.8%			25.8%		21.7%	21.7%		29.2%		29.2%
Maximum Green (s)	24.8	24.8			24.8		20.1	20.1		29.4		29.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	16.3	16.3			16.3		48.3	48.3		40.4		40.4

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings
 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

2020 Existing AM Peak
 Timing Plan: AM Peak

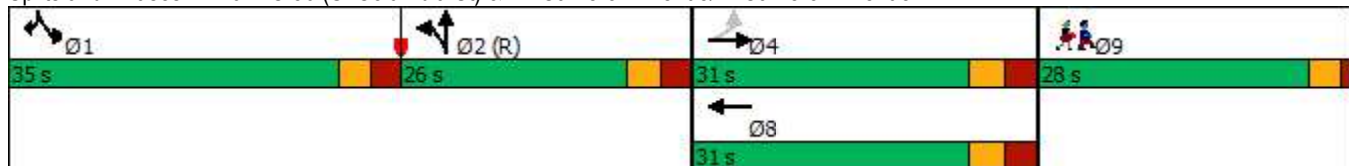


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14			0.14		0.40	0.40		0.34		0.34
v/c Ratio	0.14	0.50			0.64		0.20	0.47		0.15		0.75
Control Delay	30.8	35.9			62.4		26.9	29.9		23.8		28.0
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	30.8	35.9			62.4		26.9	29.9		23.8		28.0
LOS	C	D			E		C	C		C		C
Approach Delay		35.3			62.4			29.3				27.5
Approach LOS		D			E			C				C
Queue Length 50th (ft)	8	60			101		54	143		25		114
Queue Length 95th (ft)	m7	m51			146		107	210		m34		135
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	175	361			338		502	982		476		775
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	0.09	0.31			0.40		0.20	0.47		0.15		0.75

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 52 (43%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 32.1
 Intersection LOS: C
 Intersection Capacity Utilization 65.7%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2020 Existing AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	23	43	31	27	139	219	24	44	17	279	145	47
Future Volume (vph)	23	43	31	27	139	219	24	44	17	279	145	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.98	0.98		0.91	0.96		0.89	0.95	
Frt		0.957			0.908			0.958			0.963	
Flt Protected		0.988		0.950			0.950			0.950		
Satd. Flow (prot)	0	1493	0	1569	1468	0	1492	1446	0	1569	1509	0
Flt Permitted		0.832		0.575			0.630			0.456		
Satd. Flow (perm)	0	1255	0	935	1468	0	896	1446	0	672	1509	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	3		6	6		3	31		25	25		31
Peak Hour Factor	0.71	0.71	0.71	0.84	0.84	0.84	0.79	0.79	0.79	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	10%	10%	10%	3%	3%	3%
Adj. Flow (vph)	32	61	44	32	165	261	30	56	22	297	154	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	137	0	32	426	0	30	78	0	297	204	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		19.8		23.7	23.7		15.3	10.0		24.9	21.0	
Actuated g/C Ratio		0.33		0.40	0.40		0.26	0.17		0.42	0.35	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2020 Existing AM Peak
 Timing Plan: AM Peak

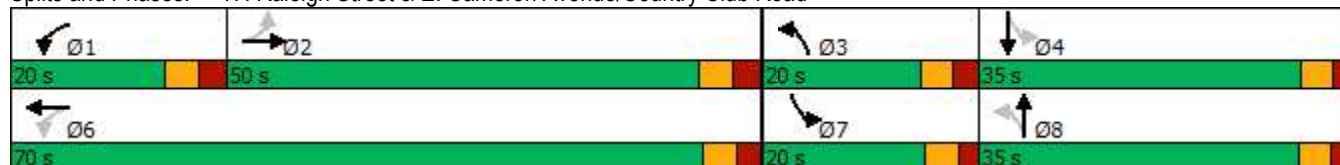


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.33		0.07	0.73		0.10	0.32		0.60	0.39	
Control Delay		22.1		12.4	24.8		14.6	31.7		20.3	21.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		22.1		12.4	24.8		14.6	31.7		20.3	21.9	
LOS		C		B	C		B	C		C	C	
Approach Delay		22.1			24.0			27.0			21.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		34		7	135		6	27		70	45	
Queue Length 95th (ft)		78		22	231		23	68		#185	161	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		939		575	1381		529	817		563	853	
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		0.15		0.06	0.31		0.06	0.10		0.53	0.24	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 59.9
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 22.8
 Intersection LOS: C
 Intersection Capacity Utilization 60.3%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road



Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2020 Existing Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	6	301	28	38	331	24	23	41	54	14	32	10
Future Volume (vph)	6	301	28	38	331	24	23	41	54	14	32	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.92			0.95	
Frt		0.989			0.992			0.938			0.975	
Flt Protected		0.999			0.995			0.990			0.988	
Satd. Flow (prot)	0	1709	0	0	1747	0	0	1479	0	0	1559	0
Flt Permitted		0.994			0.943			0.919			0.917	
Satd. Flow (perm)	0	1699	0	0	1649	0	0	1332	0	0	1421	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	22		24	24		22	75		39	39		75
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	342	32	41	356	26	25	45	59	22	50	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	381	0	0	423	0	0	129	0	0	88	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		4			
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	43.0	43.0		43.0	43.0		22.0	22.0		22.0	22.0	
Total Split (%)	66.2%	66.2%		66.2%	66.2%		33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	38.5	38.5		38.4	38.4		17.1	17.1		17.1	17.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			11.4			11.4	
Actuated g/C Ratio		0.72			0.72			0.18			0.18	
v/c Ratio		0.31			0.36			0.55			0.35	
Control Delay		5.8			3.0			40.3			26.2	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2020 Existing Noon Peak
 Timing Plan: Noon Peak

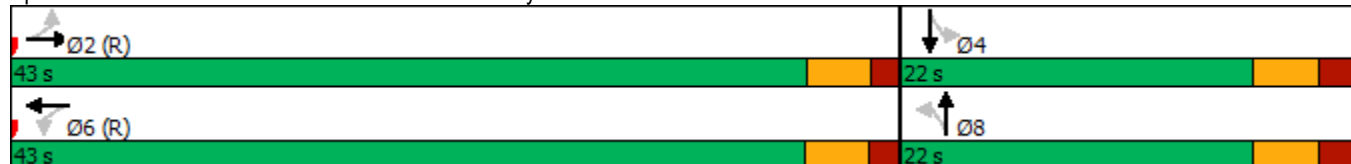


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.8			3.0			40.3			26.2	
LOS		A			A			D			C	
Approach Delay		5.8			3.0			40.3			26.3	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)		52			55			65			31	
Queue Length 95th (ft)		113			39			108			43	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1228			1191			348			371	
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		0.31			0.36			0.37			0.24	

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	10.8
Intersection LOS:	B
Intersection Capacity Utilization:	64.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: Church Street & W. Rosemary Street



Lanes, Volumes, Timings

2020 Existing Noon Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	187	47	39	199	49	43	298	97	71	338	168
Future Volume (vph)	145	187	47	39	199	49	43	298	97	71	338	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.97	0.99		0.96	0.98		0.85	0.88		0.77		0.66
Frt		0.970			0.970			0.963				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1594	0	1585	1589	0	1355	2371	0	1485	2673	1285
Flt Permitted	0.238			0.595			0.497			0.465		
Satd. Flow (perm)	345	1594	0	949	1589	0	599	2371	0	559	2673	850
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			339			353			476	
Travel Time (s)		25.8			11.6			9.6			13.0	
Confl. Peds. (#/hr)	53		41	41		53	80		129	129		80
Peak Hour Factor	0.88	0.88	0.88	0.85	0.85	0.85	0.98	0.98	0.98	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	5%	5%	5%
Adj. Flow (vph)	165	213	53	46	234	58	44	304	99	83	393	195
Shared Lane Traffic (%)												
Lane Group Flow (vph)	165	266	0	46	292	0	44	403	0	83	393	195
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	20.0	63.0		43.0	43.0		15.0	52.0		15.0	52.0	20.0
Total Split (%)	15.4%	48.5%		33.1%	33.1%		11.5%	40.0%		11.5%	40.0%	15.4%
Maximum Green (s)	14.2	57.0		37.0	37.0		9.2	46.2		9.9	46.2	14.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	47.7	47.7		28.5	28.5		67.7	59.3		68.4	61.8	76.0

Lanes, Volumes, Timings
 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

2020 Existing Noon Peak
 Timing Plan: Noon Peak

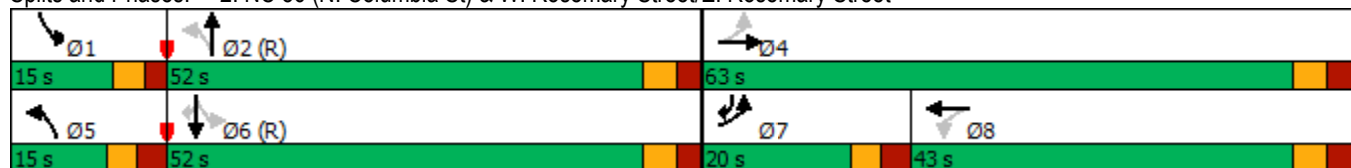


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.37	0.37		0.22	0.22		0.52	0.46		0.53	0.48	0.58
v/c Ratio	0.68	0.45		0.22	0.84		0.12	0.37		0.24	0.31	0.36
Control Delay	43.1	34.1		46.7	74.3		12.4	14.8		17.5	24.3	17.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.4		0.0	0.0	0.0
Total Delay	43.1	34.1		46.7	74.3		12.4	15.2		17.5	24.3	17.1
LOS	D	C		D	E		B	B		B	C	B
Approach Delay		37.5			70.5			14.9			21.4	
Approach LOS		D			E			B			C	
Queue Length 50th (ft)	112	189		36	249		7	37		32	110	73
Queue Length 95th (ft)	124	235		m66	316		m30	136		66	164	133
Internal Link Dist (ft)		677			259			273			396	
Turn Bay Length (ft)	100			150			75			150		400
Base Capacity (vph)	251	711		277	464		380	1081		372	1271	552
Starvation Cap Reductn	0	0		0	0		0	274		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.66	0.37		0.17	0.63		0.12	0.50		0.22	0.31	0.35

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 34 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 32.4
 Intersection LOS: C
 Intersection Capacity Utilization 66.3%
 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 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2020 Existing Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	193	133	15	203	30	61	29	11	9	29	13
Future Volume (vph)	15	193	133	15	203	30	61	29	11	9	29	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.97			0.99			0.84			0.92	
Frt		0.939			0.984			0.986			0.966	
Flt Protected	0.950				0.997			0.971			0.991	
Satd. Flow (prot)	1593	1526	0	0	1628	0	0	1582	0	0	1470	0
Flt Permitted	0.597				0.976			0.780			0.940	
Satd. Flow (perm)	960	1526	0	0	1591	0	0	1084	0	0	1373	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		156			1195			366			450	
Travel Time (s)		5.3			40.7			12.5			15.3	
Confl. Peds. (#/hr)	21		19	19		21	106		47	47		106
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.68	0.68	0.68	0.85	0.85	0.85
Adj. Flow (vph)	16	201	139	16	214	32	90	43	16	11	34	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	340	0	0	262	0	0	149	0	0	60	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	44.0	44.0		44.0	44.0		21.0	21.0		21.0	21.0	
Total Split (%)	67.7%	67.7%		67.7%	67.7%		32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	39.1	39.1		39.1	39.1		16.2	16.2		16.2	16.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.9	4.9			4.9			4.8			4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	46.1	46.1			46.1			12.7			12.7	
Actuated g/C Ratio	0.71	0.71			0.71			0.20			0.20	
v/c Ratio	0.02	0.31			0.23			0.70			0.22	

Lanes, Volumes, Timings
 6: Henderson Street & E. Rosemary Street

2020 Existing Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	4.5	6.5			4.6			37.8			22.6	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	4.5	6.5			4.6			37.8			22.6	
LOS	A	A			A			D			C	
Approach Delay		6.4			4.6			37.8			22.6	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	2	82			36			60			20	
Queue Length 95th (ft)	m6	130			73			34			43	
Internal Link Dist (ft)		76			1115			286			370	
Turn Bay Length (ft)	85											
Base Capacity (vph)	680	1082			1128			270			342	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.02	0.31			0.23			0.55			0.18	

Intersection Summary

Area Type: CBD
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 12.7
 Intersection LOS: B
 Intersection Capacity Utilization 49.4%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2020 Existing Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	19	88	94	3	50	9	166	146	9	16	184	21
Future Volume (vph)	19	88	94	3	50	9	166	146	9	16	184	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98		0.92	1.00		0.99	0.98	
Frt		0.937			0.980			0.991			0.985	
Flt Protected		0.995			0.998		0.950			0.950		
Satd. Flow (prot)	0	1660	0	0	1791	0	1770	1842	0	1719	1750	0
Flt Permitted		0.968			0.981		0.525			0.646		
Satd. Flow (perm)	0	1602	0	0	1756	0	903	1842	0	1154	1750	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	35		35	35		35	50		5	5		50
Peak Hour Factor	0.93	0.93	0.93	0.78	0.78	0.78	0.88	0.88	0.88	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	20	95	101	4	64	12	189	166	10	18	202	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	216	0	0	80	0	189	176	0	18	225	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	19.9	19.9		17.0	17.0		13.0	14.8		14.8	14.8	
Total Split (s)	30.0	30.0		30.0	30.0		15.0	35.0		20.0	20.0	
Total Split (%)	46.2%	46.2%		46.2%	46.2%		23.1%	53.8%		30.8%	30.8%	
Maximum Green (s)	25.1	25.1		25.0	25.0		10.2	30.2		15.2	15.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.9			5.0		4.8	4.8		4.8	4.8	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		13.2			13.1		42.1	42.1		29.2	29.2	
Actuated g/C Ratio		0.20			0.20		0.65	0.65		0.45	0.45	
v/c Ratio		0.67			0.23		0.27	0.15		0.03	0.29	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2020 Existing Noon Peak
Timing Plan: Noon Peak

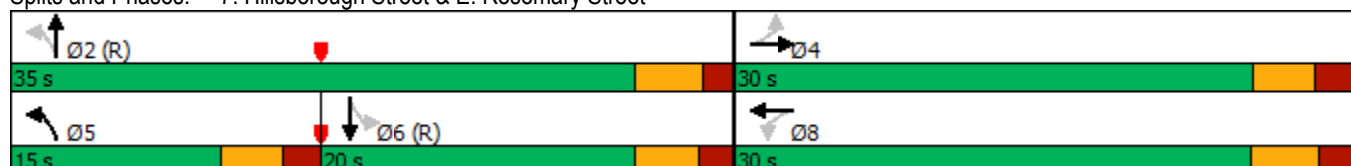


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		44.6			21.5		6.4	5.6		13.6	14.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		44.6			21.5		6.4	5.6		13.6	14.5	
LOS		D			C		A	A		B	B	
Approach Delay		44.6			21.5			6.0			14.4	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		103			27		41	38		4	52	
Queue Length 95th (ft)		141			45		66	61		18	124	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		618			675		722	1194		519	787	
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		0.35			0.12		0.26	0.15		0.03	0.29	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	18.9
Intersection LOS:	B
Intersection Capacity Utilization	51.7%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2020 Existing Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	346	25	31	318	67	10	10	22	23	23	51
Future Volume (vph)	49	346	25	31	318	67	10	10	22	23	23	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.79	0.97		0.72	0.93			0.92	0.92		0.87	
Fr _t		0.990			0.974				0.850		0.929	
Fl _t Protected	0.950			0.950				0.976			0.988	
Satd. Flow (prot)	1443	2759	0	1472	2674	0	0	1669	1454	0	1343	0
Fl _t Permitted	0.505			0.503				0.860			0.917	
Satd. Flow (perm)	607	2759	0	564	2674	0	0	1346	1339	0	1227	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			755			285			379	
Travel Time (s)		33.9			25.7			9.7			10.3	
Confl. Peds. (#/hr)	150		248	248		150	225		77	77		225
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.81	0.81	0.81	0.71	0.71	0.71
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	56	398	29	34	349	74	12	12	27	32	32	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	427	0	34	423	0	0	24	27	0	136	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	36.0	36.0		36.0	36.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	55.4%	55.4%		55.4%	55.4%		44.6%	44.6%	44.6%	44.6%	44.6%	
Maximum Green (s)	30.4	30.4		30.4	30.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	45.9	45.9		45.9	45.9			12.8	12.8		12.7	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2020 Existing Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.20	0.20		0.20	
v/c Ratio	0.13	0.22		0.09	0.22			0.09	0.10		0.57	
Control Delay	6.7	5.4		6.1	6.8			19.9	20.2		38.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	6.7	5.4		6.1	6.8			19.9	20.2		38.5	
LOS	A	A		A	A			B	C		D	
Approach Delay		5.6			6.8			20.1			38.5	
Approach LOS		A			A			C			D	
Queue Length 50th (ft)	7	30		15	106			8	9		60	
Queue Length 95th (ft)	25	61		m10	41			20	22		67	
Internal Link Dist (ft)		913			675			205			299	
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	428	1948		398	1888			496	494		453	
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	0.13	0.22		0.09	0.22			0.05	0.05		0.30	

Intersection Summary

Area Type: CBD
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 10.7
 Intersection LOS: B
 Intersection Capacity Utilization 60.8%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2020 Existing Noon Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	292	45	80	302	85	60	266	88	49	288	80
Future Volume (vph)	95	292	45	80	302	85	60	266	88	49	288	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.82	0.96		0.82	0.93		0.89	0.91		0.79	0.95	
Frt		0.980			0.967			0.963			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1372	2854	0	1437	2574	0	1342	2441	0	1346	2481	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1128	2854	0	1174	2574	0	1190	2441	0	1065	2481	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		755			941			981			353	
Travel Time (s)		25.7			32.1			26.8			9.6	
Confl. Peds. (#/hr)	251		248	248		251	117		321	321		117
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	119	365	56	92	347	98	65	286	95	58	339	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	421	0	92	445	0	65	381	0	58	433	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2		15.0	28.0		15.0	28.1	
Total Split (s)	25.0	32.0		25.0	32.0		25.0	48.0		25.0	48.0	
Total Split (%)	19.2%	24.6%		19.2%	24.6%		19.2%	36.9%		19.2%	36.9%	
Maximum Green (s)	19.6	25.8		19.1	25.8		19.1	42.1		19.1	42.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2		2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2		-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	3.0		1.0	3.0		1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	15.1	60.1		12.9	57.8		11.1	29.2		10.5	28.5	

Lanes, Volumes, Timings

2020 Existing Noon Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

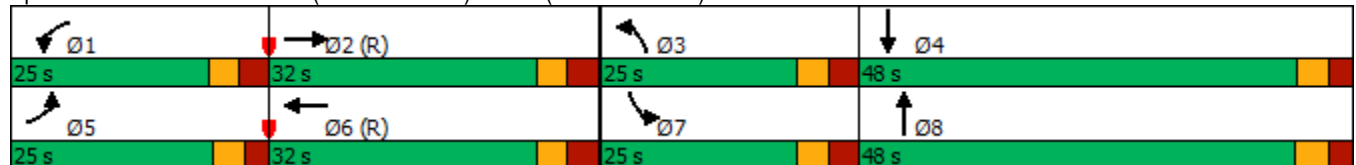


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.12	0.46		0.10	0.44		0.09	0.22		0.08	0.22	
v/c Ratio	0.75	0.32		0.65	0.39		0.57	0.70		0.54	0.80	
Control Delay	86.8	26.7		62.1	28.4		73.7	37.6		91.7	41.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	86.8	26.7		62.1	28.4		73.7	37.6		91.7	41.3	
LOS	F	C		E	C		E	D		F	D	
Approach Delay		39.9			34.2			42.8			47.2	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	100	105		57	151		31	161		52	93	
Queue Length 95th (ft)	134	189		89	236		80	204		94	93	
Internal Link Dist (ft)		675			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	215	1318		221	1145		206	807		207	820	
Starvation Cap Reductn	0	0		0	0		0	0		0	11	
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	0.55	0.32		0.42	0.39		0.32	0.47		0.28	0.54	

Intersection Summary

Area Type:	CBD
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	104 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	40.8
Intersection LOS:	D
Intersection Capacity Utilization:	65.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2020 Existing Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	46	370	407	60	100	78
Future Volume (vph)	46	370	407	60	100	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		0.99	0.97		0.79	
Frt			0.981		0.941	
Flt Protected		0.995			0.973	
Satd. Flow (prot)	0	3213	2733	0	1255	0
Flt Permitted		0.864			0.973	
Satd. Flow (perm)	0	2751	2733	0	1161	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	119			119	130	370
Peak Hour Factor	0.95	0.95	0.92	0.92	0.87	0.87
Heavy Vehicles (%)	5%	5%	4%	4%	2%	2%
Parking (#/hr)						0
Adj. Flow (vph)	48	389	442	65	115	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	437	507	0	205	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	17.0	17.0	22.0		25.0	
Total Split (s)	40.0	40.0	40.0		25.0	
Total Split (%)	61.5%	61.5%	61.5%		38.5%	
Maximum Green (s)	33.8	33.8	33.9		19.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		41.1	41.1		13.9	
Actuated g/C Ratio		0.63	0.63		0.21	
v/c Ratio		0.25	0.29		0.76	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2020 Existing Noon Peak
 Timing Plan: Noon Peak

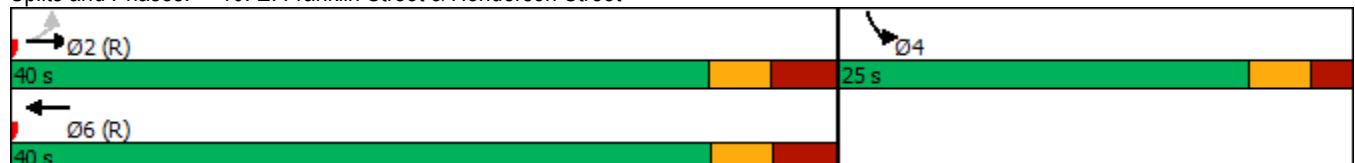


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		6.3	9.2		35.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		6.3	9.2		35.0	
LOS		A	A		C	
Approach Delay		6.3	9.2		35.0	
Approach LOS		A	A		C	
Queue Length 50th (ft)		20	100		46	
Queue Length 95th (ft)		119	157		71	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1737	1726		386	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.25	0.29		0.53	

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	32 (49%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	12.7
Intersection LOS:	B
Intersection Capacity Utilization	56.6%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 10: E. Franklin Street & Henderson Street



Lanes, Volumes, Timings

2020 Existing Noon Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	326	149	40	367	126	84	149	23	57	182	23
Future Volume (vph)	54	326	149	40	367	126	84	149	23	57	182	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.98		0.99	0.98			0.96		0.97	0.98	
Fr _t		0.953			0.962			0.988			0.983	
Fl _t Protected	0.950			0.950				0.984		0.950		
Satd. Flow (prot)	1539	2886	0	1593	3111	0	0	1791	0	1612	1635	0
Fl _t Permitted	0.433			0.443				0.605		0.479		
Satd. Flow (perm)	682	2886	0	732	3111	0	0	1068	0	787	1635	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	50		25	25		50	93		33	33		93
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.94	0.94	0.94	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	59	358	164	44	403	138	89	159	24	63	202	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	522	0	44	541	0	0	272	0	63	228	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	55.0	55.0		55.0	55.0		14.0	75.0		75.0	61.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%		10.8%	57.7%		57.7%	46.9%	
Maximum Green (s)	49.7	49.7		49.7	49.7		7.8	68.6		68.6	54.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	86.0	86.0		86.0	86.0			34.0		34.0	34.0	

Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2020 Existing Noon Peak
 Timing Plan: Noon Peak

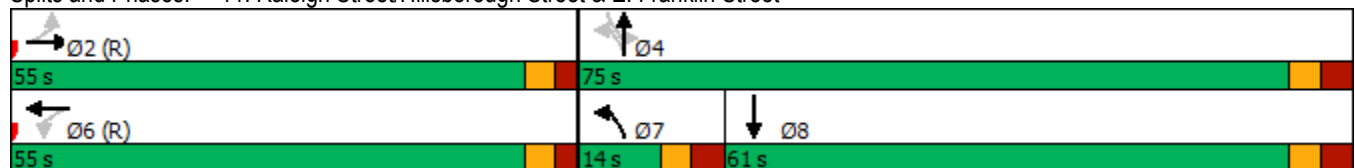


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.66	0.66		0.66	0.66			0.26		0.26	0.26	
v/c Ratio	0.13	0.27		0.09	0.26			0.98		0.31	0.53	
Control Delay	12.9	11.8		11.0	10.5			94.9		39.8	44.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.2	
Total Delay	12.9	11.8		11.0	10.5			94.9		39.8	45.0	
LOS	B	B		B	B			F		D	D	
Approach Delay		11.9			10.6			94.9			43.9	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	16	77		12	91			228		39	177	
Queue Length 95th (ft)	m58	184		36	156			311		64	173	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	451	1910		484	2059			575		423	704	
Starvation Cap Reductn	0	0		0	0			0		0	106	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.13	0.27		0.09	0.26			0.47		0.15	0.38	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 29.9
 Intersection LOS: C
 Intersection Capacity Utilization 75.7%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street



Lanes, Volumes, Timings

2020 Existing Noon Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	36	0	19	4	0	2	7	469	8	1	513	34
Future Volume (vph)	36	0	19	4	0	2	7	469	8	1	513	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		0.99			0.98		0.99	1.00		0.98	1.00	
Frt		0.953			0.955			0.997			0.991	
Flt Protected		0.968			0.968		0.950			0.950		
Satd. Flow (prot)	0	1717	0	0	1706	0	1670	3327	0	1753	3467	0
Flt Permitted		0.796			0.756		0.425			0.453		
Satd. Flow (perm)	0	1411	0	0	1317	0	742	3327	0	821	3467	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)	1		19	19		1	7		15	15		7
Peak Hour Factor	0.76	0.76	0.76	0.50	0.50	0.50	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	7%	7%	7%	5%	5%	5%
Adj. Flow (vph)	47	0	25	8	0	4	8	527	9	1	564	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	72	0	0	12	0	8	536	0	1	601	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		8.6			8.5		24.0	24.0		24.0	24.0	
Actuated g/C Ratio		0.25			0.24		0.69	0.69		0.69	0.69	

Lanes, Volumes, Timings

2020 Existing Noon Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.21			0.04		0.02	0.24		0.00	0.25	
Control Delay		12.3			10.3		5.6	5.0		5.0	5.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		12.3			10.3		5.6	5.0		5.0	5.1	
LOS		B			B		A	A		A	A	
Approach Delay		12.3			10.3			5.0			5.1	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		14			2		1	28		0	32	
Queue Length 95th (ft)		25			5		5	53		1	60	
Internal Link Dist (ft)		371			258			2028			704	
Turn Bay Length (ft)							225			250		
Base Capacity (vph)		609			564		742	3327		821	3467	
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		0.12			0.02		0.01	0.16		0.00	0.17	

Intersection Summary

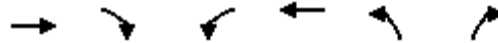
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	35
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.25
Intersection Signal Delay:	5.5
Intersection LOS:	A
Intersection Capacity Utilization:	36.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2020 Existing Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↔		↔↔	↔				
Traffic Volume (vph)	74	149	419	210	0	0		
Future Volume (vph)	74	149	419	210	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.77		0.64					
Frt	0.910							
Flt Protected			0.950					
Satd. Flow (prot)	1164	0	2837	1592	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1164	0	1824	1592	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		129	129					
Peak Hour Factor	0.71	0.71	0.93	0.93	0.90	0.90		
Heavy Vehicles (%)	2%	2%	9%	9%	2%	2%		
Adj. Flow (vph)	104	210	451	226	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	314	0	451	226	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		1 4	6			1	4
Permitted Phases								
Detector Phase	2		1 4	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	20.0			20.0			20.0	20.0
Total Split (s)	64.0			109.0			45.0	21.0
Total Split (%)	49.2%			83.8%			35%	16%
Maximum Green (s)	58.9			104.0			39.9	17.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	59.0		61.0	106.1				

Lanes, Volumes, Timings

2020 Existing Noon Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	50	0	0	88	36	166	348	26	42	0	374
Future Volume (vph)	17	50	0	0	88	36	166	348	26	42	0	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.77				0.91		0.60	0.93		0.59		0.43
Frt				0.961				0.990				0.850
Flt Protected	0.950						0.950	0.998		0.950		
Satd. Flow (prot)	1488	1620	0	0	1403	0	1259	2484	0	1439	0	2345
Flt Permitted	0.492						0.950	0.998		0.950		
Satd. Flow (perm)	595	1620	0	0	1403	0	757	2443	0	843	0	1014
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			989			826			981	
Travel Time (s)		10.7			57.6			22.5			26.8	
Confl. Peds. (#/hr)	207		358	358		207	244		349	349		244
Peak Hour Factor	0.93	0.93	0.93	0.84	0.84	0.84	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	9%	9%	9%	8%	8%	8%
Adj. Flow (vph)	18	54	0	0	105	43	193	405	30	49	0	435
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	18	54	0	0	148	0	174	454	0	49	0	435
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	31.0	31.0			31.0		41.0	41.0		30.0		30.0
Total Split (%)	23.8%	23.8%			23.8%		31.5%	31.5%		23.1%		23.1%
Maximum Green (s)	24.8	24.8			24.8		35.1	35.1		24.4		24.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	19.1	19.1			19.1		62.8	62.8		33.2		33.2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	22%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2020 Existing Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	30	63	32	21	84	162	32	71	27	228	105	43
Future Volume (vph)	30	63	32	21	84	162	32	71	27	228	105	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.91		0.89	0.87		0.66	0.95		0.87	0.84	
Frt		0.965			0.901			0.959			0.957	
Flt Protected		0.988		0.950			0.950			0.950		
Satd. Flow (prot)	0	1513	0	1569	1293	0	1505	1446	0	1554	1323	0
Flt Permitted		0.849		0.541			0.658			0.453		
Satd. Flow (perm)	0	1262	0	799	1293	0	688	1446	0	643	1323	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	38		43	43		38	103		33	33		103
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.93	0.93	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	4%	4%	4%
Adj. Flow (vph)	34	72	37	23	92	178	34	76	29	240	111	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	143	0	23	270	0	34	105	0	240	156	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		15.7		19.4	19.4		15.7	10.2		24.3	20.5	
Actuated g/C Ratio		0.29		0.35	0.35		0.29	0.19		0.44	0.37	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2020 Existing Noon Peak
 Timing Plan: Noon Peak

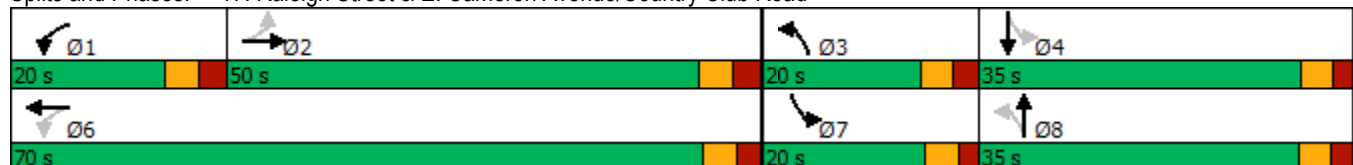


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.40		0.06	0.59		0.11	0.39		0.48	0.32	
Control Delay		25.1		13.5	22.1		12.3	29.4		14.5	18.8	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		25.1		13.5	22.1		12.3	29.4		14.5	18.8	
LOS		C		B	C		B	C		B	B	
Approach Delay		25.1			21.4			25.2			16.2	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		37		5	78		5	32		40	25	
Queue Length 95th (ft)		106		19	160		24	89		122	112	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		1021		551	1242		556	876		596	801	
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		0.14		0.04	0.22		0.06	0.12		0.40	0.19	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 54.9
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 20.4
 Intersection LOS: C
 Intersection Capacity Utilization 67.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road



Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2020 Existing PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	24	398	64	54	416	36	46	77	62	24	74	25
Future Volume (vph)	24	398	64	54	416	36	46	77	62	24	74	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.98			0.93			0.95	
Frt		0.982			0.990			0.955			0.973	
Flt Protected		0.998			0.995			0.988			0.990	
Satd. Flow (prot)	0	1707	0	0	1751	0	0	1516	0	0	1559	0
Flt Permitted		0.967			0.912			0.904			0.924	
Satd. Flow (perm)	0	1650	0	0	1597	0	0	1346	0	0	1436	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	40		37	37		40	62		43	43		62
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	25	419	67	56	429	37	51	85	68	26	80	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	511	0	0	522	0	0	204	0	0	133	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	25.0		25.0	25.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	40.5	40.5		40.4	40.4		20.1	20.1		20.1	20.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		44.7			44.7			15.3			15.3	
Actuated g/C Ratio		0.64			0.64			0.22			0.22	
v/c Ratio		0.48			0.51			0.70			0.42	
Control Delay		9.5			12.5			33.2			26.7	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2020 Existing PM Peak
 Timing Plan: PM Peak

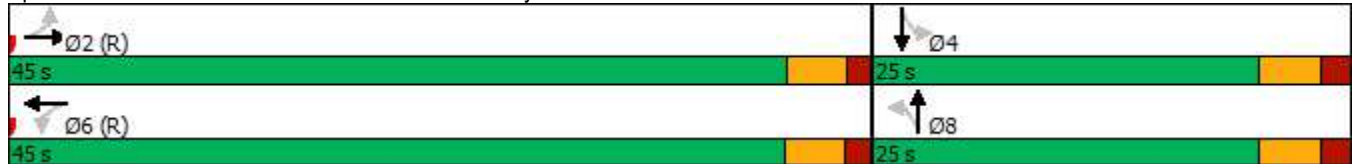


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		9.5			12.5			33.2			26.7	
LOS		A			B			C			C	
Approach Delay		9.5			12.5			33.2			26.7	
Approach LOS		A			B			C			C	
Queue Length 50th (ft)		102			192			86			49	
Queue Length 95th (ft)		203			m244			132			89	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1054			1020			384			410	
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		0.48			0.51			0.53			0.32	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 66 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 15.8
 Intersection LOS: B
 Intersection Capacity Utilization 75.2%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Church Street & W. Rosemary Street



Lanes, Volumes, Timings
 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

2020 Existing PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	257	48	51	209	43	50	565	74	71	492	264
Future Volume (vph)	217	257	48	51	209	43	50	565	74	71	492	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.97	0.99		0.96	0.98		0.93	0.96				0.73
Frt		0.976			0.974			0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1610	0	1585	1600	0	1420	2776	0	1514	2725	1310
Flt Permitted	0.201			0.553			0.370			0.268		
Satd. Flow (perm)	292	1610	0	888	1600	0	515	2776	0	427	2725	952
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			339			353			476	
Travel Time (s)		25.8			11.6			9.6			13.0	
Confl. Peds. (#/hr)	49		36	36		49	59		83	83		59
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.83	0.83	0.83	0.82	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	247	292	55	54	222	46	60	681	89	87	600	322
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	347	0	54	268	0	60	770	0	87	600	322
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	24.0	56.0		32.0	32.0		20.0	64.0		20.0	64.0	24.0
Total Split (%)	17.1%	40.0%		22.9%	22.9%		14.3%	45.7%		14.3%	45.7%	17.1%
Maximum Green (s)	18.2	50.0		26.0	26.0		14.2	58.2		14.9	58.2	18.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	49.5	49.5		25.5	25.5		76.0	67.4		76.5	69.9	88.9

Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2020 Existing PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	282	169	12	191	56	60	24	5	23	40	10
Future Volume (vph)	42	282	169	12	191	56	60	24	5	23	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.95			0.98			0.88			0.94	
Frt		0.944			0.971			0.993			0.981	
Flt Protected	0.950				0.998			0.967			0.985	
Satd. Flow (prot)	1593	1508	0	0	1602	0	0	1597	0	0	1548	0
Flt Permitted	0.627				0.977			0.794			0.893	
Satd. Flow (perm)	1026	1508	0	0	1566	0	0	1158	0	0	1355	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		156			1195			366			450	
Travel Time (s)		5.3			40.7			12.5			15.3	
Confl. Peds. (#/hr)	14		34	34		14	73		51	51		73
Peak Hour Factor	0.90	0.90	0.90	0.93	0.93	0.93	0.67	0.67	0.67	0.79	0.79	0.79
Adj. Flow (vph)	47	313	188	13	205	60	90	36	7	29	51	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	501	0	0	278	0	0	133	0	0	93	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.1	30.1		30.1	30.1		30.2	30.2		30.2	30.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.9	4.9			4.9			4.8			4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	50.6	50.6			50.6			13.2			13.2	
Actuated g/C Ratio	0.72	0.72			0.72			0.19			0.19	
v/c Ratio	0.06	0.46			0.25			0.61			0.36	

Lanes, Volumes, Timings
 6: Henderson Street & E. Rosemary Street

2020 Existing PM Peak
 Timing Plan: PM Peak

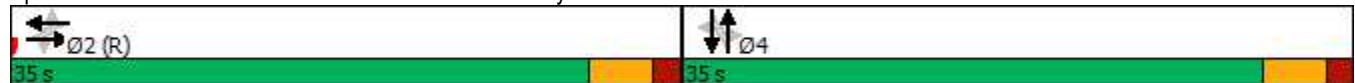


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	4.2	7.5			7.7			40.7			27.2	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	4.2	7.5			7.7			40.7			27.2	
LOS	A	A			A			D			C	
Approach Delay		7.2			7.7			40.7			27.2	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	5	109			85			79			36	
Queue Length 95th (ft)	m13	290			142			100			58	
Internal Link Dist (ft)		76			1115			286			370	
Turn Bay Length (ft)	85											
Base Capacity (vph)	742	1090			1132			499			584	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.06	0.46			0.25			0.27			0.16	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 49 (70%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 13.4
 Intersection LOS: B
 Intersection Capacity Utilization 48.1%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2020 Existing PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	33	132	83	10	97	55	163	251	23	36	178	24
Future Volume (vph)	33	132	83	10	97	55	163	251	23	36	178	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.97		0.91	1.00		0.98	0.98	
Frt		0.955			0.954			0.987			0.982	
Flt Protected		0.993			0.997		0.950			0.950		
Satd. Flow (prot)	0	1736	0	0	1713	0	1770	1831	0	1770	1786	0
Flt Permitted		0.941			0.975		0.532			0.578		
Satd. Flow (perm)	0	1633	0	0	1674	0	905	1831	0	1054	1786	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	27		14	14		27	52		9	9		52
Peak Hour Factor	0.86	0.86	0.86	0.79	0.79	0.79	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	38	153	97	13	123	70	177	273	25	38	185	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	288	0	0	206	0	177	298	0	38	210	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	19.9	19.9		17.0	17.0		11.8	14.8		14.8	14.8	
Total Split (s)	35.0	35.0		35.0	35.0		15.0	35.0		20.0	20.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		21.4%	50.0%		28.6%	28.6%	
Maximum Green (s)	30.1	30.1		30.0	30.0		10.2	30.2		15.2	15.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.9			5.0		4.8	4.8		4.8	4.8	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		17.0			16.9		43.3	43.3		30.2	30.2	
Actuated g/C Ratio		0.24			0.24		0.62	0.62		0.43	0.43	
v/c Ratio		0.73			0.51		0.27	0.26		0.08	0.27	
Control Delay		26.9			26.3		8.3	8.7		16.0	16.4	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2020 Existing PM Peak
Timing Plan: PM Peak

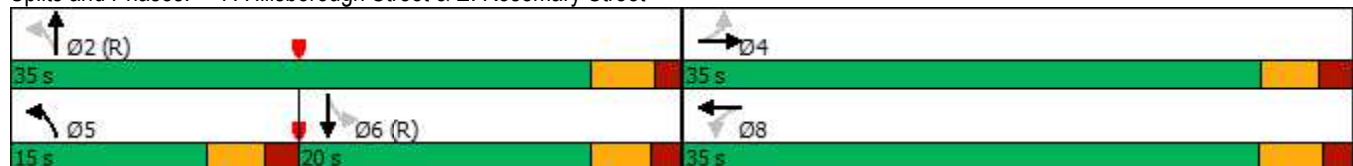


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		26.9			26.3		8.3	8.7		16.0	16.4	
LOS		C			C		A	A		B	B	
Approach Delay		26.9			26.3			8.5			16.4	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		140			77		44	92		9	54	
Queue Length 95th (ft)		128			100		74	124		34	129	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		702			717		688	1132		454	769	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	15	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.41			0.29		0.26	0.26		0.08	0.28	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	66 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	17.5
Intersection LOS:	B
Intersection Capacity Utilization:	58.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2020 Existing PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	447	18	40	549	71	24	47	39	72	58	70
Future Volume (vph)	64	447	18	40	549	71	24	47	39	72	58	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%			-3%	
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88	0.99		0.83	0.96			0.96	0.93		0.92	
Fr _t		0.994			0.983				0.850		0.953	
Fl _t Protected	0.950			0.950				0.983			0.982	
Satd. Flow (prot)	1457	2855	0	1501	2835	0	0	1681	1454	0	1490	0
Fl _t Permitted	0.384			0.464				0.862			0.847	
Satd. Flow (perm)	521	2855	0	608	2835	0	0	1416	1350	0	1261	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			755			285			379	
Travel Time (s)		33.9			25.7			9.7			10.3	
Confl. Peds. (#/hr)	124		164	164		124	175		63	63		175
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.81	0.81	0.81	0.91	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	70	491	20	43	590	76	30	58	48	79	64	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	511	0	43	666	0	0	88	48	0	220	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%	41.4%	41.4%	41.4%	
Maximum Green (s)	35.4	35.4		35.4	35.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6		-1.3	-1.3	-1.3	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	42.8	42.8		42.8	42.8		17.2	17.2	17.2	17.2	17.2	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2020 Existing PM Peak
 Timing Plan: PM Peak

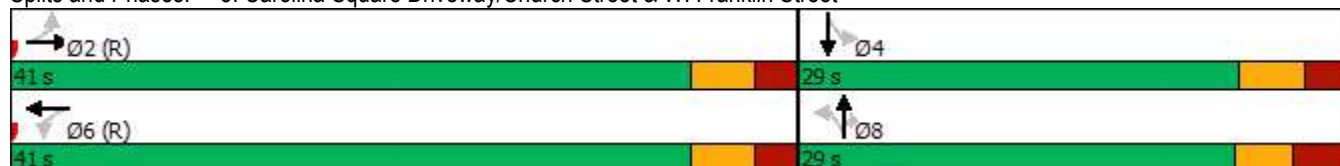


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.61	0.61		0.61	0.61			0.25	0.25		0.25	
v/c Ratio	0.22	0.29		0.12	0.38			0.25	0.14		0.71	
Control Delay	10.4	8.0		13.5	13.9			21.0	19.3		33.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	10.4	8.0		13.5	13.9			21.0	19.3		33.0	
LOS	B	A		B	B			C	B		C	
Approach Delay		8.3			13.9			20.4			33.0	
Approach LOS		A			B			C			C	
Queue Length 50th (ft)	12	48		20	184			30	16		74	
Queue Length 95th (ft)	42	95		m34	263			51	32		102	
Internal Link Dist (ft)		913			675			205			299	
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	318	1744		371	1731			485	462		432	
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	0.29		0.12	0.38			0.18	0.10		0.51	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 15.0
 Intersection LOS: B
 Intersection Capacity Utilization 62.8%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2020 Existing PM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	422	74	99	504	65	63	528	110	72	370	112
Future Volume (vph)	168	422	74	99	504	65	63	528	110	72	370	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%				3%
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.88	0.96		0.87	0.96		0.94	0.96		0.92	0.97	
Frt		0.978			0.983			0.974			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1412	2933	0	1479	2802	0	1380	2685	0	1385	2587	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1239	2933	0	1285	2802	0	1293	2685	0	1278	2587	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		755			941			981			353	
Travel Time (s)		25.7			32.1			26.8			9.6	
Confl. Peds. (#/hr)	193		152	152		193	67		108	108		67
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	7%	7%	7%	4%	4%	4%
Adj. Flow (vph)	193	485	85	118	600	77	70	587	122	77	394	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	570	0	118	677	0	70	709	0	77	513	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2		15.0	28.0		15.0	28.1	
Total Split (s)	31.0	47.0		28.0	44.0		27.0	36.0		29.0	38.0	
Total Split (%)	22.1%	33.6%		20.0%	31.4%		19.3%	25.7%		20.7%	27.1%	
Maximum Green (s)	25.6	40.8		22.1	37.8		21.1	30.1		23.1	32.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2		2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2		-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	3.0		1.0	3.0		1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	22.0	49.5		15.5	43.0		11.8	42.6		12.4	45.8	

Lanes, Volumes, Timings

2020 Existing PM Peak

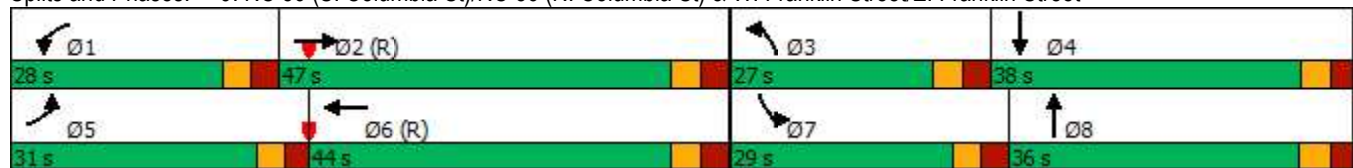
9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.16	0.35		0.11	0.31		0.08	0.30		0.09	0.33	
v/c Ratio	0.87	0.55		0.72	0.79		0.60	0.87		0.63	0.61	
Control Delay	91.9	35.8		79.4	57.2		46.9	48.3		104.0	26.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.4	
Total Delay	91.9	35.8		79.4	57.2		46.9	48.3		104.0	26.9	
LOS	F	D		E	E		D	D		F	C	
Approach Delay		50.0			60.5			48.2			37.0	
Approach LOS		D			E			D			D	
Queue Length 50th (ft)	176	203		111	301		55	359		74	95	
Queue Length 95th (ft)	#267	252		166	381		m62	m#493		m130	117	
Internal Link Dist (ft)		675			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	262	1037		242	861		216	816		237	845	
Starvation Cap Reductn	0	0		0	0		0	0		0	72	
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	0.74	0.55		0.49	0.79		0.32	0.87		0.32	0.66	

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 49.8 Intersection LOS: D
 Intersection Capacity Utilization 72.7% 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: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2020 Existing PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	33	589	635	64	166	56
Future Volume (vph)	33	589	635	64	166	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.97		0.87	
Frt			0.986		0.966	
Flt Protected		0.997			0.964	
Satd. Flow (prot)	0	3282	2827	0	1402	0
Flt Permitted		0.887			0.964	
Satd. Flow (perm)	0	2907	2827	0	1300	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	114			114	88	198
Peak Hour Factor	0.90	0.90	0.93	0.93	0.83	0.83
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Parking (#/hr)						0
Adj. Flow (vph)	37	654	683	69	200	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	691	752	0	267	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	16.2	16.2	21.1		24.1	
Total Split (s)	43.0	43.0	43.0		27.0	
Total Split (%)	61.4%	61.4%	61.4%		38.6%	
Maximum Green (s)	36.8	36.8	36.9		21.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		43.5	43.5		16.5	
Actuated g/C Ratio		0.62	0.62		0.24	
v/c Ratio		0.38	0.43		0.81	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2020 Existing PM Peak
 Timing Plan: PM Peak

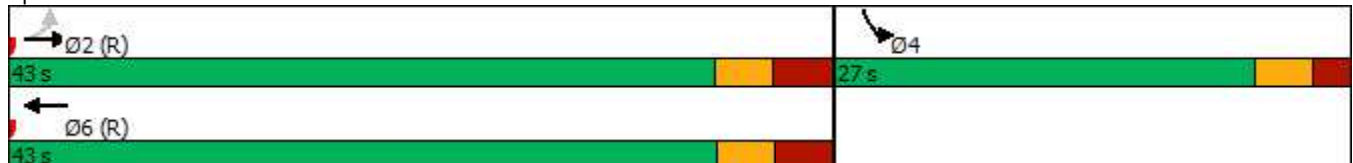


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		6.7	13.3		46.6	
Queue Delay		0.0	0.0		0.0	
Total Delay		6.7	13.3		46.6	
LOS		A	B		D	
Approach Delay		6.7	13.3		46.6	
Approach LOS		A	B		D	
Queue Length 50th (ft)		162	155		149	
Queue Length 95th (ft)		m58	300		171	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1808	1758		440	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.38	0.43		0.61	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 35 (50%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 15.8
 Intersection LOS: B
 Intersection Capacity Utilization 69.7%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: E. Franklin Street & Henderson Street

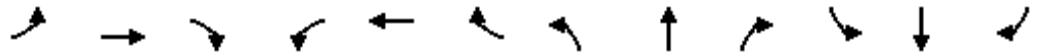


Lanes, Volumes, Timings

2020 Existing PM Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	541	234	61	645	214	51	180	23	56	196	13
Future Volume (vph)	50	541	234	61	645	214	51	180	23	56	196	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99			0.99		0.99	0.99	
Fr _t		0.955			0.963			0.988			0.991	
Fl _t Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1585	2990	0	1609	3181	0	0	1809	0	1643	1701	0
Fl _t Permitted	0.274			0.303				0.621		0.383		
Satd. Flow (perm)	455	2990	0	511	3181	0	0	1122	0	658	1701	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	16		16	16		16	58		7	7		58
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88
Adj. Flow (vph)	55	595	257	66	701	233	55	194	25	64	223	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	852	0	66	934	0	0	274	0	64	238	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	60.0	60.0		60.0	60.0		20.0	80.0		80.0	60.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		14.3%	57.1%		57.1%	42.9%	
Maximum Green (s)	54.7	54.7		54.7	54.7		13.8	73.6		73.6	53.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	98.9	98.9		98.9	98.9			31.1		31.1	31.1	
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.22		0.22	0.22	

Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2020 Existing PM Peak
 Timing Plan: PM Peak



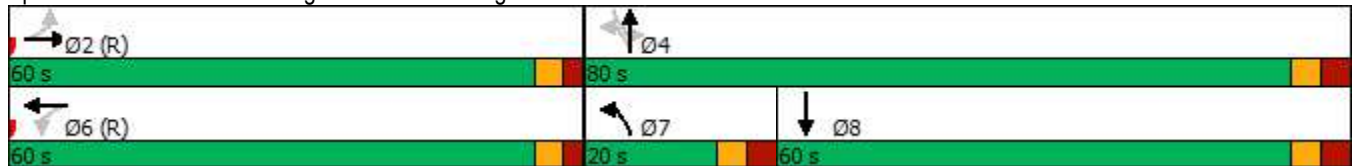
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.40		0.18	0.42			1.10		0.44	0.63	
Control Delay	14.6	16.0		10.2	10.1			136.6		55.6	57.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.2	
Total Delay	14.6	16.0		10.2	10.1			136.6		55.6	57.9	
LOS	B	B		B	B			F		E	E	
Approach Delay		15.9			10.1			136.6			57.4	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	28	251		18	169			~283		55	212	
Queue Length 95th (ft)	m61	346		50	268			#386		71	198	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	321	2112		360	2247			601		352	668	
Starvation Cap Reductn	0	0		0	0			0		0	86	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.17	0.40		0.18	0.42			0.46		0.18	0.41	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 31.9
 Intersection Capacity Utilization 82.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street



Lanes, Volumes, Timings

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

2020 Existing PM Peak

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	94	2	18	33	1	8	14	832	13	11	624	75
Future Volume (vph)	94	2	18	33	1	8	14	832	13	11	624	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		0.99			0.98		0.99	1.00		0.98	1.00	
Frt		0.979			0.973			0.998			0.984	
Flt Protected		0.960			0.962		0.950			0.950		
Satd. Flow (prot)	0	1794	0	0	1730	0	1735	3458	0	1787	3504	0
Flt Permitted		0.724			0.751		0.362			0.262		
Satd. Flow (perm)	0	1351	0	0	1334	0	657	3458	0	486	3504	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)	2		20	20		2	7		28	28		7
Peak Hour Factor	0.89	0.89	0.89	0.75	0.75	0.75	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	106	2	20	44	1	11	16	967	15	12	671	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	56	0	16	982	0	12	752	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		10.6			10.6		26.1	26.1		26.1	26.1	
Actuated g/C Ratio		0.25			0.25		0.62	0.62		0.62	0.62	

Lanes, Volumes, Timings
 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

2020 Existing PM Peak
 Timing Plan: PM Peak

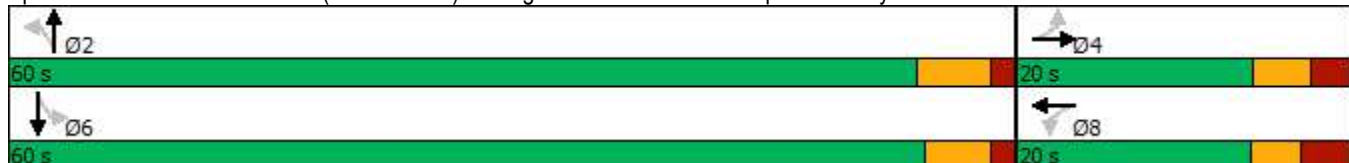


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.38			0.17		0.04	0.46		0.04	0.35	
Control Delay		18.3			15.5		6.0	7.4		6.1	6.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		18.3			15.5		6.0	7.4		6.1	6.6	
LOS		B			B		A	A		A	A	
Approach Delay		18.3			15.5			7.4			6.6	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		25			10		2	71		1	49	
Queue Length 95th (ft)		71			30		9	128		8	97	
Internal Link Dist (ft)		371			258			2028			704	
Turn Bay Length (ft)							225			250		
Base Capacity (vph)		493			483		657	3458		486	3504	
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		0.26			0.12		0.02	0.28		0.02	0.21	

Intersection Summary

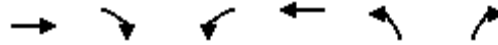
Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 42.4
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 8.0
 Intersection Capacity Utilization 45.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2020 Existing PM Peak
 Timing Plan: PM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↗		↖↖	↖				
Traffic Volume (vph)	144	216	496	349	0	0		
Future Volume (vph)	144	216	496	349	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.84		0.74					
Frt	0.919							
Flt Protected			0.950					
Satd. Flow (prot)	1268	0	2890	1622	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1268	0	2138	1622	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		70	70					
Peak Hour Factor	0.93	0.93	0.96	0.96	0.90	0.90		
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%		
Adj. Flow (vph)	155	232	517	364	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	387	0	517	364	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	20.1			20.0			20.0	21.0
Total Split (s)	52.0			119.0			67.0	21.0
Total Split (%)	37.1%			85.0%			48%	15%
Maximum Green (s)	46.9			114.0			61.9	17.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lead						Lag	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	48.0		82.0	124.0				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2020 Existing PM Peak
 Timing Plan: PM Peak

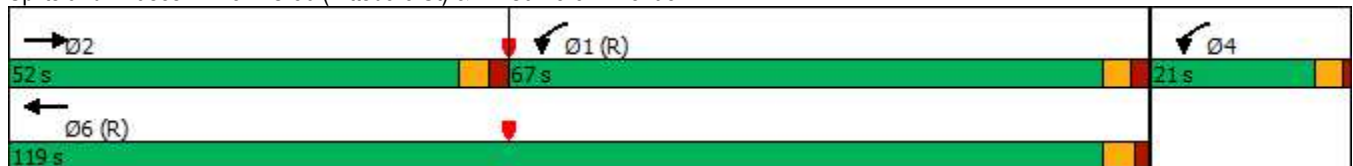


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.34		0.59	0.89				
v/c Ratio	0.89		0.31	0.25				
Control Delay	66.0		24.1	1.7				
Queue Delay	0.0		0.3	0.8				
Total Delay	66.0		24.4	2.5				
LOS	E		C	A				
Approach Delay	66.0			15.4				
Approach LOS	E			B				
Queue Length 50th (ft)	328		175	41				
Queue Length 95th (ft)	436		m238	m46				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	458		1899	1436				
Starvation Cap Reductn	0		803	753				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.84		0.47	0.53				

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 6 (4%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 30.8
 Intersection LOS: C
 Intersection Capacity Utilization 50.1%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2020 Existing PM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	120	0	0	163	50	216	630	58	117	0	455
Future Volume (vph)	19	120	0	0	163	50	216	630	58	117	0	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.85				0.93		0.68	0.93		0.78		0.60
Fr _t					0.968			0.988				0.850
Fl _t Protected	0.950						0.950	0.998		0.950		
Satd. Flow (prot)	1532	1668	0	0	1493	0	1295	2535	0	1453	0	2367
Fl _t Permitted	0.304						0.950	0.998		0.950		
Satd. Flow (perm)	418	1668	0	0	1493	0	884	2510	0	1130	0	1418
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	157		172	172		157	111		248	248		111
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.87	0.87	0.87	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	6%	6%	6%	7%	7%	7%
Adj. Flow (vph)	21	132	0	0	181	56	248	724	67	138	0	535
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	21	132	0	0	237	0	223	816	0	138	0	535
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	31.0	31.0			31.0		46.0	46.0		35.0		35.0
Total Split (%)	22.1%	22.1%			22.1%		32.9%	32.9%		25.0%		25.0%
Maximum Green (s)	24.8	24.8			24.8		40.1	40.1		29.4		29.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	24.8	24.8			24.8		56.0	56.0		44.2		44.2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	20%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings
 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

2020 Existing PM Peak
 Timing Plan: PM Peak

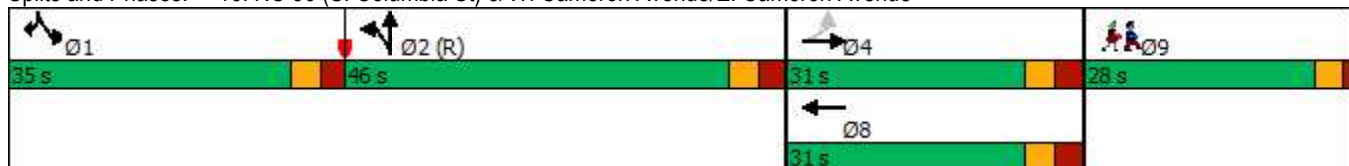


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.18	0.18			0.18		0.40	0.40		0.32		0.32
v/c Ratio	0.29	0.45			0.90		0.43	0.80		0.30		0.72
Control Delay	74.7	73.7			90.3		34.4	45.0		30.4		36.3
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	74.7	73.7			90.3		34.4	45.0		30.4		36.3
LOS	E	E			F		C	D		C		D
Approach Delay		73.9			90.3			42.7				35.1
Approach LOS		E			F			D				D
Queue Length 50th (ft)	20	129			211		161	359		56		125
Queue Length 95th (ft)	m24	m152			#360		245	444		92		163
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	77	309			277		518	1014		458		746
Starvation Cap Reductn	0	0			0		0	0		0		0
Spillback Cap Reductn	0	0			0		0	0		0		0
Storage Cap Reductn	0	0			0		0	0		0		0
Reduced v/c Ratio	0.27	0.43			0.86		0.43	0.80		0.30		0.72

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 47.9 Intersection LOS: D
 Intersection Capacity Utilization 76.6% ICU Level of Service D
 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: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2020 Existing PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	26	159	46	34	126	168	54	86	60	266	180	52
Future Volume (vph)	26	159	46	34	126	168	54	86	60	266	180	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94			0.88			0.88		0.81	0.88	
Frt		0.973			0.914			0.939			0.966	
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1572	0	1569	1334	0	1563	1354	0	1585	1415	0
Flt Permitted		0.927		0.374			0.590			0.460		
Satd. Flow (perm)	0	1446	0	618	1334	0	970	1354	0	622	1415	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	39		37	37		39	107		60	60		107
Peak Hour Factor	0.75	0.75	0.75	0.89	0.89	0.89	0.89	0.89	0.89	0.84	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Adj. Flow (vph)	35	212	61	38	142	189	61	97	67	317	214	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	308	0	38	331	0	61	164	0	317	276	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		23.4		29.8	29.8		23.2	14.9		35.8	26.1	
Actuated g/C Ratio		0.31		0.39	0.39		0.30	0.19		0.47	0.34	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2020 Existing PM Peak
 Timing Plan: PM Peak

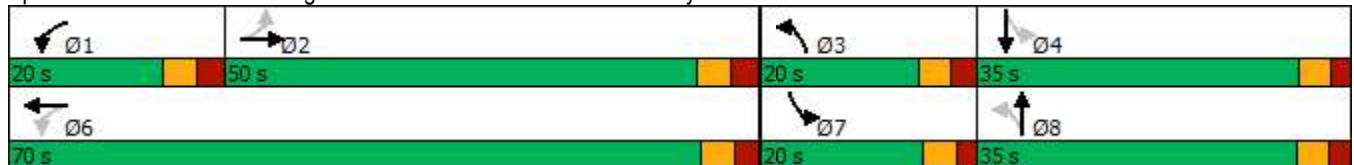


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.70		0.11	0.64		0.17	0.62		0.65	0.57	
Control Delay		34.7		14.9	24.6		17.3	42.7		25.1	32.1	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		34.7		14.9	24.6		17.3	42.7		25.1	32.1	
LOS		C		B	C		B	D		C	C	
Approach Delay		34.7			23.6			35.8			28.4	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)		140		11	119		18	78		112	126	
Queue Length 95th (ft)		205		31	230		49	162		#214	234	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		924		450	1104		521	577		496	603	
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		0.33		0.08	0.30		0.12	0.28		0.64	0.46	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 76.5
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 29.6
 Intersection LOS: C
 Intersection Capacity Utilization 77.8%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road





2022 Without Site

Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 No-Build AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	288	21	32	300	15	33	24	36	27	39	11
Future Volume (vph)	14	288	21	32	300	15	33	24	36	27	39	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.95			0.97	
Frt		0.991			0.994			0.948			0.981	
Flt Protected		0.998			0.995			0.983			0.983	
Satd. Flow (prot)	0	1734	0	0	1737	0	0	1511	0	0	1602	0
Flt Permitted		0.982			0.950			0.880			0.877	
Satd. Flow (perm)	0	1704	0	0	1655	0	0	1334	0	0	1401	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	20		17	17		20	21		31	31		21
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.84	0.84	0.84	0.72	0.72	0.72
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	16	335	24	36	337	17	39	29	43	38	54	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	0	390	0	0	111	0	0	107	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	38.0	38.0		38.0	38.0		22.0	22.0		22.0	22.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	33.5	33.5		33.4	33.4		17.1	17.1		17.1	17.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		43.0			43.0			10.4			10.4	
Actuated g/C Ratio		0.72			0.72			0.17			0.17	
v/c Ratio		0.31			0.33			0.48			0.44	
Control Delay		5.7			3.3			24.6			27.1	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 No-Build AM Peak
 Timing Plan: AM Peak

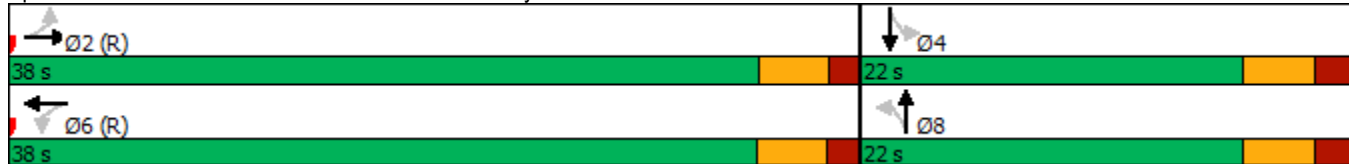


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.7			3.3			24.6			27.1	
LOS		A			A			C			C	
Approach Delay		5.7			3.3			24.6			27.1	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		48			18			37			35	
Queue Length 95th (ft)		102			48			53			54	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1220			1185			377			396	
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		0.31			0.33			0.29			0.27	

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	7 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.48
Intersection Signal Delay:	9.2
Intersection LOS:	A
Intersection Capacity Utilization	51.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: Church Street & W. Rosemary Street



Lanes, Volumes, Timings

2022 No-Build AM Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	205	21	13	165	32	22	309	34	77	559	176
Future Volume (vph)	150	205	21	13	165	32	22	309	34	77	559	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.99	1.00		0.98	1.00		0.98	0.99		0.94		0.91
Fr _t		0.986			0.975			0.985				0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1640	0	1585	1619	0	1355	2730	0	1485	2673	1285
Fl _t Permitted	0.286			0.597			0.364			0.473		
Satd. Flow (perm)	425	1640	0	980	1619	0	510	2730	0	694	2673	1169
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			339			353			476	
Travel Time (s)		25.8			11.6			9.6			13.0	
Confl. Peds. (#/hr)	12		16	16		12	19		34	34		19
Peak Hour Factor	0.86	0.86	0.86	0.90	0.90	0.90	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	5%	5%	5%
Adj. Flow (vph)	174	238	24	14	183	36	24	343	38	88	635	200
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	262	0	14	219	0	24	381	0	88	635	200
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	23.0	57.0		34.0	34.0		13.0	50.0		13.0	50.0	23.0
Total Split (%)	19.2%	47.5%		28.3%	28.3%		10.8%	41.7%		10.8%	41.7%	19.2%
Maximum Green (s)	17.2	51.0		28.0	28.0		7.2	44.2		7.9	44.2	17.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	41.6	41.6		20.7	20.7		63.9	55.7		65.5	60.7	76.6

Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 No-Build AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	138	62	8	279	16	53	6	8	9	16	5
Future Volume (vph)	5	138	62	8	279	16	53	6	8	9	16	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99			1.00			0.95			0.97	
Frt		0.953			0.993			0.984			0.979	
Flt Protected	0.950				0.999			0.962			0.985	
Satd. Flow (prot)	1593	1580	0	0	1660	0	0	1558	0	0	1559	0
Flt Permitted	0.562				0.993			0.741			0.882	
Satd. Flow (perm)	937	1580	0	0	1650	0	0	1155	0	0	1377	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		156			1195			366			450	
Travel Time (s)		5.3			40.7			12.5			15.3	
Confl. Peds. (#/hr)	4		6	6		4	22		23	23		22
Peak Hour Factor	0.89	0.89	0.89	0.75	0.75	0.75	0.87	0.87	0.87	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	6	155	70	11	372	21	61	7	9	13	24	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	225	0	0	404	0	0	77	0	0	44	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.1	35.1		35.1	35.1		15.2	15.2		15.2	15.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.1			0.1			0.2			0.2	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	44.4	44.4			44.4			9.1			9.1	
Actuated g/C Ratio	0.74	0.74			0.74			0.15			0.15	

Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 No-Build AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.01	0.19			0.33			0.44				0.21
Control Delay	5.8	5.5			5.1			27.1				24.0
Queue Delay	0.0	0.0			0.0			0.0				0.0
Total Delay	5.8	5.5			5.1			27.1				24.0
LOS	A	A			A			C				C
Approach Delay		5.5			5.1			27.1				24.0
Approach LOS		A			A			C				C
Queue Length 50th (ft)	1	44			72			38				15
Queue Length 95th (ft)	m5	95			84			70				27
Internal Link Dist (ft)		76			1115			286				370
Turn Bay Length (ft)	85											
Base Capacity (vph)	693	1169			1221			288				344
Starvation Cap Reductn	0	0			0			0				0
Spillback Cap Reductn	0	0			0			0				0
Storage Cap Reductn	0	0			0			0				0
Reduced v/c Ratio	0.01	0.19			0.33			0.27				0.13

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 38 (63%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.44
 Intersection Signal Delay: 8.6
 Intersection Capacity Utilization 43.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 No-Build AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	6	57	68	0	110	12	176	142	6	21	356	32
Future Volume (vph)	6	57	68	0	110	12	176	142	6	21	356	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00		1.00	1.00	
Frt		0.930			0.987			0.994			0.987	
Flt Protected		0.998					0.950			0.950		
Satd. Flow (prot)	0	1706	0	0	1832	0	1752	1832	0	1752	1812	0
Flt Permitted		0.979					0.364			0.656		
Satd. Flow (perm)	0	1672	0	0	1832	0	671	1832	0	1204	1812	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	6		3	3		6	13		2	2		13
Peak Hour Factor	0.82	0.82	0.82	0.71	0.71	0.71	0.93	0.93	0.93	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	7	70	83	0	155	17	189	153	6	23	396	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	0	0	172	0	189	159	0	23	432	0
Turn Type	Perm	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	20.0	20.0		20.0	20.0		12.0	40.0		28.0	28.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		20.0%	66.7%		46.7%	46.7%	
Maximum Green (s)	15.1	15.1		15.0	15.0		7.2	35.2		23.2	23.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		10.2			10.2		42.2	43.2		30.0	30.0	
Actuated g/C Ratio		0.17			0.17		0.70	0.72		0.50	0.50	
v/c Ratio		0.56			0.55		0.32	0.12		0.04	0.48	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 No-Build AM Peak
Timing Plan: AM Peak

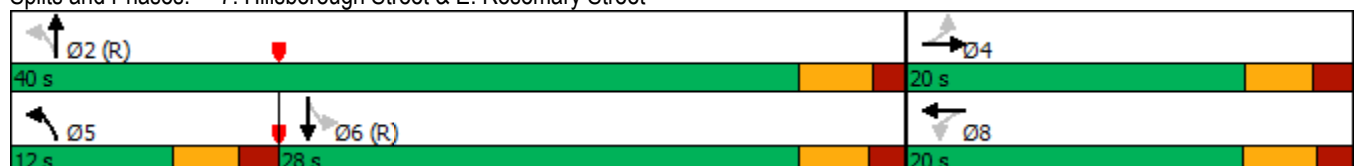


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		28.5			29.0		3.4	2.3		11.0	14.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		28.5			29.0		3.4	2.3		11.0	14.3	
LOS		C			C		A	A		B	B	
Approach Delay		28.5			29.0			2.9				14.1
Approach LOS		C			C			A				B
Queue Length 50th (ft)		68			58		10	8		4	102	
Queue Length 95th (ft)		94			77		24	21		17	207	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		418			458		603	1318		600	904	
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		0.38			0.38		0.31	0.12		0.04	0.48	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	14 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	15.0
Intersection LOS:	B
Intersection Capacity Utilization	55.6%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 No-Build AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	327	23	10	247	43	2	5	10	20	20	49
Future Volume (vph)	45	327	23	10	247	43	2	5	10	20	20	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.95	0.98			0.98	0.94		0.94	
Frt		0.990			0.978				0.850		0.926	
Flt Protected	0.950			0.950				0.985			0.989	
Satd. Flow (prot)	1430	1478	0	1431	1450	0	0	1621	1399	0	1431	0
Flt Permitted	0.551			0.510				0.884			0.918	
Satd. Flow (perm)	789	1478	0	730	1450	0	0	1423	1316	0	1317	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			298			285			379	
Travel Time (s)		33.9			10.2			9.7			10.3	
Confl. Peds. (#/hr)	39		57	57		39	57		29	29		57
Peak Hour Factor	0.84	0.84	0.84	0.83	0.83	0.83	0.53	0.53	0.53	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	54	389	27	12	298	52	4	9	19	22	22	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	416	0	12	350	0	0	13	19	0	97	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%	48.3%	48.3%	48.3%	
Maximum Green (s)	25.4	25.4		25.4	25.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	43.3	43.3		43.3	43.3			10.3	10.3		10.3	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 No-Build AM Peak
 Timing Plan: AM Peak

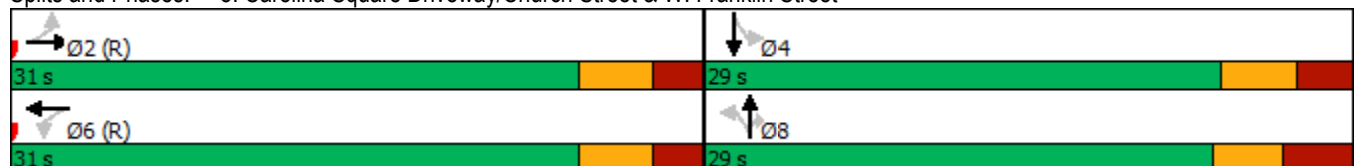


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.17	0.17			0.17
v/c Ratio	0.09	0.39		0.02	0.33			0.05	0.08			0.43
Control Delay	5.0	6.4		2.4	4.3			19.7	20.2			24.6
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	5.0	6.4		2.4	4.3			19.7	20.2			24.6
LOS	A	A		A	A			B	C			C
Approach Delay		6.2			4.2			20.0				24.6
Approach LOS		A			A			C				C
Queue Length 50th (ft)	6	55		3	80			4	6			36
Queue Length 95th (ft)	18	115		m1	45			9	12			56
Internal Link Dist (ft)		913			218			205				299
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	569	1067		527	1046			569	526			526
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	0.09	0.39		0.02	0.33			0.02	0.04			0.18

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 42 (70%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 7.8
 Intersection LOS: A
 Intersection Capacity Utilization 63.1%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
























Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2022 No-Build AM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	283	29	65	275	46	30	280	87	36	458	78
Future Volume (vph)	61	283	29	65	275	46	30	280	87	36	458	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.87	0.99		0.95		0.79	0.97	0.96		0.91	0.99	
Frt		0.986				0.850		0.964			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1372	2980	0	1410	1484	1397	1342	2576	0	1346	2595	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1191	2980	0	1344	1484	1100	1298	2576	0	1221	2595	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		457			941			981			353	
Travel Time (s)		15.6			32.1			26.8			9.6	
Confl. Peds. (#/hr)	125		49	49		125	29		98	98		29
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	76	354	36	75	316	53	32	301	94	42	539	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	390	0	75	316	53	32	395	0	42	631	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	22.0	38.0		22.0	38.0	22.0	22.0	38.0		22.0	38.0	
Total Split (%)	18.3%	31.7%		18.3%	31.7%	18.3%	18.3%	31.7%		18.3%	31.7%	
Maximum Green (s)	16.6	31.8		16.1	31.8	16.1	16.1	32.1		16.1	32.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	10.9	53.0		11.2	53.1	64.5	8.6	31.8		9.2	35.0	

Lanes, Volumes, Timings

2022 No-Build AM Peak

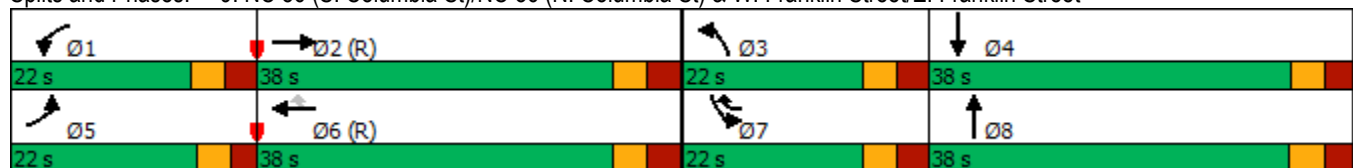
9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.09	0.44		0.09	0.44	0.54	0.07	0.26		0.08	0.29	
v/c Ratio	0.61	0.30		0.57	0.48	0.09	0.33	0.58		0.41	0.84	
Control Delay	75.6	23.7		79.7	21.0	8.5	79.8	20.5		92.4	29.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.1	
Total Delay	75.6	23.7		79.7	21.0	8.5	79.8	20.5		92.4	29.7	
LOS	E	C		E	C	A	E	C		F	C	
Approach Delay		32.2			29.4			24.9			33.6	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	60	95		61	93	11	16	143		30	244	
Queue Length 95th (ft)	102	140		109	154	19	m47	144		70	76	
Internal Link Dist (ft)		377			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	194	1316		199	657	707	190	750		190	780	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	6	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.39	0.30		0.38	0.48	0.07	0.17	0.53		0.22	0.82	

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 30.5 Intersection LOS: C
 Intersection Capacity Utilization 65.0% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2022 No-Build AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	15	366	384	58	65	17
Future Volume (vph)	15	366	384	58	65	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.95	
Frt			0.980		0.971	
Flt Protected		0.998			0.962	
Satd. Flow (prot)	0	3223	2776	0	1434	0
Flt Permitted		0.934			0.962	
Satd. Flow (perm)	0	3013	2776	0	1387	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	26			26	44	87
Peak Hour Factor	0.91	0.91	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	5%	5%	5%	5%	4%	4%
Parking (#/hr)						0
Adj. Flow (vph)	16	402	427	64	82	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	418	491	0	104	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	17.0	17.0	22.0		25.0	
Total Split (s)	32.0	32.0	32.0		28.0	
Total Split (%)	53.3%	53.3%	53.3%		46.7%	
Maximum Green (s)	25.8	25.8	25.9		22.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		44.6	44.6		8.8	
Actuated g/C Ratio		0.74	0.74		0.15	
v/c Ratio		0.19	0.24		0.50	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2022 No-Build AM Peak
 Timing Plan: AM Peak

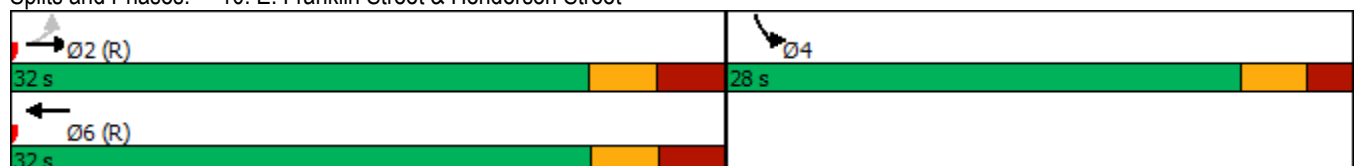


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		6.8	4.5		28.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		6.8	4.5		28.0	
LOS		A	A		C	
Approach Delay		6.8	4.5		28.0	
Approach LOS		A	A		C	
Queue Length 50th (ft)		95	114		35	
Queue Length 95th (ft)		152	17		57	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		2239	2063		549	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.19	0.24		0.19	

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	53 (88%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	7.8
Intersection LOS:	A
Intersection Capacity Utilization:	47.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: E. Franklin Street & Henderson Street

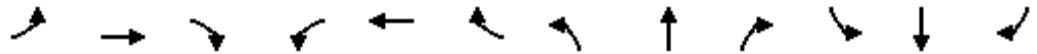


Lanes, Volumes, Timings

2022 No-Build AM Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	312	104	42	409	115	75	192	23	67	337	18
Future Volume (vph)	19	312	104	42	409	115	75	192	23	67	337	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99	0.99			0.99		0.99	1.00	
Fr _t		0.962			0.967			0.989			0.992	
Fl _t Protected	0.950			0.950				0.987		0.950		
Satd. Flow (prot)	1539	2930	0	1578	3142	0	0	1770	0	1627	1695	0
Fl _t Permitted	0.386			0.437				0.661		0.487		
Satd. Flow (perm)	622	2930	0	718	3142	0	0	1182	0	827	1695	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	9		16	16		9	25		11	11		25
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.83	0.83	0.83	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	22	363	121	46	445	125	90	231	28	70	351	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	484	0	46	570	0	0	349	0	70	370	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4				8
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4		8
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	47.0	47.0		47.0	47.0		28.0	73.0		73.0	45.0	
Total Split (%)	39.2%	39.2%		39.2%	39.2%		23.3%	60.8%		60.8%	37.5%	
Maximum Green (s)	41.7	41.7		41.7	41.7		21.8	66.6		66.6	38.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	59.8	59.8		59.8	59.8			50.2		50.2	50.2	

Lanes, Volumes, Timings

2022 No-Build AM Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	77	0	10	6	0	5	2	430	5	0	681	66
Future Volume (vph)	77	0	10	6	0	5	2	430	5	0	681	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%				-4%
Storage Length (ft)	0		0	0		0	225		0	250		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		1.00			0.99		1.00	1.00			1.00	
Frt		0.985			0.944			0.998			0.987	
Flt Protected		0.958			0.972		0.950					
Satd. Flow (prot)	0	1737	0	0	1701	0	1686	3364	0	1846	3452	0
Flt Permitted		0.742			0.816		0.281					
Satd. Flow (perm)	0	1345	0	0	1418	0	497	3364	0	1846	3452	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)			16	16			4		4	4		4
Peak Hour Factor	0.52	0.52	0.52	0.92	0.92	0.92	0.93	0.93	0.93	0.84	0.84	0.84
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	148	0	19	7	0	5	2	462	5	0	811	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	12	0	2	467	0	0	890	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		11.7			11.6		21.6	21.6			21.6	
Actuated g/C Ratio		0.27			0.27		0.50	0.50			0.50	

Lanes, Volumes, Timings
 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

2022 No-Build AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.46			0.03		0.01	0.28				0.52
Control Delay		17.7			12.1		6.5	7.3				9.1
Queue Delay		0.0			0.0		0.0	0.0				0.0
Total Delay		17.7			12.1		6.5	7.3				9.1
LOS		B			B		A	A				A
Approach Delay		17.7			12.1			7.3				9.1
Approach LOS		B			B			A				A
Queue Length 50th (ft)		30			2		0	31				68
Queue Length 95th (ft)		42			11		3	60				111
Internal Link Dist (ft)		371			258			2028				704
Turn Bay Length (ft)							225					
Base Capacity (vph)		471			493		497	3364				3452
Starvation Cap Reductn		0			0		0	0				0
Spillback Cap Reductn		0			0		0	0				0
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		0.35			0.02		0.00	0.14				0.26

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	43.4
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	9.5
Intersection LOS:	A
Intersection Capacity Utilization:	42.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

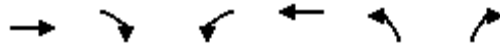
2022 No-Build AM Peak
 Timing Plan: AM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	113	159	600	134	0	0		
Future Volume (vph)	113	159	600	134	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.94		0.90					
Frt	0.921							
Flt Protected			0.950					
Satd. Flow (prot)	1429	0	2837	1592	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1429	0	2560	1592	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		57	57					
Peak Hour Factor	0.81	0.81	0.87	0.87	0.90	0.90		
Heavy Vehicles (%)	2%	2%	9%	9%	2%	2%		
Adj. Flow (vph)	140	196	690	154	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	336	0	690	154	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	17.0			15.0			13.0	20.0
Total Split (s)	25.0			40.0			15.0	20.0
Total Split (%)	41.7%			66.7%			25%	33%
Maximum Green (s)	19.9			35.0			9.9	16.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effect Green (s)	20.0		30.0	38.8				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 No-Build AM Peak
 Timing Plan: AM Peak

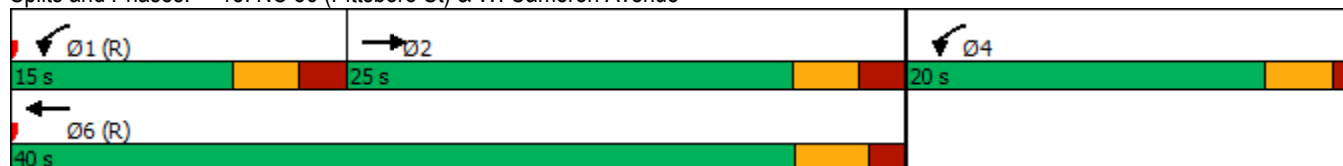


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.33		0.50	0.65				
v/c Ratio	0.71		0.49	0.15				
Control Delay	27.6		14.4	5.9				
Queue Delay	0.0		0.0	0.0				
Total Delay	27.6		14.4	5.9				
LOS	C		B	A				
Approach Delay	27.6			12.9				
Approach LOS	C			B				
Queue Length 50th (ft)	104		190	31				
Queue Length 95th (ft)	162		187	m83				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	476		1374	1028				
Starvation Cap Reductn	0		0	0				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.71		0.50	0.15				

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 23 (38%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 17.1
 Intersection LOS: B
 Intersection Capacity Utilization 47.3%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2022 No-Build AM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	91	0	0	95	20	98	359	43	66	0	536
Future Volume (vph)	12	91	0	0	95	20	98	359	43	66	0	536
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.95				0.99		0.79	0.94		0.74		0.77
Fr _t					0.977			0.984				0.850
Fl _t Protected	0.950						0.950	0.999		0.950		
Satd. Flow (prot)	1532	1668	0	0	1565	0	1248	2443	0	1413	0	2302
Fl _t Permitted	0.522						0.950	0.999		0.950		
Satd. Flow (perm)	803	1668	0	0	1565	0	982	2431	0	1044	0	1776
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	39		102	102		39	71		107	107		71
Peak Hour Factor	0.79	0.79	0.79	0.83	0.83	0.83	0.86	0.86	0.86	0.89	0.89	0.89
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	15	115	0	0	114	24	114	417	50	74	0	602
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	15	115	0	0	138	0	103	478	0	74	0	602
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	34.0	34.0			34.0		22.0	22.0		36.0		36.0
Total Split (%)	28.3%	28.3%			28.3%		18.3%	18.3%		30.0%		30.0%
Maximum Green (s)	27.8	27.8			27.8		16.1	16.1		30.4		30.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	16.4	16.4			16.4		46.9	46.9		41.7		41.7

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings

2022 No-Build AM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: AM Peak

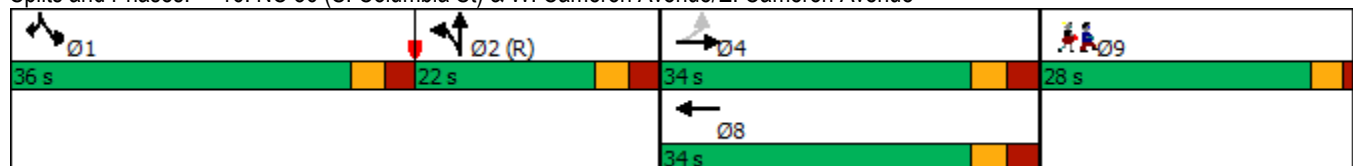


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14			0.14		0.39	0.39		0.35		0.35
v/c Ratio	0.14	0.50			0.64		0.21	0.50		0.15		0.75
Control Delay	34.9	41.2			62.3		27.9	31.4		7.2		17.1
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	34.9	41.2			62.3		27.9	31.4		7.2		17.1
LOS	C	D			E		C	C		A		B
Approach Delay		40.5			62.3			30.8				16.0
Approach LOS		D			E			C				B
Queue Length 50th (ft)	8	82			103		57	152		5		82
Queue Length 95th (ft)	m11	m111			148		110	219		m16		303
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	194	403			378		487	953		491		799
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	0.08	0.29			0.37		0.21	0.50		0.15		0.75

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 39 (33%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 27.9
 Intersection LOS: C
 Intersection Capacity Utilization 66.9%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 No-Build AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	23	44	32	28	142	226	24	45	17	300	148	48
Future Volume (vph)	23	44	32	28	142	226	24	45	17	300	148	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.98	0.98		0.91	0.96		0.89	0.95	
Frt		0.956			0.908			0.958			0.963	
Flt Protected		0.989		0.950			0.950			0.950		
Satd. Flow (prot)	0	1493	0	1569	1468	0	1492	1446	0	1569	1509	0
Flt Permitted		0.834		0.574			0.628			0.457		
Satd. Flow (perm)	0	1257	0	934	1468	0	896	1446	0	674	1509	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	3		6	6		3	31		25	25		31
Peak Hour Factor	0.71	0.71	0.71	0.84	0.84	0.84	0.79	0.79	0.79	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	10%	10%	10%	3%	3%	3%
Adj. Flow (vph)	32	62	45	33	169	269	30	57	22	319	157	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	33	438	0	30	79	0	319	208	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		20.5		24.6	24.6		15.5	10.2		25.5	21.7	
Actuated g/C Ratio		0.33		0.40	0.40		0.25	0.17		0.41	0.35	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 No-Build AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.33		0.07	0.75		0.10	0.33		0.65	0.39	
Control Delay		22.0		12.5	25.4		15.1	32.4		22.6	22.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		22.0		12.5	25.4		15.1	32.4		22.6	22.4	
LOS		C		B	C		B	C		C	C	
Approach Delay		22.0			24.5			27.6			22.5	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		35		8	141		6	28		79	48	
Queue Length 95th (ft)		79		23	244		24	70		#229	168	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		923		571	1370		517	799		552	834	
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		0.15		0.06	0.32		0.06	0.10		0.58	0.25	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 61.5
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 23.7
 Intersection LOS: C
 Intersection Capacity Utilization 61.7%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road



Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 No-Build Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	6	318	29	39	345	24	23	42	55	14	33	10
Future Volume (vph)	6	318	29	39	345	24	23	42	55	14	33	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.92			0.95	
Frt		0.989			0.992			0.938			0.976	
Flt Protected		0.999			0.995			0.991			0.988	
Satd. Flow (prot)	0	1709	0	0	1747	0	0	1481	0	0	1562	0
Flt Permitted		0.994			0.942			0.920			0.919	
Satd. Flow (perm)	0	1700	0	0	1648	0	0	1335	0	0	1428	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	22		24	24		22	75		39	39		75
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	361	33	42	371	26	25	46	60	22	52	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	401	0	0	439	0	0	131	0	0	90	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	43.0	43.0		43.0	43.0		22.0	22.0		22.0	22.0	
Total Split (%)	66.2%	66.2%		66.2%	66.2%		33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	38.5	38.5		38.4	38.4		17.1	17.1		17.1	17.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		46.9			46.9			11.5			11.5	
Actuated g/C Ratio		0.72			0.72			0.18			0.18	
v/c Ratio		0.33			0.37			0.56			0.36	
Control Delay		6.0			2.6			31.6			26.2	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 No-Build Noon Peak
 Timing Plan: Noon Peak

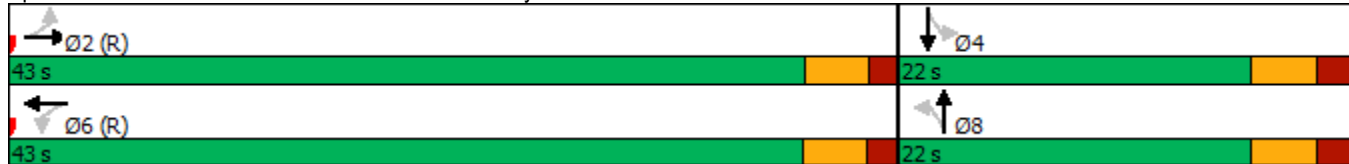


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.0			2.6			31.6			26.2	
LOS		A			A			C			C	
Approach Delay		6.0			2.6			31.6			26.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		56			23			47			32	
Queue Length 95th (ft)		120			44			66			43	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1226			1189			349			373	
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		0.33			0.37			0.38			0.24	

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	23 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	9.5
Intersection LOS:	A
Intersection Capacity Utilization	66.6%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 1: Church Street & W. Rosemary Street



Lanes, Volumes, Timings

2022 No-Build Noon Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	195	48	40	203	54	44	315	99	76	356	178
Future Volume (vph)	155	195	48	40	203	54	44	315	99	76	356	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.97	0.99		0.96	0.98		0.85	0.88		0.78		0.66
Frt		0.970			0.968			0.964				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1594	0	1585	1584	0	1355	2382	0	1485	2673	1285
Flt Permitted	0.281			0.589			0.462			0.425		
Satd. Flow (perm)	408	1594	0	940	1584	0	563	2382	0	518	2673	850
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			339			353			476	
Travel Time (s)		25.8			11.6			9.6			13.0	
Confl. Peds. (#/hr)	53		41	41		53	80		129	129		80
Peak Hour Factor	0.88	0.88	0.88	0.85	0.85	0.85	0.98	0.98	0.98	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	5%	5%	5%
Adj. Flow (vph)	176	222	55	47	239	64	45	321	101	88	414	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	277	0	47	303	0	45	422	0	88	414	207
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	43.0	63.0		20.0	20.0		15.0	52.0		15.0	52.0	43.0
Total Split (%)	33.1%	48.5%		15.4%	15.4%		11.5%	40.0%		11.5%	40.0%	33.1%
Maximum Green (s)	37.2	57.0		14.0	14.0		9.2	46.2		9.9	46.2	37.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		0.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	58.0	58.0		33.4	33.4		55.2	48.8		58.3	51.5	71.1

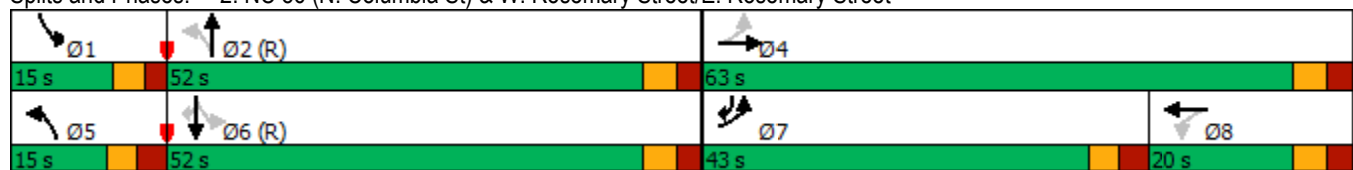


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.45	0.45		0.26	0.26		0.42	0.38		0.45	0.40	0.55
v/c Ratio	0.53	0.39		0.20	0.75		0.16	0.47		0.30	0.39	0.39
Control Delay	29.6	27.3		40.9	54.4		16.4	19.7		21.9	30.3	17.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.6		0.0	0.0	0.0
Total Delay	29.6	27.3		40.9	54.4		16.4	20.3		21.9	30.3	17.4
LOS	C	C		D	D		B	C		C	C	B
Approach Delay		28.2			52.5			19.9			25.5	
Approach LOS		C			D			B			C	
Queue Length 50th (ft)	93	179		27	219		9	47		40	134	86
Queue Length 95th (ft)	123	224		67	#394		m28	112		69	174	111
Internal Link Dist (ft)		677			259			273			396	
Turn Bay Length (ft)	100			150			75			150		400
Base Capacity (vph)	479	711		241	406		303	893		311	1058	712
Starvation Cap Reductn	0	0		0	0		0	189		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.37	0.39		0.20	0.75		0.15	0.60		0.28	0.39	0.29

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 55 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 29.6 Intersection LOS: C
 Intersection Capacity Utilization 67.6% 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: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 No-Build Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	201	140	15	211	31	62	30	11	9	30	13
Future Volume (vph)	15	201	140	15	211	31	62	30	11	9	30	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.97			0.99			0.84			0.92	
Frt		0.938			0.984			0.986			0.967	
Flt Protected	0.950				0.997			0.971			0.991	
Satd. Flow (prot)	1593	1524	0	0	1629	0	0	1582	0	0	1474	0
Flt Permitted	0.635				0.976			0.780			0.932	
Satd. Flow (perm)	1025	1524	0	0	1591	0	0	1084	0	0	1364	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		156			1195			366			450	
Travel Time (s)		5.3			40.7			12.5			15.3	
Confl. Peds. (#/hr)	21		19	19		21	106		47	47		106
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.68	0.68	0.68	0.85	0.85	0.85
Adj. Flow (vph)	16	209	146	16	222	33	91	44	16	11	35	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	355	0	0	271	0	0	151	0	0	61	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	38.0	38.0		38.0	38.0		27.0	27.0		27.0	27.0	
Total Split (%)	58.5%	58.5%		58.5%	58.5%		41.5%	41.5%		41.5%	41.5%	
Maximum Green (s)	33.1	33.1		33.1	33.1		22.2	22.2		22.2	22.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.1			0.1			0.2			0.2	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.2	45.2			45.2			13.3			13.3	
Actuated g/C Ratio	0.70	0.70			0.70			0.20			0.20	
v/c Ratio	0.02	0.33			0.24			0.68			0.22	

Lanes, Volumes, Timings
 6: Henderson Street & E. Rosemary Street

2022 No-Build Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.5	5.6			6.6			36.1			21.4	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	5.5	5.6			6.6			36.1			21.4	
LOS	A	A			A			D			C	
Approach Delay		5.6			6.6			36.1			21.4	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	2	43			66			68			20	
Queue Length 95th (ft)	m7	99			115			68			40	
Internal Link Dist (ft)		76			1115			286			370	
Turn Bay Length (ft)	85											
Base Capacity (vph)	713	1060			1107			366			461	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.02	0.33			0.24			0.41			0.13	

Intersection Summary

Area Type: CBD
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 63 (97%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 12.4
 Intersection LOS: B
 Intersection Capacity Utilization 50.3%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 No-Build Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	23	90	96	3	51	9	169	179	9	16	218	25
Future Volume (vph)	23	90	96	3	51	9	169	179	9	16	218	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98		0.93	1.00		0.99	0.98	
Frt		0.938			0.980			0.993			0.985	
Flt Protected		0.994			0.998		0.950			0.950		
Satd. Flow (prot)	0	1662	0	0	1791	0	1770	1847	0	1719	1750	0
Flt Permitted		0.959			0.981		0.487			0.625		
Satd. Flow (perm)	0	1588	0	0	1757	0	843	1847	0	1117	1750	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	35		35	35		35	50		5	5		50
Peak Hour Factor	0.93	0.93	0.93	0.78	0.78	0.78	0.88	0.88	0.88	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	25	97	103	4	65	12	192	203	10	18	240	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	225	0	0	81	0	192	213	0	18	267	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	24.0	24.0		24.0	24.0		13.0	41.0		28.0	28.0	
Total Split (%)	36.9%	36.9%		36.9%	36.9%		20.0%	63.1%		43.1%	43.1%	
Maximum Green (s)	19.1	19.1		19.0	19.0		8.2	36.2		23.2	23.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		13.3			13.3		41.7	41.7		29.2	29.2	
Actuated g/C Ratio		0.20			0.20		0.64	0.64		0.45	0.45	
v/c Ratio		0.69			0.23		0.30	0.18		0.04	0.34	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 No-Build Noon Peak
Timing Plan: Noon Peak

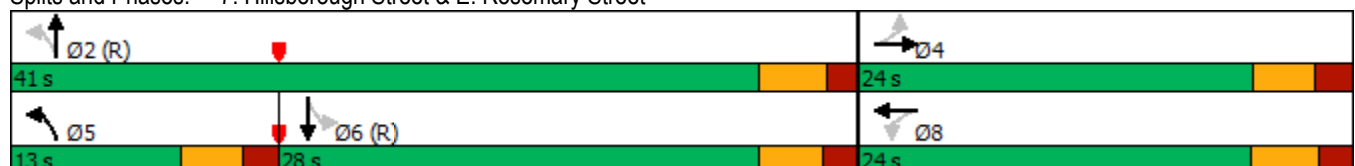


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		31.5			21.3		6.5	5.7		13.0	14.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		31.5			21.3		6.5	5.7		13.0	14.7	
LOS		C			C		A	A		B	B	
Approach Delay		31.5			21.3			6.1			14.6	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		76			27		53	59		4	65	
Queue Length 95th (ft)		98			45		70	77		17	138	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		464			513		655	1184		502	787	
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		0.48			0.16		0.29	0.18		0.04	0.34	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	19 (29%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	15.5
Intersection LOS:	B
Intersection Capacity Utilization	55.2%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 No-Build Noon Peak
 Timing Plan: Noon Peak


























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	357	26	32	328	68	10	10	22	23	23	52
Future Volume (vph)	50	357	26	32	328	68	10	10	22	23	23	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.84	0.97		0.78	0.93			0.86	0.87		0.79	
Fr _t		0.990			0.974				0.850		0.928	
Fl _t Protected	0.950			0.950				0.976			0.988	
Satd. Flow (prot)	1443	1452	0	1472	1409	0	0	1669	1454	0	1224	0
Fl _t Permitted	0.485			0.482				0.831			0.920	
Satd. Flow (perm)	620	1452	0	582	1409	0	0	1222	1262	0	1110	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			298			285			379	
Travel Time (s)		33.9			10.2			9.7			10.3	
Confl. Peds. (#/hr)	150		248	248		150	225		77	77		225
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.81	0.81	0.81	0.71	0.71	0.71
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	57	410	30	35	360	75	12	12	27	32	32	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	440	0	35	435	0	0	24	27	0	137	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	36.0	36.0		36.0	36.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	55.4%	55.4%		55.4%	55.4%		44.6%	44.6%	44.6%	44.6%	44.6%	
Maximum Green (s)	30.4	30.4		30.4	30.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6		-1.3	-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	45.1	45.1		45.1	45.1		13.6	13.6	13.6		13.5	

Lanes, Volumes, Timings

2022 No-Build Noon Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	298	46	82	308	87	61	278	90	50	301	86
Future Volume (vph)	101	298	46	82	308	87	61	278	90	50	301	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.80	0.96		0.82		0.67	0.82	0.91		0.80	0.92	
Frt		0.980				0.850		0.963			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1372	2853	0	1437	1512	1423	1342	2446	0	1346	2396	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1096	2853	0	1178	1512	947	1096	2446	0	1071	2396	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		457			941			981			353	
Travel Time (s)		15.6			32.1			26.8			9.6	
Confl. Peds. (#/hr)	251		248	248		251	117		321	321		117
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	126	373	58	94	354	100	66	299	97	59	354	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	431	0	94	354	100	66	396	0	59	455	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	25.0	32.0		25.0	32.0	25.0	25.0	48.0		25.0	48.0	
Total Split (%)	19.2%	24.6%		19.2%	24.6%	19.2%	19.2%	36.9%		19.2%	36.9%	
Maximum Green (s)	19.6	25.8		19.1	25.8	19.1	19.1	42.1		19.1	42.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	15.7	55.5		13.0	52.8	65.6	11.2	30.9		10.6	32.8	

Lanes, Volumes, Timings

2022 No-Build Noon Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.12	0.43		0.10	0.41	0.50	0.09	0.24		0.08	0.25	
v/c Ratio	0.76	0.35		0.66	0.58	0.19	0.57	0.68		0.54	0.75	
Control Delay	76.2	31.0		82.3	38.4	13.5	100.5	29.6		93.4	34.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	76.2	31.0		82.3	38.4	13.5	100.5	29.6		93.4	34.7	
LOS	E	C		F	D	B	F	C		F	C	
Approach Delay		41.2			41.4			39.7			41.5	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	98	123		73	243	30	57	67		52	87	
Queue Length 95th (ft)	136	210		136	#462	62	106	65		94	84	
Internal Link Dist (ft)		377			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	217	1218		221	614	623	206	809		207	792	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	8	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.58	0.35		0.43	0.58	0.16	0.32	0.49		0.29	0.58	

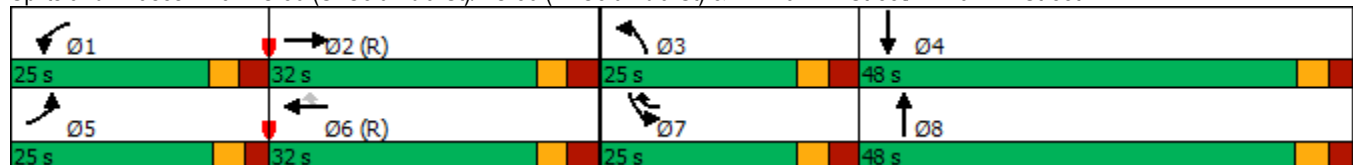
Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 41.0
 Intersection LOS: D
 Intersection Capacity Utilization 65.4%
 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: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2022 No-Build Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	47	377	415	61	106	80
Future Volume (vph)	47	377	415	61	106	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		0.99	0.97		0.80	
Frt			0.981		0.942	
Flt Protected		0.995			0.972	
Satd. Flow (prot)	0	3213	2733	0	1259	0
Flt Permitted		0.861			0.972	
Satd. Flow (perm)	0	2744	2733	0	1164	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	119			119	130	370
Peak Hour Factor	0.95	0.95	0.92	0.92	0.87	0.87
Heavy Vehicles (%)	5%	5%	4%	4%	2%	2%
Parking (#/hr)						0
Adj. Flow (vph)	49	397	451	66	122	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	446	517	0	214	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	17.0	17.0	22.0		25.0	
Total Split (s)	32.0	32.0	32.0		33.0	
Total Split (%)	49.2%	49.2%	49.2%		50.8%	
Maximum Green (s)	25.8	25.8	25.9		27.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		40.0	40.0		15.0	
Actuated g/C Ratio		0.62	0.62		0.23	
v/c Ratio		0.26	0.31		0.74	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2022 No-Build Noon Peak
 Timing Plan: Noon Peak

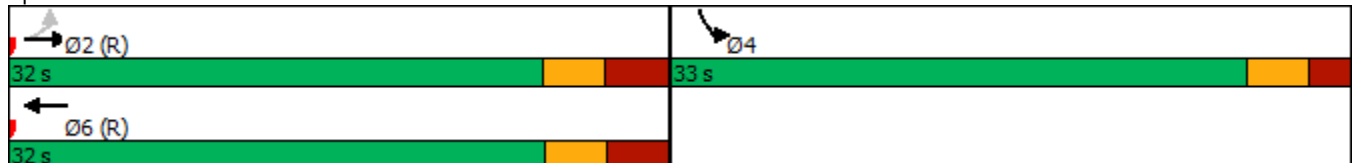


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		6.5	8.3		35.7	
Queue Delay		0.0	0.0		0.0	
Total Delay		6.5	8.3		35.7	
LOS		A	A		D	
Approach Delay		6.5	8.3		35.7	
Approach LOS		A	A		D	
Queue Length 50th (ft)		19	38		93	
Queue Length 95th (ft)		142	155		129	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1689	1682		542	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.26	0.31		0.39	

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	4 (6%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	12.6
Intersection LOS:	B
Intersection Capacity Utilization	57.2%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 10: E. Franklin Street & Henderson Street



Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2022 No-Build Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	337	152	41	374	148	86	163	23	77	197	23
Future Volume (vph)	55	337	152	41	374	148	86	163	23	77	197	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.98		0.99	0.98			0.97		0.97	0.98	
Fr _t		0.953			0.957			0.989			0.984	
Fl _t Protected	0.950			0.950				0.984		0.950		
Satd. Flow (prot)	1539	2889	0	1593	3092	0	0	1794	0	1612	1639	0
Fl _t Permitted	0.406			0.425				0.668		0.498		
Satd. Flow (perm)	642	2889	0	703	3092	0	0	1188	0	819	1639	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	50		25	25		50	93		33	33		93
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.94	0.94	0.94	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	60	370	167	45	411	163	91	173	24	86	219	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	537	0	45	574	0	0	288	0	86	245	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4				8
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4		8
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	60.0	60.0		60.0	60.0		31.0	70.0		70.0	39.0	
Total Split (%)	46.2%	46.2%		46.2%	46.2%		23.8%	53.8%		53.8%	30.0%	
Maximum Green (s)	54.7	54.7		54.7	54.7		24.8	63.6		63.6	32.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	78.3	78.3		78.3	78.3			41.7		41.7	41.7	

Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2022 No-Build Noon Peak
 Timing Plan: Noon Peak

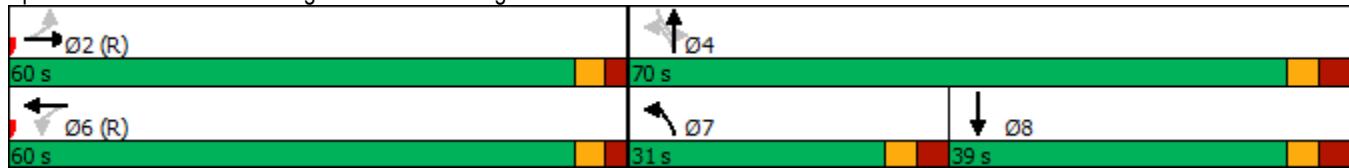


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.32		0.32	0.32	
v/c Ratio	0.16	0.31		0.11	0.31			0.76		0.33	0.47	
Control Delay	13.8	11.7		15.4	14.8			51.3		31.1	34.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	4.4	
Total Delay	13.8	11.7		15.4	14.8			51.3		31.1	38.9	
LOS	B	B		B	B			D		C	D	
Approach Delay		11.9			14.8			51.3			36.9	
Approach LOS		B			B			D			D	
Queue Length 50th (ft)	13	66		15	118			217		50	151	
Queue Length 95th (ft)	51	156		45	199			277		80	194	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	386	1740		423	1862			594		409	543	
Starvation Cap Reductn	0	0		0	0			0		0	222	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.16	0.31		0.11	0.31			0.48		0.21	0.76	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 57 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 23.6
 Intersection LOS: C
 Intersection Capacity Utilization 77.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street

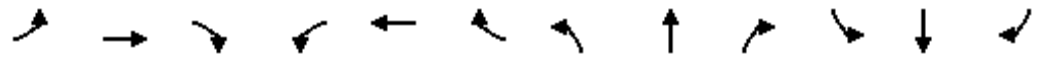


Lanes, Volumes, Timings

2022 No-Build Noon Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	37	0	19	4	0	2	7	485	8	1	530	35
Future Volume (vph)	37	0	19	4	0	2	7	485	8	1	530	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		0.99			0.98		0.99	1.00		0.98	1.00	
Frt		0.954			0.955			0.998			0.991	
Flt Protected		0.968			0.968		0.950			0.950		
Satd. Flow (prot)	0	1720	0	0	1706	0	1670	3330	0	1753	3467	0
Flt Permitted		0.794			0.754		0.417			0.445		
Satd. Flow (perm)	0	1410	0	0	1314	0	728	3330	0	807	3467	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)	1		19	19		1	7		15	15		7
Peak Hour Factor	0.76	0.76	0.76	0.50	0.50	0.50	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	7%	7%	7%	5%	5%	5%
Adj. Flow (vph)	49	0	25	8	0	4	8	545	9	1	582	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	12	0	8	554	0	1	620	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		8.6			8.6		24.2	24.2		24.2	24.2	
Actuated g/C Ratio		0.24			0.24		0.69	0.69		0.69	0.69	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.21			0.04		0.02	0.24		0.00	0.26	
Control Delay		12.5			10.7		5.6	5.0		5.0	5.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		12.5			10.7		5.6	5.0		5.0	5.1	
LOS		B			B		A	A		A	A	
Approach Delay		12.5			10.7			5.1			5.1	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		14			2		1	30		0	33	
Queue Length 95th (ft)		27			5		5	56		1	63	
Internal Link Dist (ft)		371			258			2028			704	
Turn Bay Length (ft)							225			250		
Base Capacity (vph)		604			559		728	3330		807	3467	
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		0.12			0.02		0.01	0.17		0.00	0.18	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 35.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.26

Intersection Signal Delay: 5.6

Intersection LOS: A

Intersection Capacity Utilization 36.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

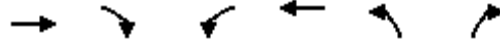
2022 No-Build Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	75	152	434	214	0	0		
Future Volume (vph)	75	152	434	214	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.77		0.65					
Frt	0.910							
Flt Protected			0.950					
Satd. Flow (prot)	1164	0	2837	1592	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1164	0	1832	1592	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		129	129					
Peak Hour Factor	0.71	0.71	0.93	0.93	0.90	0.90		
Heavy Vehicles (%)	2%	2%	9%	9%	2%	2%		
Adj. Flow (vph)	106	214	467	230	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	320	0	467	230	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	20.0			20.0			20.0	20.0
Total Split (s)	77.0			110.0			33.0	20.0
Total Split (%)	59.2%			84.6%			25%	15%
Maximum Green (s)	71.9			105.0			27.9	16.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	72.0		48.0	105.6				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 No-Build Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.55		0.37	0.81				
v/c Ratio	0.50		0.45	0.18				
Control Delay	21.2		26.1	3.1				
Queue Delay	0.0		1.0	0.5				
Total Delay	21.2		27.1	3.6				
LOS	C		C	A				
Approach Delay	21.2			19.4				
Approach LOS	C			B				
Queue Length 50th (ft)	160		155	29				
Queue Length 95th (ft)	171		232	m61				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	644		1038	1292				
Starvation Cap Reductn	0		323	717				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.50		0.65	0.40				

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 19.9 Intersection LOS: B
 Intersection Capacity Utilization 41.3% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2022 No-Build Noon Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	51	0	0	90	37	169	362	27	43	0	388
Future Volume (vph)	17	51	0	0	90	37	169	362	27	43	0	388
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.77				0.91		0.60	0.93		0.60		0.43
Frt				0.961			0.990					0.850
Flt Protected	0.950						0.950	0.998		0.950		
Satd. Flow (prot)	1488	1620	0	0	1403	0	1259	2485	0	1439	0	2345
Flt Permitted	0.489						0.950	0.998		0.950		
Satd. Flow (perm)	590	1620	0	0	1403	0	757	2443	0	858	0	1014
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	207		358	358		207	244		349	349		244
Peak Hour Factor	0.93	0.93	0.93	0.84	0.84	0.84	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	9%	9%	9%	8%	8%	8%
Adj. Flow (vph)	18	55	0	0	107	44	197	421	31	50	0	451
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	18	55	0	0	151	0	177	472	0	50	0	451
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	40.0	40.0			40.0		23.0	23.0		39.0		39.0
Total Split (%)	30.8%	30.8%			30.8%		17.7%	17.7%		30.0%		30.0%
Maximum Green (s)	33.8	33.8			33.8		17.1	17.1		33.4		33.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
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?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	19.6	19.6			19.6		64.9	64.9		30.5		30.5

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	22%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings

2022 No-Build Noon Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: Noon Peak

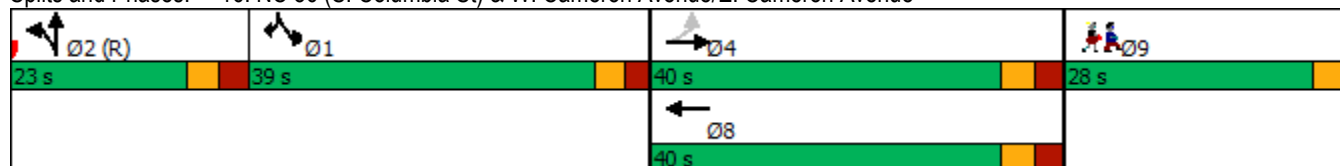


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15			0.15		0.50	0.50		0.23		0.23
v/c Ratio	0.20	0.23			0.71		0.28	0.38		0.15		0.82
Control Delay	36.4	33.5			70.0		23.0	23.1		18.6		35.1
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	36.4	33.5			70.0		23.0	23.1		18.6		35.1
LOS	D	C			E		C	C		B		D
Approach Delay		34.2			70.0			23.1				33.5
Approach LOS		C			E			C				C
Queue Length 50th (ft)	13	41			123		95	135		0		188
Queue Length 95th (ft)	m28	84			171		168	197		m37		269
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	158	436			377		628	1240		376		613
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	0.11	0.13			0.40		0.28	0.38		0.13		0.74

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 67 (52%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 32.6
 Intersection LOS: C
 Intersection Capacity Utilization 67.9%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 No-Build Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	31	64	33	21	86	172	33	76	28	240	111	44
Future Volume (vph)	31	64	33	21	86	172	33	76	28	240	111	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.91		0.90	0.87		0.67	0.95		0.87	0.85	
Frt		0.965			0.900			0.960			0.958	
Flt Protected		0.988		0.950			0.950			0.950		
Satd. Flow (prot)	0	1514	0	1569	1289	0	1505	1450	0	1554	1329	0
Flt Permitted		0.843		0.538			0.654			0.453		
Satd. Flow (perm)	0	1253	0	798	1289	0	697	1450	0	646	1329	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	38		43	43		38	103		33	33		103
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.93	0.93	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	4%	4%	4%
Adj. Flow (vph)	36	74	38	23	95	189	35	82	30	253	117	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	0	23	284	0	35	112	0	253	163	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		16.3		19.9	19.9		15.9	10.5		24.9	21.1	
Actuated g/C Ratio		0.29		0.35	0.35		0.28	0.19		0.44	0.38	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 No-Build Noon Peak
 Timing Plan: Noon Peak

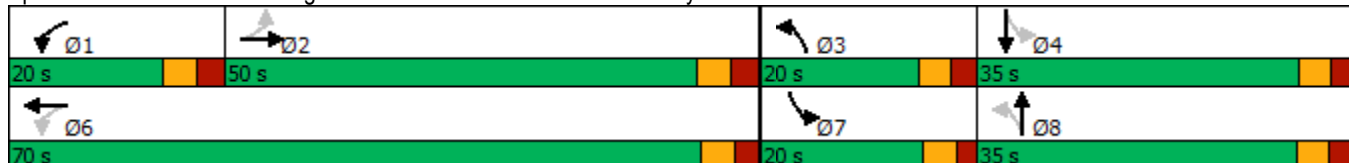


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.41		0.06	0.62		0.11	0.41		0.50	0.33	
Control Delay		25.4		13.7	23.1		12.5	30.1		15.1	19.1	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		25.4		13.7	23.1		12.5	30.1		15.1	19.1	
LOS		C		B	C		B	C		B	B	
Approach Delay		25.4			22.4			25.9			16.6	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		39		6	85		5	35		45	28	
Queue Length 95th (ft)		110		19	172		25	95		131	118	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		993		544	1230		548	863		589	791	
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		0.15		0.04	0.23		0.06	0.13		0.43	0.21	

Intersection Summary

Area Type:	CBD
Cycle Length:	125
Actuated Cycle Length:	56.1
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	21.0
Intersection LOS:	C
Intersection Capacity Utilization:	69.1%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road



Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 No-Build PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	24	420	65	55	432	37	47	79	63	24	75	26
Future Volume (vph)	24	420	65	55	432	37	47	79	63	24	75	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.98			0.93			0.95	
Frt		0.983			0.990			0.955			0.972	
Flt Protected		0.998			0.995			0.988			0.990	
Satd. Flow (prot)	0	1710	0	0	1751	0	0	1516	0	0	1556	0
Flt Permitted		0.968			0.910			0.903			0.925	
Satd. Flow (perm)	0	1655	0	0	1594	0	0	1345	0	0	1435	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	40		37	37		40	62		43	43		62
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	25	442	68	57	445	38	52	87	69	26	81	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	535	0	0	540	0	0	208	0	0	135	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	25.0		25.0	25.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	40.5	40.5		40.4	40.4		20.1	20.1		20.1	20.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		44.6			44.6			15.4			15.4	
Actuated g/C Ratio		0.64			0.64			0.22			0.22	
v/c Ratio		0.51			0.53			0.71			0.43	
Control Delay		9.9			5.9			36.9			26.6	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 No-Build PM Peak
 Timing Plan: PM Peak

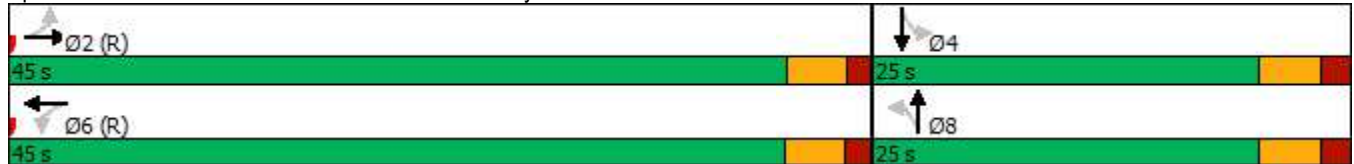


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		9.9			5.9			36.9			26.6	
LOS		A			A			D			C	
Approach Delay		9.9			5.9			36.9			26.6	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)		110			94			80			50	
Queue Length 95th (ft)		216			m94			m92			90	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1054			1015			384			410	
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		0.51			0.53			0.54			0.33	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 25 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 13.9
 Intersection LOS: B
 Intersection Capacity Utilization 77.6%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Church Street & W. Rosemary Street



Lanes, Volumes, Timings

2022 No-Build PM Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	267	49	52	216	49	51	591	75	75	510	274
Future Volume (vph)	230	267	49	52	216	49	51	591	75	75	510	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.97	0.99		0.96	0.98		0.94	0.96				0.73
Frt		0.977			0.972			0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1612	0	1585	1595	0	1420	2780	0	1514	2725	1310
Flt Permitted	0.187			0.547			0.356			0.252		
Satd. Flow (perm)	272	1612	0	879	1595	0	498	2780	0	402	2725	952
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			339			353			476	
Travel Time (s)		25.8			11.6			9.6			13.0	
Confl. Peds. (#/hr)	49		36	36		49	59		83	83		59
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.83	0.83	0.83	0.82	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	261	303	56	55	230	52	61	712	90	91	622	334
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	359	0	55	282	0	61	802	0	91	622	334
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	24.0	56.0		32.0	32.0		20.0	64.0		20.0	64.0	24.0
Total Split (%)	17.1%	40.0%		22.9%	22.9%		14.3%	45.7%		14.3%	45.7%	17.1%
Maximum Green (s)	18.2	50.0		26.0	26.0		14.2	58.2		14.9	58.2	18.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	50.2	50.2		26.2	26.2		75.2	66.6		75.9	69.2	88.2

Lanes, Volumes, Timings
 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

2022 No-Build PM Peak
 Timing Plan: PM Peak

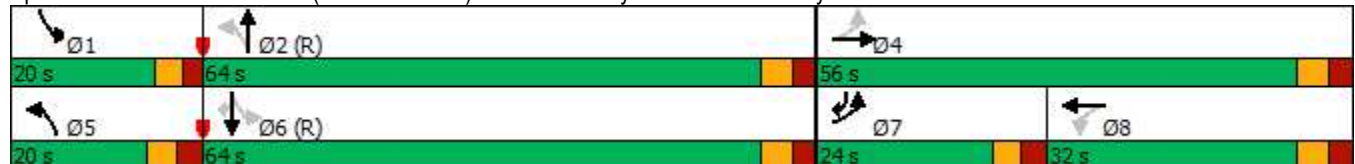


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.36	0.36		0.19	0.19		0.54	0.48		0.54	0.49	0.63
v/c Ratio	1.03	0.62		0.34	0.95		0.19	0.61		0.32	0.46	0.52
Control Delay	100.5	44.3		54.3	92.5		5.6	7.8		17.3	25.6	16.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	2.3		0.0	0.0	0.0
Total Delay	100.5	44.3		54.3	92.5		5.6	10.1		17.3	25.6	16.9
LOS	F	D		D	F		A	B		B	C	B
Approach Delay		67.9			86.3			9.8			22.1	
Approach LOS		E			F			A			C	
Queue Length 50th (ft)	~207	288		38	234		7	50		37	199	137
Queue Length 95th (ft)	#354	399		92	#428		m8	m52		59	230	181
Internal Link Dist (ft)		677			259			273			396	
Turn Bay Length (ft)	100			150			75			150		400
Base Capacity (vph)	254	587		169	307		384	1323		347	1346	647
Starvation Cap Reductn	0	0		0	0		0	373		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	33	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.03	0.61		0.33	0.92		0.16	0.84		0.26	0.47	0.52

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 62 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 35.9 Intersection LOS: D
 Intersection Capacity Utilization 78.8% ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 No-Build PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	293	175	12	198	57	66	24	5	23	41	10
Future Volume (vph)	43	293	175	12	198	57	66	24	5	23	41	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				3%
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.95			0.99			0.87			0.94	
Frt		0.944			0.971			0.993			0.981	
Flt Protected	0.950				0.998			0.966			0.985	
Satd. Flow (prot)	1593	1508	0	0	1603	0	0	1596	0	0	1549	0
Flt Permitted	0.620				0.977			0.791			0.892	
Satd. Flow (perm)	1017	1508	0	0	1569	0	0	1150	0	0	1355	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		156			1195			366			450	
Travel Time (s)		5.3			40.7			12.5			15.3	
Confl. Peds. (#/hr)	14		34	34		14	73		51	51		73
Peak Hour Factor	0.90	0.90	0.90	0.93	0.93	0.93	0.67	0.67	0.67	0.79	0.79	0.79
Adj. Flow (vph)	48	326	194	13	213	61	99	36	7	29	52	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	520	0	0	287	0	0	142	0	0	94	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Total Split (%)	45.7%	45.7%		45.7%	45.7%		54.3%	54.3%		54.3%	54.3%	
Maximum Green (s)	27.1	27.1		27.1	27.1		33.2	33.2		33.2	33.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.0			0.1			0.2			0.2	
Total Lost Time (s)	5.0	4.9			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	49.8	49.9			49.8			13.7			13.7	
Actuated g/C Ratio	0.71	0.71			0.71			0.20			0.20	
v/c Ratio	0.07	0.48			0.26			0.63			0.35	

Lanes, Volumes, Timings
 6: Henderson Street & E. Rosemary Street

2022 No-Build PM Peak
 Timing Plan: PM Peak

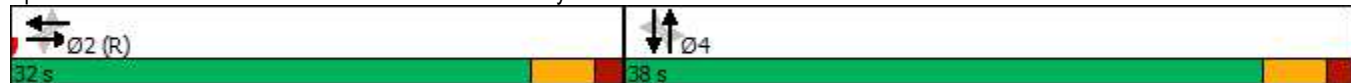


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	6.1	7.8			5.2			28.4			26.2	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	6.1	7.8			5.2			28.4			26.2	
LOS	A	A			A			C			C	
Approach Delay		7.6			5.2			28.4			26.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	6	87			57			52			36	
Queue Length 95th (ft)	m22	232			113			41			56	
Internal Link Dist (ft)		76			1115			286			370	
Turn Bay Length (ft)	85											
Base Capacity (vph)	723	1075			1116			542			638	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.07	0.48			0.26			0.26			0.15	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 14 (20%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 11.3
 Intersection LOS: B
 Intersection Capacity Utilization 50.3%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 No-Build PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	39	135	85	10	99	56	166	295	23	37	203	27
Future Volume (vph)	39	135	85	10	99	56	166	295	23	37	203	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.97		0.92	1.00		0.98	0.98	
Frt		0.956			0.954			0.989			0.982	
Flt Protected		0.993			0.997		0.950			0.950		
Satd. Flow (prot)	0	1738	0	0	1713	0	1770	1835	0	1770	1787	0
Flt Permitted		0.928			0.975		0.502			0.553		
Satd. Flow (perm)	0	1612	0	0	1674	0	859	1835	0	1010	1787	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	27		14	14		27	52		9	9		52
Peak Hour Factor	0.86	0.86	0.86	0.79	0.79	0.79	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	45	157	99	13	125	71	180	321	25	39	211	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	0	209	0	180	346	0	39	239	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	30.0	30.0		30.0	30.0		14.0	40.0		26.0	26.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		20.0%	57.1%		37.1%	37.1%	
Maximum Green (s)	25.1	25.1		25.0	25.0		9.2	35.2		21.2	21.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		17.5			17.5		42.5	42.5		29.7	29.7	
Actuated g/C Ratio		0.25			0.25		0.61	0.61		0.42	0.42	
v/c Ratio		0.75			0.50		0.29	0.31		0.09	0.32	
Control Delay		29.9			25.6		6.9	7.2		16.2	17.0	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 No-Build PM Peak
Timing Plan: PM Peak

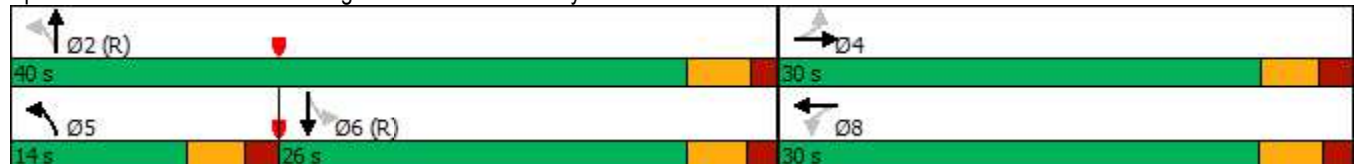


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0		0.0	0.3		0.0	0.0	
Total Delay		29.9			25.6		6.9	7.5		16.2	17.0	
LOS		C			C		A	A		B	B	
Approach Delay		29.9			25.6			7.3			16.9	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		126			77		36	86		10	65	
Queue Length 95th (ft)		119			100		71	152		34	144	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		575			597		640	1115		428	758	
Starvation Cap Reductn		0			0		0	322		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.52			0.35		0.28	0.44		0.09	0.32	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	32 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	17.4
Intersection LOS:	B
Intersection Capacity Utilization	64.0%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 No-Build PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	461	18	41	563	72	24	48	40	73	59	71
Future Volume (vph)	65	461	18	41	563	72	24	48	40	73	59	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.88	0.96			0.94	0.88		0.86	
Frt		0.994			0.983				0.850		0.953	
Flt Protected	0.950			0.950				0.983			0.982	
Satd. Flow (prot)	1457	1503	0	1501	1493	0	0	1681	1454	0	1422	0
Flt Permitted	0.290			0.395				0.867			0.849	
Satd. Flow (perm)	445	1503	0	547	1493	0	0	1388	1282	0	1190	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			294			285			379	
Travel Time (s)		33.9			10.0			9.7			10.3	
Confl. Peds. (#/hr)	124		164	164		124	175		63	63		175
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.81	0.81	0.81	0.91	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	71	507	20	44	605	77	30	59	49	80	65	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	527	0	44	682	0	0	89	49	0	223	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%	41.4%	41.4%	41.4%	
Maximum Green (s)	35.4	35.4		35.4	35.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	42.1	42.1		42.1	42.1			17.9	17.9		17.9	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 No-Build PM Peak
 Timing Plan: PM Peak

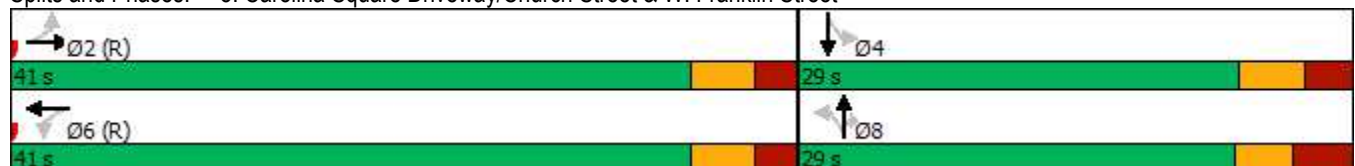


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.26	0.26		0.26	
v/c Ratio	0.27	0.58		0.13	0.76			0.25	0.15		0.74	
Control Delay	12.0	13.3		9.9	17.4			20.6	19.0		35.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	12.0	13.3		9.9	17.4			20.6	19.0		35.4	
LOS	B	B		A	B			C	B		D	
Approach Delay		13.2			16.9			20.0			35.4	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)	13	126		15	322			30	16		100	
Queue Length 95th (ft)	45	268		m18	m323			51	32		111	
Internal Link Dist (ft)		913			214			205			299	
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	267	904		329	898			475	439		408	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.27	0.58		0.13	0.76			0.19	0.11		0.55	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 66 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 18.3
 Intersection LOS: B
 Intersection Capacity Utilization 81.4%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
























Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2022 No-Build PM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	430	75	101	514	66	64	549	112	73	382	117
Future Volume (vph)	176	430	75	101	514	66	64	549	112	73	382	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.87	0.96		0.87		0.68	0.90	0.96		0.93	0.95	
Frt		0.978				0.850		0.975			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1412	2934	0	1479	1557	1465	1380	2690	0	1385	2529	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1223	2934	0	1287	1557	997	1239	2690	0	1282	2529	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		461			941			981			353	
Travel Time (s)		15.7			32.1			26.8			9.6	
Confl. Peds. (#/hr)	193		152	152		193	67		108	108		67
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	7%	7%	7%	4%	4%	4%
Adj. Flow (vph)	202	494	86	120	612	79	71	610	124	78	406	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	580	0	120	612	79	71	734	0	78	530	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	22.0	36.0		43.0	57.0	15.0	21.0	46.0		15.0	40.0	
Total Split (%)	15.7%	25.7%		30.7%	40.7%	10.7%	15.0%	32.9%		10.7%	28.6%	
Maximum Green (s)	16.6	29.8		37.1	50.8	9.1	15.1	40.1		9.1	34.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	18.3	54.5		15.8	52.0	63.8	11.7	40.2		9.6	40.6	

Lanes, Volumes, Timings

2022 No-Build PM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

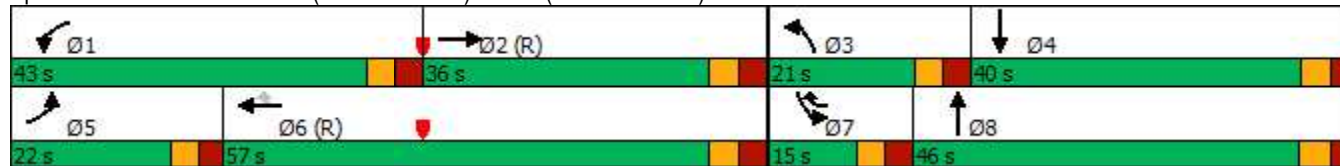


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.39		0.11	0.37	0.46	0.08	0.29		0.07	0.29	
v/c Ratio	1.10	0.51		0.72	1.06	0.16	0.62	0.95		0.83	0.72	
Control Delay	145.4	35.8		93.2	88.5	21.6	98.8	31.4		131.7	34.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.6	
Total Delay	145.4	35.8		93.2	88.5	21.6	98.8	31.4		131.7	35.5	
LOS	F	D		F	F	C	F	C		F	D	
Approach Delay		64.1			82.7			37.3			47.8	
Approach LOS		E			F			D			D	
Queue Length 50th (ft)	~222	196		113	~628	30	56	337		75	104	
Queue Length 95th (ft)	#364	297		167	#770	m56	m63	m#418		m#168	#231	
Internal Link Dist (ft)		381			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	184	1141		401	578	494	157	787		98	734	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	41	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.10	0.51		0.30	1.06	0.16	0.45	0.93		0.80	0.76	

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 58.7 Intersection LOS: E
 Intersection Capacity Utilization 85.3% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2022 No-Build PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	34	601	648	70	172	57
Future Volume (vph)	34	601	648	70	172	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.97		0.87	
Frt			0.985		0.966	
Flt Protected		0.997			0.964	
Satd. Flow (prot)	0	3282	2820	0	1402	0
Flt Permitted		0.884			0.964	
Satd. Flow (perm)	0	2898	2820	0	1300	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	114			114	88	198
Peak Hour Factor	0.90	0.90	0.93	0.93	0.83	0.83
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Parking (#/hr)						0
Adj. Flow (vph)	38	668	697	75	207	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	706	772	0	276	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	16.2	16.2	21.1		24.1	
Total Split (s)	43.0	43.0	43.0		27.0	
Total Split (%)	61.4%	61.4%	61.4%		38.6%	
Maximum Green (s)	36.8	36.8	36.9		21.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		43.2	43.2		16.8	
Actuated g/C Ratio		0.62	0.62		0.24	
v/c Ratio		0.39	0.44		0.82	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2022 No-Build PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		9.7	5.9		44.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.7	5.9		44.2	
LOS		A	A		D	
Approach Delay		9.7	5.9		44.2	
Approach LOS		A	A		D	
Queue Length 50th (ft)		188	73		116	
Queue Length 95th (ft)		m182	154		137	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1790	1742		440	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.39	0.44		0.63	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 27 (39%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 13.5
 Intersection LOS: B
 Intersection Capacity Utilization 71.4%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: E. Franklin Street & Henderson Street



Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2022 No-Build PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	555	239	62	663	242	52	199	23	70	208	13
Future Volume (vph)	51	555	239	62	663	242	52	199	23	70	208	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99			0.99		0.99	0.99	
Frt		0.955			0.960			0.989			0.991	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1585	2995	0	1609	3173	0	0	1813	0	1643	1702	0
Flt Permitted	0.248			0.286				0.695		0.407		
Satd. Flow (perm)	412	2995	0	482	3173	0	0	1259	0	700	1702	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	16		16	16		16	58		7	7		58
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88
Adj. Flow (vph)	56	610	263	67	721	263	56	214	25	80	236	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	873	0	67	984	0	0	295	0	80	251	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	79.0	79.0		79.0	79.0		14.0	61.0		61.0	47.0	
Total Split (%)	56.4%	56.4%		56.4%	56.4%		10.0%	43.6%		43.6%	33.6%	
Maximum Green (s)	73.7	73.7		73.7	73.7		7.8	54.6		54.6	40.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	93.1	93.1		93.1	93.1			36.9		36.9	36.9	
Actuated g/C Ratio	0.66	0.66		0.66	0.66			0.26		0.26	0.26	

Lanes, Volumes, Timings

2022 No-Build PM Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	96	2	18	34	1	8	14	854	13	11	646	77
Future Volume (vph)	96	2	18	34	1	8	14	854	13	11	646	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		0.99			0.99		0.99	1.00		0.99	1.00	
Frt		0.979			0.974			0.998			0.984	
Flt Protected		0.960			0.962		0.950			0.950		
Satd. Flow (prot)	0	1794	0	0	1732	0	1735	3458	0	1787	3504	0
Flt Permitted		0.723			0.751		0.349			0.251		
Satd. Flow (perm)	0	1349	0	0	1335	0	634	3458	0	466	3504	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)	2		20	20		2	7		28	28		7
Peak Hour Factor	0.89	0.89	0.89	0.75	0.75	0.75	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	108	2	20	45	1	11	16	993	15	12	695	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	57	0	16	1008	0	12	778	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		10.7			10.6		26.4	26.4		26.4	26.4	
Actuated g/C Ratio		0.25			0.25		0.62	0.62		0.62	0.62	

Lanes, Volumes, Timings
 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

2022 No-Build PM Peak
 Timing Plan: PM Peak

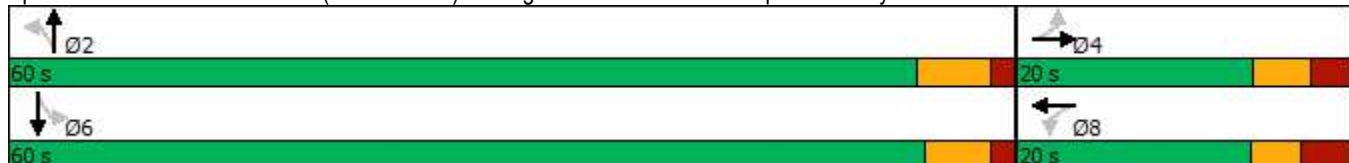


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.39			0.17		0.04	0.47		0.04	0.36	
Control Delay		18.7			15.7		6.0	7.5		6.1	6.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		18.7			15.7		6.0	7.5		6.1	6.6	
LOS		B			B		A	A		A	A	
Approach Delay		18.7			15.7			7.5			6.6	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		26			11		2	74		1	52	
Queue Length 95th (ft)		73			31		9	132		8	102	
Internal Link Dist (ft)		371			258			2028			704	
Turn Bay Length (ft)							225			250		
Base Capacity (vph)		487			479		633	3455		466	3501	
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		0.27			0.12		0.03	0.29		0.03	0.22	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 42.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 8.1
 Intersection Capacity Utilization 46.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 No-Build PM Peak
 Timing Plan: PM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	147	220	511	356	0	0		
Future Volume (vph)	147	220	511	356	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.84		0.74					
Frt	0.919							
Flt Protected			0.950					
Satd. Flow (prot)	1268	0	2890	1622	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1268	0	2146	1622	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		70	70					
Peak Hour Factor	0.93	0.93	0.96	0.96	0.90	0.90		
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%		
Adj. Flow (vph)	158	237	532	371	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	395	0	532	371	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	20.1			20.0			20.0	21.0
Total Split (s)	44.0			102.0			58.0	38.0
Total Split (%)	31.4%			72.9%			41%	27%
Maximum Green (s)	38.9			97.0			52.9	34.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lead						Lag	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	56.8		73.2	124.0				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 No-Build PM Peak
 Timing Plan: PM Peak

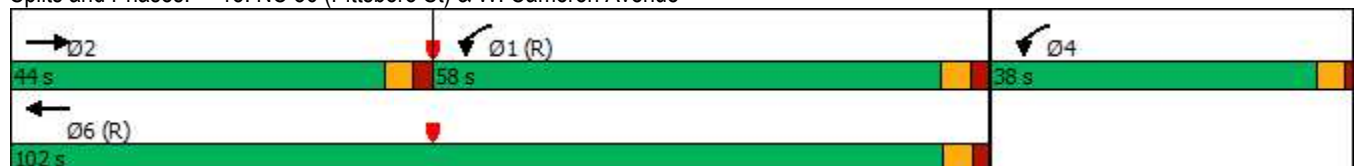


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.41		0.52	0.89				
v/c Ratio	0.77		0.35	0.26				
Control Delay	48.3		14.4	0.7				
Queue Delay	0.0		0.1	0.7				
Total Delay	48.3		14.5	1.4				
LOS	D		B	A				
Approach Delay	48.3			9.1				
Approach LOS	D			A				
Queue Length 50th (ft)	322		78	3				
Queue Length 95th (ft)	446		m110	m23				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	514		2067	1436				
Starvation Cap Reductn	0		551	727				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.77		0.35	0.52				

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 104 (74%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 21.0
 Intersection LOS: C
 Intersection Capacity Utilization 51.1%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2022 No-Build PM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	122	0	0	166	51	220	653	59	119	0	469
Future Volume (vph)	19	122	0	0	166	51	220	653	59	119	0	469
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.86				0.93		0.68	0.94		0.79		0.60
Fr _t					0.968			0.988				0.850
Fl _t Protected	0.950						0.950	0.999		0.950		
Satd. Flow (prot)	1532	1668	0	0	1493	0	1295	2540	0	1453	0	2367
Fl _t Permitted	0.298						0.950	0.999		0.950		
Satd. Flow (perm)	411	1668	0	0	1493	0	884	2516	0	1143	0	1418
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	157		172	172		157	111		248	248		111
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.87	0.87	0.87	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	6%	6%	6%	7%	7%	7%
Adj. Flow (vph)	21	134	0	0	184	57	253	751	68	140	0	552
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	21	134	0	0	241	0	228	844	0	140	0	552
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	31.0	31.0			31.0		47.0	47.0		34.0		34.0
Total Split (%)	22.1%	22.1%			22.1%		33.6%	33.6%		24.3%		24.3%
Maximum Green (s)	24.8	24.8			24.8		41.1	41.1		28.4		28.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	25.0	25.0			25.0		52.3	52.3		47.7		47.7

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	20%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings
 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

2022 No-Build PM Peak
 Timing Plan: PM Peak

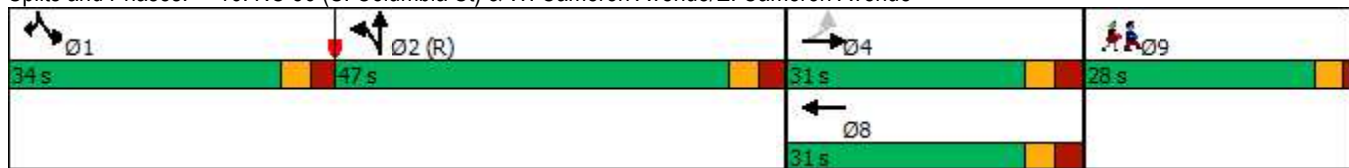


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.18	0.18			0.18		0.37	0.37		0.34		0.34
v/c Ratio	0.29	0.45			0.91		0.47	0.89		0.28		0.68
Control Delay	23.2	20.4			91.7		37.3	53.6		20.4		29.4
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	23.2	20.4			91.7		37.3	53.6		20.4		29.4
LOS	C	C			F		D	D		C		C
Approach Delay		20.7			91.7			50.2				27.6
Approach LOS		C			F			D				C
Queue Length 50th (ft)	10	74			216		169	387		83		243
Queue Length 95th (ft)	m14	m102			#367		254	#484		m111		293
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	76	309			277		483	949		495		806
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	0.28	0.43			0.87		0.47	0.89		0.28		0.68

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 23 (16%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 45.5 Intersection LOS: D
 Intersection Capacity Utilization 77.8% ICU Level of Service D
 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: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 No-Build PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	27	162	47	35	129	182	55	92	61	277	186	53
Future Volume (vph)	27	162	47	35	129	182	55	92	61	277	186	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%			1%	
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94			0.88			0.88		0.82	0.88	
Frt		0.973			0.912			0.940			0.967	
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1571	0	1569	1327	0	1563	1358	0	1585	1419	0
Flt Permitted		0.924		0.372			0.586			0.447		
Satd. Flow (perm)	0	1441	0	614	1327	0	964	1358	0	609	1419	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		598			651			409			995	
Travel Time (s)		16.3			17.8			11.2			27.1	
Confl. Peds. (#/hr)	39		37	37		39	107		60	60		107
Peak Hour Factor	0.75	0.75	0.75	0.89	0.89	0.89	0.89	0.89	0.89	0.84	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Adj. Flow (vph)	36	216	63	39	145	204	62	103	69	330	221	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	0	39	349	0	62	172	0	330	284	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		24.5		31.0	31.0		23.9	15.6		37.0	27.1	
Actuated g/C Ratio		0.31		0.39	0.39		0.30	0.20		0.47	0.34	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 No-Build PM Peak
 Timing Plan: PM Peak

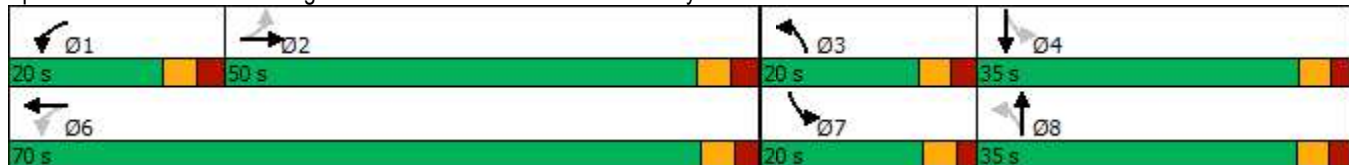


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.70		0.11	0.67		0.17	0.64		0.68	0.58	
Control Delay		35.2		15.2	26.1		17.7	43.5		26.9	32.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		35.2		15.2	26.1		17.7	43.5		26.9	32.7	
LOS		D		B	C		B	D		C	C	
Approach Delay		35.2			25.0			36.7			29.6	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)		146		11	130		19	84		120	132	
Queue Length 95th (ft)		213		32	251		51	172		#247	248	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		888		442	1086		512	558		486	586	
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		0.35		0.09	0.32		0.12	0.31		0.68	0.48	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 78.8
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 30.7
 Intersection LOS: C
 Intersection Capacity Utilization 80.1%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road





2022 With Site – Current Site Plan

Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 Build Alternative 1 AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	288	21	32	301	15	33	24	39	27	39	11
Future Volume (vph)	14	288	21	32	301	15	33	24	39	27	39	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.95			0.97	
Frt		0.991			0.994			0.946			0.981	
Flt Protected		0.998			0.995			0.983			0.983	
Satd. Flow (prot)	0	1734	0	0	1737	0	0	1505	0	0	1602	0
Flt Permitted		0.982			0.950			0.882			0.875	
Satd. Flow (perm)	0	1704	0	0	1655	0	0	1333	0	0	1398	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	20		17	17		20	21		31	31		21
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.84	0.84	0.84	0.72	0.72	0.72
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	16	335	24	36	338	17	39	29	46	38	54	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	0	391	0	0	114	0	0	107	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	38.0	38.0		38.0	38.0		22.0	22.0		22.0	22.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	33.5	33.5		33.4	33.4		17.1	17.1		17.1	17.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		42.8			42.8			10.5			10.5	
Actuated g/C Ratio		0.71			0.71			0.18			0.18	
v/c Ratio		0.31			0.33			0.49			0.44	
Control Delay		5.8			3.3			24.5			26.8	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 Build Alternative 1 AM Peak
 Timing Plan: AM Peak

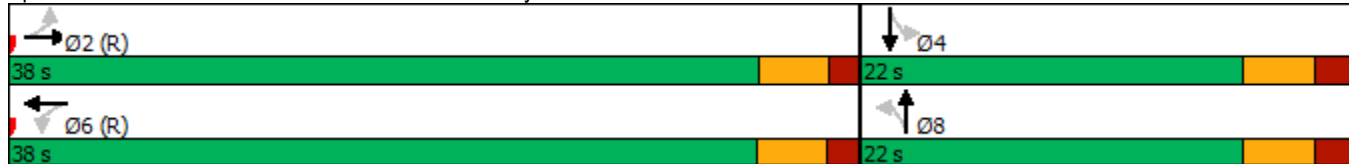


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.8			3.3			24.5			26.8	
LOS		A			A			C			C	
Approach Delay		5.8			3.3			24.5			26.8	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		48			18			38			35	
Queue Length 95th (ft)		102			48			53			53	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1216			1181			377			396	
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		0.31			0.33			0.30			0.27	

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	7 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	9.2
Intersection LOS:	A
Intersection Capacity Utilization	51.4%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: Church Street & W. Rosemary Street



Lanes, Volumes, Timings

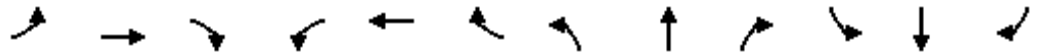
2022 Build Alternative 1 AM Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	208	21	15	166	34	22	309	73	108	559	176
Future Volume (vph)	150	208	21	15	166	34	22	309	73	108	559	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	75		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.99	1.00		0.98	1.00		0.98	0.97		0.94		0.91
Frt		0.986			0.974			0.971				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1640	0	1585	1617	0	1355	2657	0	1485	2673	1285
Flt Permitted	0.285			0.595			0.367			0.439		
Satd. Flow (perm)	424	1640	0	977	1617	0	514	2657	0	648	2673	1169
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			274			353			476	
Travel Time (s)		25.8			9.3			9.6			13.0	
Confl. Peds. (#/hr)	12		16	16		12	19		34	34		19
Peak Hour Factor	0.86	0.86	0.86	0.90	0.90	0.90	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	5%	5%	5%
Adj. Flow (vph)	174	242	24	17	184	38	24	343	81	123	635	200
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	266	0	17	222	0	24	424	0	123	635	200
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	23.0	57.0		34.0	34.0		13.0	50.0		13.0	50.0	23.0
Total Split (%)	19.2%	47.5%		28.3%	28.3%		10.8%	41.7%		10.8%	41.7%	19.2%
Maximum Green (s)	17.2	51.0		28.0	28.0		7.2	44.2		7.9	44.2	17.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effect Green (s)	41.9	41.9		20.9	20.9		63.1	54.9		65.9	60.5	76.4

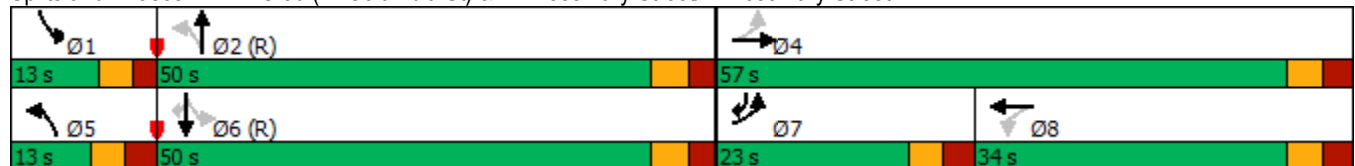


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.35	0.35		0.17	0.17		0.53	0.46		0.55	0.50	0.64
v/c Ratio	0.62	0.47		0.10	0.79		0.07	0.35		0.30	0.47	0.26
Control Delay	38.6	33.5		35.3	58.1		12.2	15.3		16.5	23.9	10.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1		0.0	0.0	0.0
Total Delay	38.6	33.5		35.3	58.1		12.2	15.4		16.5	24.0	10.9
LOS	D	C		D	E		B	B		B	C	B
Approach Delay		35.5			56.5			15.3			20.3	
Approach LOS		D			E			B			C	
Queue Length 50th (ft)	103	164		10	138		5	59		45	185	62
Queue Length 95th (ft)	141	225		29	200		m14	102		87	265	117
Internal Link Dist (ft)		677			194			273			396	
Turn Bay Length (ft)	100			75			75			150		400
Base Capacity (vph)	298	710		236	390		328	1215		415	1346	781
Starvation Cap Reductn	0	0		0	0		0	163		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	43	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.58	0.37		0.07	0.57		0.07	0.40		0.30	0.49	0.26

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 41 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 26.6 Intersection LOS: C
 Intersection Capacity Utilization 64.1% 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 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 1 AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	137	62	8	244	16	57	6	8	9	16	5
Future Volume (vph)	5	137	62	8	244	16	57	6	8	9	16	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99			1.00			0.95			0.98	
Frt		0.953			0.992			0.985			0.979	
Flt Protected	0.950				0.998			0.961			0.985	
Satd. Flow (prot)	1593	1580	0	0	1657	0	0	1559	0	0	1559	0
Flt Permitted	0.591				0.992			0.738			0.884	
Satd. Flow (perm)	985	1580	0	0	1646	0	0	1151	0	0	1380	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		496			1195			366			450	
Travel Time (s)		16.9			40.7			12.5			15.3	
Confl. Peds. (#/hr)	4		6	6		4	22		23	23		22
Peak Hour Factor	0.89	0.89	0.89	0.75	0.75	0.75	0.87	0.87	0.87	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	6	154	70	11	325	21	66	7	9	13	24	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	224	0	0	357	0	0	82	0	0	44	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.1	35.1		35.1	35.1		15.2	15.2		15.2	15.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.1			0.1			0.2			0.2	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	44.2	44.2			44.2			9.4			9.4	
Actuated g/C Ratio	0.74	0.74			0.74			0.16			0.16	

Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 1 AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.01	0.19			0.29			0.46				0.20
Control Delay	6.0	5.3			5.5			27.5				23.5
Queue Delay	0.0	0.0			0.0			0.0				0.0
Total Delay	6.0	5.3			5.5			27.5				23.5
LOS	A	A			A			C				C
Approach Delay		5.3			5.5			27.5				23.5
Approach LOS		A			A			C				C
Queue Length 50th (ft)	1	37			70			40				14
Queue Length 95th (ft)	m4	79			83			75				27
Internal Link Dist (ft)		416			1115			286				370
Turn Bay Length (ft)	85											
Base Capacity (vph)	725	1163			1211			287				345
Starvation Cap Reductn	0	0			0			0				0
Spillback Cap Reductn	0	0			0			0				0
Storage Cap Reductn	0	0			0			0				0
Reduced v/c Ratio	0.01	0.19			0.29			0.29				0.13

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 38 (63%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 9.1
 Intersection Capacity Utilization 41.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 1 AM Peak

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	6	57	67	0	110	12	141	142	6	21	356	32
Future Volume (vph)	6	57	67	0	110	12	141	142	6	21	356	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00		1.00	1.00	
Frt		0.930			0.987			0.994			0.987	
Flt Protected		0.998					0.950			0.950		
Satd. Flow (prot)	0	1706	0	0	1832	0	1752	1832	0	1752	1812	0
Flt Permitted		0.979					0.377			0.656		
Satd. Flow (perm)	0	1672	0	0	1832	0	695	1832	0	1204	1812	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	6		3	3		6	13		2	2		13
Peak Hour Factor	0.82	0.82	0.82	0.71	0.71	0.71	0.93	0.93	0.93	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	7	70	82	0	155	17	152	153	6	23	396	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	159	0	0	172	0	152	159	0	23	432	0
Turn Type	Perm	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	20.0	20.0		20.0	20.0		12.0	40.0		28.0	28.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		20.0%	66.7%		46.7%	46.7%	
Maximum Green (s)	15.1	15.1		15.0	15.0		7.2	35.2		23.2	23.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		10.2			10.2		42.2	43.2		33.5	33.5	
Actuated g/C Ratio		0.17			0.17		0.70	0.72		0.56	0.56	
v/c Ratio		0.56			0.55		0.25	0.12		0.03	0.43	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 1 AM Peak
Timing Plan: AM Peak

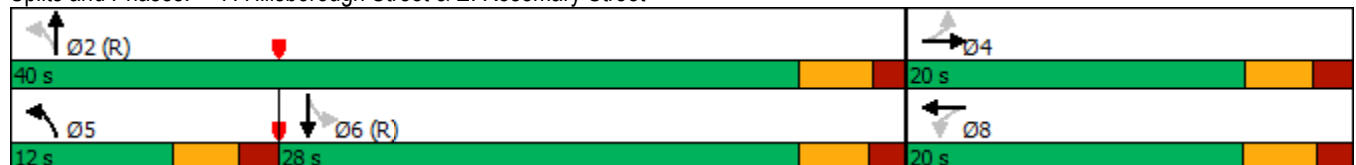


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		28.4			29.0		3.1	2.3		10.9	13.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		28.4			29.0		3.1	2.3		10.9	13.4	
LOS		C			C		A	A		B	B	
Approach Delay		28.4			29.0			2.7				13.3
Approach LOS		C			C			A				B
Queue Length 50th (ft)		63			58		8	8		4	102	
Queue Length 95th (ft)		78			77		21	22		17	207	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		418			458		614	1318		671	1010	
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		0.38			0.38		0.25	0.12		0.03	0.43	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	14 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	14.9
Intersection LOS:	B
Intersection Capacity Utilization	53.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings

2022 Build Alternative 1 AM Peak

8: Carolina Square Driveway/Church Street & W. Franklin Street

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	335	23	10	248	43	2	5	10	20	20	49
Future Volume (vph)	48	335	23	10	248	43	2	5	10	20	20	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.95	0.98			0.98	0.94		0.94	
Fr _t		0.990			0.978				0.850		0.926	
Fl _t Protected	0.950			0.950				0.985			0.989	
Satd. Flow (prot)	1430	1478	0	1431	1450	0	0	1621	1399	0	1431	0
Fl _t Permitted	0.551			0.503				0.884			0.918	
Satd. Flow (perm)	789	1478	0	721	1450	0	0	1423	1316	0	1317	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			298			285			379	
Travel Time (s)		33.9			10.2			9.7			10.3	
Confl. Peds. (#/hr)	39		57	57		39	57		29	29		57
Peak Hour Factor	0.84	0.84	0.84	0.83	0.83	0.83	0.53	0.53	0.53	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	57	399	27	12	299	52	4	9	19	22	22	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	426	0	12	351	0	0	13	19	0	97	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%	48.3%	48.3%	48.3%	
Maximum Green (s)	25.4	25.4		25.4	25.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	43.3	43.3		43.3	43.3			10.3	10.3		10.3	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 Build Alternative 1 AM Peak
 Timing Plan: AM Peak

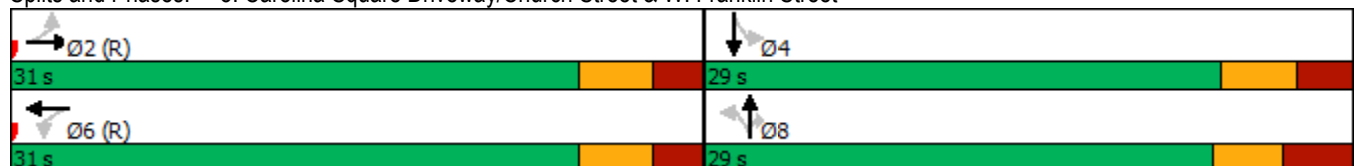


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.17	0.17			0.17
v/c Ratio	0.10	0.40		0.02	0.34			0.05	0.08			0.43
Control Delay	5.0	6.5		2.2	4.1			19.7	20.2			24.6
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	5.0	6.5		2.2	4.1			19.7	20.2			24.6
LOS	A	A		A	A			B	C			C
Approach Delay		6.3			4.0			20.0				24.6
Approach LOS		A			A			C				C
Queue Length 50th (ft)	6	57		3	80			4	6			35
Queue Length 95th (ft)	19	119		m1	28			9	12			56
Internal Link Dist (ft)		913			218			205				299
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	569	1067		520	1046			569	526			526
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	0.10	0.40		0.02	0.34			0.02	0.04			0.18

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 42 (70%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 7.7
 Intersection LOS: A
 Intersection Capacity Utilization 63.6%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 1 AM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	283	29	65	275	46	30	310	87	36	459	79
Future Volume (vph)	69	283	29	65	275	46	30	310	87	36	459	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.87	0.99		0.95		0.79	0.97	0.96		0.91	0.99	
Frt		0.986				0.850		0.967			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1372	2980	0	1410	1484	1397	1342	2592	0	1346	2595	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1191	2980	0	1344	1484	1100	1298	2592	0	1227	2595	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		457			941			981			353	
Travel Time (s)		15.6			32.1			26.8			9.6	
Confl. Peds. (#/hr)	125		49	49		125	29		98	98		29
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	86	354	36	75	316	53	32	333	94	42	540	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	390	0	75	316	53	32	427	0	42	633	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	22.0	38.0		22.0	38.0	22.0	22.0	38.0		22.0	38.0	
Total Split (%)	18.3%	31.7%		18.3%	31.7%	18.3%	18.3%	31.7%		18.3%	31.7%	
Maximum Green (s)	16.6	31.8		16.1	31.8	16.1	16.1	32.1		16.1	32.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	11.7	52.9		11.2	52.3	63.7	8.6	31.9		9.2	35.0	

Lanes, Volumes, Timings

2022 Build Alternative 1 AM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street AM Peak

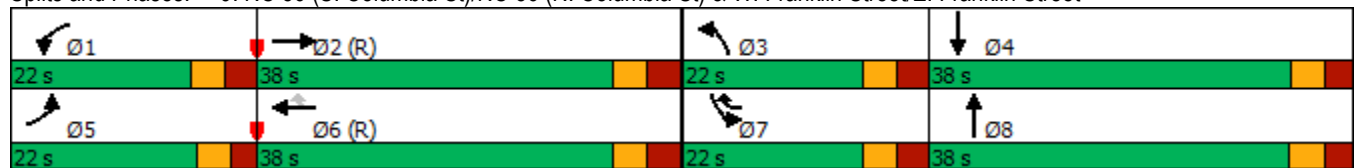


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.10	0.44		0.09	0.44	0.53	0.07	0.27		0.08	0.29	
v/c Ratio	0.65	0.30		0.57	0.49	0.09	0.33	0.62		0.41	0.84	
Control Delay	77.1	23.6		79.4	21.2	8.9	80.7	21.3		92.9	29.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.1	
Total Delay	77.1	23.6		79.4	21.2	8.9	80.7	21.3		92.9	29.7	
LOS	E	C		E	C	A	F	C		F	C	
Approach Delay		33.3			29.6			25.4			33.6	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	68	95		61	94	11	17	157		31	244	
Queue Length 95th (ft)	110	138		109	#154	19	m45	153		70	65	
Internal Link Dist (ft)		377			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	194	1314		199	646	700	190	756		190	781	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	6	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.44	0.30		0.38	0.49	0.08	0.17	0.56		0.22	0.82	

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 30.8 Intersection LOS: C
 Intersection Capacity Utilization 65.0% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2022 Build Alternative 1 AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	15	366	384	62	65	17
Future Volume (vph)	15	366	384	62	65	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.95	
Frt			0.979		0.971	
Flt Protected		0.998			0.962	
Satd. Flow (prot)	0	3223	2771	0	1434	0
Flt Permitted		0.933			0.962	
Satd. Flow (perm)	0	3010	2771	0	1387	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	26			26	44	87
Peak Hour Factor	0.91	0.91	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	5%	5%	5%	5%	4%	4%
Parking (#/hr)						0
Adj. Flow (vph)	16	402	427	69	82	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	418	496	0	104	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	17.0	17.0	22.0		25.0	
Total Split (s)	32.0	32.0	32.0		28.0	
Total Split (%)	53.3%	53.3%	53.3%		46.7%	
Maximum Green (s)	25.8	25.8	25.9		22.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		44.6	44.6		8.8	
Actuated g/C Ratio		0.74	0.74		0.15	
v/c Ratio		0.19	0.24		0.50	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

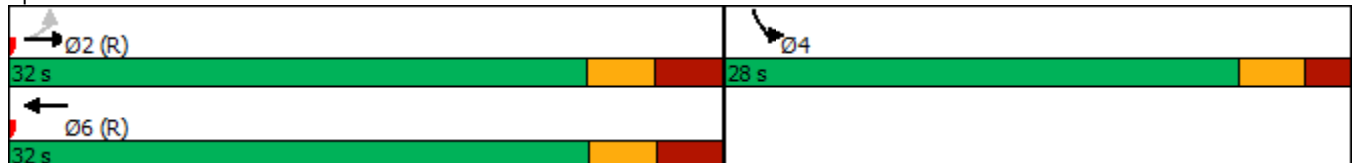


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		6.7	4.7		28.5	
Queue Delay		0.0	0.0		0.0	
Total Delay		6.7	4.7		28.5	
LOS		A	A		C	
Approach Delay		6.7	4.7		28.5	
Approach LOS		A	A		C	
Queue Length 50th (ft)		97	115		34	
Queue Length 95th (ft)		152	17		51	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		2237	2060		549	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.19	0.24		0.19	

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	53 (88%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization:	47.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: E. Franklin Street & Henderson Street



Lanes, Volumes, Timings

2022 Build Alternative 1 AM Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	312	104	42	412	89	76	183	23	67	336	18
Future Volume (vph)	19	312	104	42	412	89	76	183	23	67	336	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99	0.99			0.99		0.99	1.00	
Fr _t		0.962			0.973			0.989			0.992	
Fl _t Protected	0.950			0.950				0.987		0.950		
Satd. Flow (prot)	1539	2930	0	1578	3165	0	0	1770	0	1627	1695	0
Fl _t Permitted	0.401			0.438				0.648		0.494		
Satd. Flow (perm)	646	2930	0	720	3165	0	0	1158	0	839	1695	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	9		16	16		9	25		11	11		25
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.83	0.83	0.83	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	22	363	121	46	448	97	92	220	28	70	350	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	484	0	46	545	0	0	340	0	70	369	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4				8
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4		8
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	47.0	47.0		47.0	47.0		28.0	73.0		73.0	45.0	
Total Split (%)	39.2%	39.2%		39.2%	39.2%		23.3%	60.8%		60.8%	37.5%	
Maximum Green (s)	41.7	41.7		41.7	41.7		21.8	66.6		66.6	38.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	60.2	60.2		60.2	60.2			49.8		49.8	49.8	

Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2022 Build Alternative 1 AM Peak
 Timing Plan: AM Peak

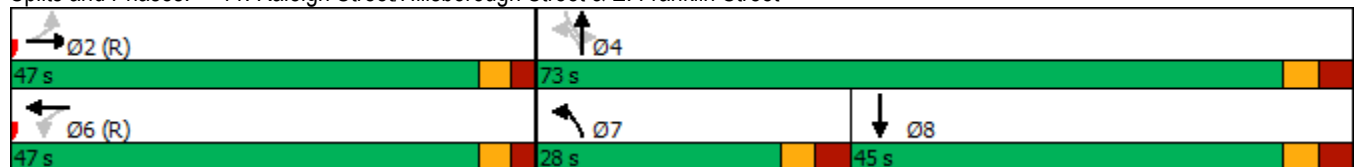


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.42		0.42	0.42	
v/c Ratio	0.07	0.33		0.13	0.34			0.71		0.20	0.52	
Control Delay	14.4	13.6		22.3	21.1			36.0		16.7	23.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	2.3	
Total Delay	14.4	13.6		22.3	21.1			36.0		16.7	25.7	
LOS	B	B		C	C			D		B	C	
Approach Delay		13.6			21.2			36.0			24.3	
Approach LOS		B			C			D			C	
Queue Length 50th (ft)	6	71		19	131			212		32	197	
Queue Length 95th (ft)	15	88		54	220			222		53	230	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	324	1469		361	1587			656		475	724	
Starvation Cap Reductn	0	0		0	0			0		0	226	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.07	0.33		0.13	0.34			0.52		0.15	0.74	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 61 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 22.6
 Intersection LOS: C
 Intersection Capacity Utilization 74.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 1 AM Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	77	0	10	6	0	5	2	432	5	0	712	66
Future Volume (vph)	77	0	10	6	0	5	2	432	5	0	712	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		1.00			0.99		1.00	1.00			1.00	
Frt		0.985			0.944			0.998			0.987	
Flt Protected		0.958			0.972		0.950					
Satd. Flow (prot)	0	1737	0	0	1701	0	1686	3364	0	1846	3452	0
Flt Permitted		0.742			0.815		0.266					
Satd. Flow (perm)	0	1345	0	0	1417	0	471	3364	0	1846	3452	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)			16	16			4		4	4		4
Peak Hour Factor	0.52	0.52	0.52	0.92	0.92	0.92	0.93	0.93	0.93	0.84	0.84	0.84
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	148	0	19	7	0	5	2	465	5	0	848	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	12	0	2	470	0	0	927	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		11.7			11.6		22.2	22.2			22.2	
Actuated g/C Ratio		0.27			0.26		0.50	0.50			0.50	

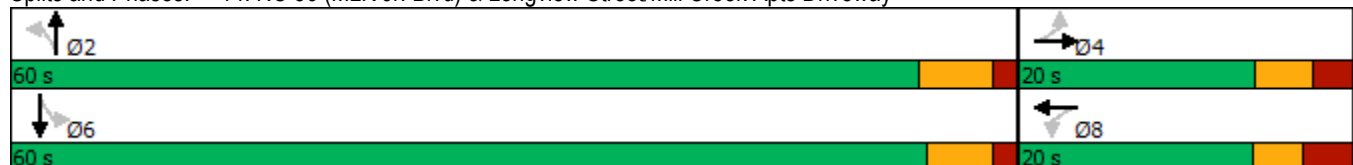


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.47			0.03		0.01	0.28				0.53
Control Delay		18.4			12.6		6.0	7.2				9.1
Queue Delay		0.0			0.0		0.0	0.0				0.0
Total Delay		18.4			12.6		6.0	7.2				9.1
LOS		B			B		A	A				A
Approach Delay		18.4			12.6			7.2				9.1
Approach LOS		B			B			A				A
Queue Length 50th (ft)		31			2		0	31				71
Queue Length 95th (ft)		44			12		3	60				116
Internal Link Dist (ft)		371			258			2028				704
Turn Bay Length (ft)							225					
Base Capacity (vph)		464			485		471	3364				3452
Starvation Cap Reductn		0			0		0	0				0
Spillback Cap Reductn		0			0		0	0				0
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		0.36			0.02		0.00	0.14				0.27

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	44.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	9.5
Intersection LOS:	A
Intersection Capacity Utilization:	42.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 Build Alternative 1 AM Peak
 Timing Plan: AM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	117	159	601	134	0	0		
Future Volume (vph)	117	159	601	134	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.94		0.90					
Frt	0.922							
Flt Protected			0.950					
Satd. Flow (prot)	1432	0	2837	1592	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1432	0	2562	1592	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		57	57					
Peak Hour Factor	0.81	0.81	0.87	0.87	0.90	0.90		
Heavy Vehicles (%)	2%	2%	9%	9%	2%	2%		
Adj. Flow (vph)	144	196	691	154	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	340	0	691	154	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	17.0			15.0			13.0	20.0
Total Split (s)	25.0			40.0			15.0	20.0
Total Split (%)	41.7%			66.7%			25%	33%
Maximum Green (s)	19.9			35.0			9.9	16.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	20.0		30.0	38.8				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.33		0.50	0.65				
v/c Ratio	0.71		0.49	0.15				
Control Delay	28.0		14.4	5.9				
Queue Delay	0.0		0.0	0.0				
Total Delay	28.0		14.4	5.9				
LOS	C		B	A				
Approach Delay	28.0			12.9				
Approach LOS	C			B				
Queue Length 50th (ft)	105		190	30				
Queue Length 95th (ft)	163		186	m83				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	477		1374	1028				
Starvation Cap Reductn	0		0	0				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.71		0.50	0.15				

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 23 (38%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 17.2
 Intersection LOS: B
 Intersection Capacity Utilization 47.5%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2022 Build Alternative 1 AM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	91	0	0	95	20	98	386	43	66	0	537
Future Volume (vph)	16	91	0	0	95	20	98	386	43	66	0	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.95				0.99		0.79	0.94		0.75		0.77
Fr _t					0.977			0.985				0.850
Fl _t Protected	0.950						0.950	0.999		0.950		
Satd. Flow (prot)	1532	1668	0	0	1565	0	1248	2454	0	1413	0	2302
Fl _t Permitted	0.522						0.950	0.999		0.950		
Satd. Flow (perm)	803	1668	0	0	1565	0	982	2443	0	1060	0	1776
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	39		102	102		39	71		107	107		71
Peak Hour Factor	0.79	0.79	0.79	0.83	0.83	0.83	0.86	0.86	0.86	0.89	0.89	0.89
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	20	115	0	0	114	24	114	449	50	74	0	603
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	20	115	0	0	138	0	103	510	0	74	0	603
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	34.0	34.0			34.0		22.0	22.0		36.0		36.0
Total Split (%)	28.3%	28.3%			28.3%		18.3%	18.3%		30.0%		30.0%
Maximum Green (s)	27.8	27.8			27.8		16.1	16.1		30.4		30.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	16.4	16.4			16.4		46.8	46.8		41.8		41.8

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings

2022 Build Alternative 1 AM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: AM Peak

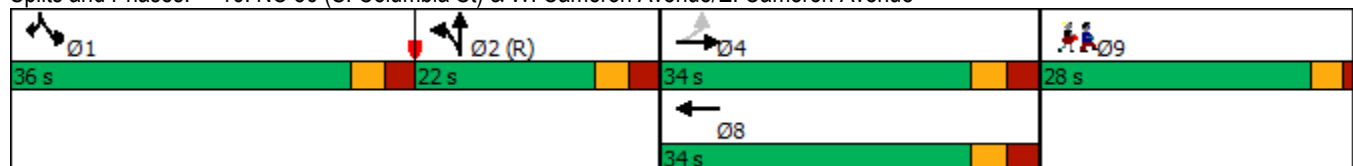


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14			0.14		0.39	0.39		0.35		0.35
v/c Ratio	0.18	0.50			0.64		0.21	0.53		0.15		0.75
Control Delay	36.2	41.1			62.3		28.0	32.1		7.2		17.1
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	36.2	41.1			62.3		28.0	32.1		7.2		17.1
LOS	D	D			E		C	C		A		B
Approach Delay		40.4			62.3			31.4				16.0
Approach LOS		D			E			C				B
Queue Length 50th (ft)	11	82			103		57	164		5		77
Queue Length 95th (ft)	m15	m109			148		110	235		m16		299
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	194	403			378		486	956		492		801
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	0.10	0.29			0.37		0.21	0.53		0.15		0.75

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 39 (33%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 28.2
 Intersection LOS: C
 Intersection Capacity Utilization 67.7%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 1 AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	23	44	32	28	142	219	24	45	17	299	148	48
Future Volume (vph)	23	44	32	28	142	219	24	45	17	299	148	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.98	0.98		0.91	0.96		0.89	0.95	
Frt		0.956			0.909			0.958			0.963	
Flt Protected		0.989		0.950			0.950			0.950		
Satd. Flow (prot)	0	1493	0	1569	1470	0	1492	1446	0	1569	1509	0
Flt Permitted		0.834		0.572			0.628			0.457		
Satd. Flow (perm)	0	1257	0	930	1470	0	896	1446	0	674	1509	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	3		6	6		3	31		25	25		31
Peak Hour Factor	0.71	0.71	0.71	0.84	0.84	0.84	0.79	0.79	0.79	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	10%	10%	10%	3%	3%	3%
Adj. Flow (vph)	32	62	45	33	169	261	30	57	22	318	157	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	33	430	0	30	79	0	318	208	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		20.1		24.1	24.1		15.4	10.1		25.4	21.5	
Actuated g/C Ratio		0.33		0.40	0.40		0.25	0.17		0.42	0.35	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 1 AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.33		0.07	0.74		0.10	0.33		0.64	0.39	
Control Delay		22.2		12.5	25.1		14.8	32.1		22.0	22.1	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		22.2		12.5	25.1		14.8	32.1		22.0	22.1	
LOS		C		B	C		B	C		C	C	
Approach Delay		22.2			24.2			27.3			22.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		35		8	137		6	28		77	47	
Queue Length 95th (ft)		79		23	236		23	69		#222	166	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		930		570	1378		521	807		557	842	
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		0.15		0.06	0.31		0.06	0.10		0.57	0.25	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 60.8
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 23.3
 Intersection LOS: C
 Intersection Capacity Utilization 61.7%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road



Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 Build Alternative 1 Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	6	322	29	43	351	24	23	42	56	14	33	10
Future Volume (vph)	6	322	29	43	351	24	23	42	56	14	33	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.92			0.95	
Frt		0.989			0.992			0.938			0.976	
Flt Protected		0.999			0.995			0.991			0.988	
Satd. Flow (prot)	0	1709	0	0	1748	0	0	1480	0	0	1562	0
Flt Permitted		0.994			0.935			0.921			0.918	
Satd. Flow (perm)	0	1700	0	0	1636	0	0	1336	0	0	1426	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	22		24	24		22	75		39	39		75
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	366	33	46	377	26	25	46	61	22	52	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	406	0	0	449	0	0	132	0	0	90	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	43.0	43.0		43.0	43.0		22.0	22.0		22.0	22.0	
Total Split (%)	66.2%	66.2%		66.2%	66.2%		33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	38.5	38.5		38.4	38.4		17.1	17.1		17.1	17.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		46.9			46.9			11.5			11.5	
Actuated g/C Ratio		0.72			0.72			0.18			0.18	
v/c Ratio		0.33			0.38			0.56			0.36	
Control Delay		6.1			2.6			31.9			26.2	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 Build Alternative 1 Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.1			2.6			31.9			26.2	
LOS		A			A			C			C	
Approach Delay		6.1			2.6			31.9			26.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		57			22			48			32	
Queue Length 95th (ft)		123			m42			65			43	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1225			1179			349			372	
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		0.33			0.38			0.38			0.24	

Intersection Summary

Area Type: CBD
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 23 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 9.5
 Intersection LOS: A
 Intersection Capacity Utilization 69.7%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Church Street & W. Rosemary Street

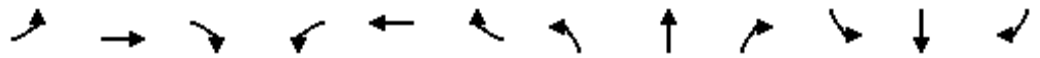


Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	199	48	57	213	74	44	315	121	95	356	178
Future Volume (vph)	155	199	48	57	213	74	44	315	121	95	356	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	75		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.97	0.99		0.96	0.98		0.85	0.86		0.79		0.66
Frt		0.971			0.961			0.958				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1596	0	1585	1566	0	1355	2316	0	1485	2673	1285
Flt Permitted	0.231			0.587			0.467			0.403		
Satd. Flow (perm)	336	1596	0	937	1566	0	569	2316	0	499	2673	850
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			266			353			476	
Travel Time (s)		25.8			9.1			9.6			13.0	
Confl. Peds. (#/hr)	53		41	41		53	80		129	129		80
Peak Hour Factor	0.88	0.88	0.88	0.85	0.85	0.85	0.98	0.98	0.98	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	5%	5%	5%
Adj. Flow (vph)	176	226	55	67	251	87	45	321	123	110	414	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	281	0	67	338	0	45	444	0	110	414	207
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	43.0	63.0		20.0	20.0		15.0	52.0		15.0	52.0	43.0
Total Split (%)	33.1%	48.5%		15.4%	15.4%		11.5%	40.0%		11.5%	40.0%	33.1%
Maximum Green (s)	37.2	57.0		14.0	14.0		9.2	46.2		9.9	46.2	37.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		0.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	58.0	58.0		33.4	33.4		54.7	48.3		58.8	51.5	71.1

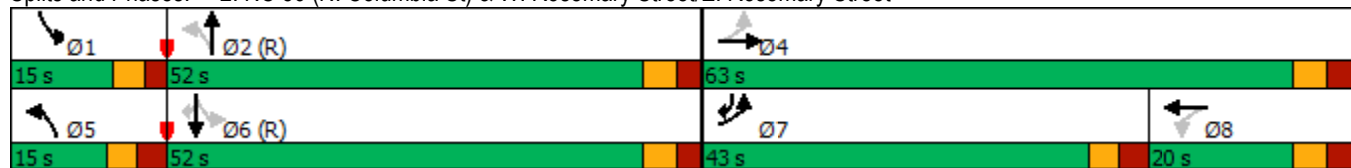


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.45	0.45		0.26	0.26		0.42	0.37		0.45	0.40	0.55
v/c Ratio	0.56	0.39		0.28	0.84		0.16	0.52		0.38	0.39	0.39
Control Delay	30.7	27.3		42.9	63.4		16.5	20.6		23.3	30.3	17.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.7		0.0	0.0	0.0
Total Delay	30.7	27.3		42.9	63.4		16.5	21.2		23.3	30.3	17.4
LOS	C	C		D	E		B	C		C	C	B
Approach Delay		28.6			60.0			20.8			25.6	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)	92	182		41	250		10	54		51	134	86
Queue Length 95th (ft)	121	229		89	#463		m27	121		84	174	112
Internal Link Dist (ft)		677			186			273			396	
Turn Bay Length (ft)	100			75			75			150		400
Base Capacity (vph)	468	712		240	402		303	860		304	1058	712
Starvation Cap Reductn	0	0		0	0		0	159		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	3	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.38	0.39		0.28	0.84		0.15	0.63		0.36	0.39	0.29

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 55 (42%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 31.8 Intersection LOS: C
 Intersection Capacity Utilization 69.0% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 1 Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	190	129	15	203	31	54	30	11	9	30	13
Future Volume (vph)	15	190	129	15	203	31	54	30	11	9	30	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				3%
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.97			0.99			0.85			0.92	
Frt		0.939			0.983			0.984			0.967	
Flt Protected	0.950				0.997			0.972			0.991	
Satd. Flow (prot)	1593	1527	0	0	1626	0	0	1579	0	0	1474	0
Flt Permitted	0.597				0.976			0.790			0.933	
Satd. Flow (perm)	963	1527	0	0	1589	0	0	1105	0	0	1364	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		500			1195			366			450	
Travel Time (s)		17.0			40.7			12.5			15.3	
Confl. Peds. (#/hr)	21		19	19		21	106		47	47		106
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.68	0.68	0.68	0.85	0.85	0.85
Adj. Flow (vph)	16	198	134	16	214	33	79	44	16	11	35	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	332	0	0	263	0	0	139	0	0	61	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	38.0	38.0		38.0	38.0		27.0	27.0		27.0	27.0	
Total Split (%)	58.5%	58.5%		58.5%	58.5%		41.5%	41.5%		41.5%	41.5%	
Maximum Green (s)	33.1	33.1		33.1	33.1		22.2	22.2		22.2	22.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.1			0.1			0.2			0.2	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	46.0	46.0			46.0			12.5			12.5	
Actuated g/C Ratio	0.71	0.71			0.71			0.19			0.19	
v/c Ratio	0.02	0.31			0.23			0.65			0.23	

Lanes, Volumes, Timings
 6: Henderson Street & E. Rosemary Street

2022 Build Alternative 1 Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.3	5.3			5.9			35.1			22.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	5.3	5.3			5.9			35.1			22.5	
LOS	A	A			A			D			C	
Approach Delay		5.3			5.9			35.1			22.5	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	2	47			56			61			21	
Queue Length 95th (ft)	m7	100			105			65			42	
Internal Link Dist (ft)		420			1115			286			370	
Turn Bay Length (ft)	85											
Base Capacity (vph)	681	1081			1125			374			461	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.02	0.31			0.23			0.37			0.13	

Intersection Summary

Area Type: CBD
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 63 (97%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 49.4%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 1 Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	23	90	85	3	51	9	161	179	9	16	218	25
Future Volume (vph)	23	90	85	3	51	9	161	179	9	16	218	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98		0.93	1.00		0.99	0.98	
Frt		0.942			0.980			0.993			0.985	
Flt Protected		0.994			0.998		0.950			0.950		
Satd. Flow (prot)	0	1674	0	0	1791	0	1770	1847	0	1719	1750	0
Flt Permitted		0.956			0.982		0.489			0.625		
Satd. Flow (perm)	0	1594	0	0	1758	0	846	1847	0	1117	1750	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	35		35	35		35	50		5	5		50
Peak Hour Factor	0.93	0.93	0.93	0.78	0.78	0.78	0.88	0.88	0.88	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	25	97	91	4	65	12	183	203	10	18	240	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	81	0	183	213	0	18	267	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	24.0	24.0		24.0	24.0		13.0	41.0		28.0	28.0	
Total Split (%)	36.9%	36.9%		36.9%	36.9%		20.0%	63.1%		43.1%	43.1%	
Maximum Green (s)	19.1	19.1		19.0	19.0		8.2	36.2		23.2	23.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		12.8			12.8		42.2	42.2		29.7	29.7	
Actuated g/C Ratio		0.20			0.20		0.65	0.65		0.46	0.46	
v/c Ratio		0.68			0.23		0.28	0.18		0.04	0.33	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 1 Noon Peak
Timing Plan: Noon Peak

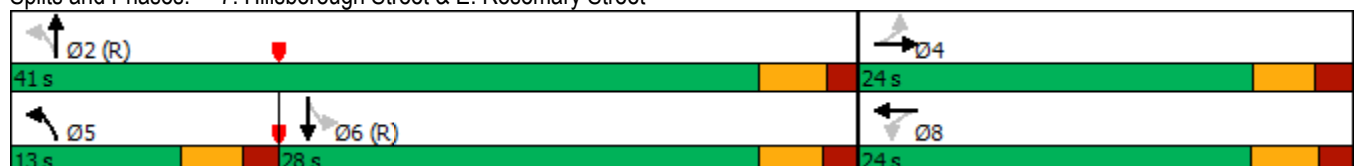


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		32.0			21.9		6.3	5.7		12.8	14.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		32.0			21.9		6.3	5.7		12.8	14.4	
LOS		C			C		A	A		B	B	
Approach Delay		32.0			21.9			6.0			14.3	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		75			27		49	57		4	63	
Queue Length 95th (ft)		102			46		70	82		17	138	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		465			513		665	1198		510	799	
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		0.46			0.16		0.28	0.18		0.04	0.33	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	19 (29%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	15.4
Intersection LOS:	B
Intersection Capacity Utilization	54.0%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

8: Carolina Square Driveway/Church Street & W. Franklin Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	359	26	32	331	68	10	10	22	23	23	56
Future Volume (vph)	51	359	26	32	331	68	10	10	22	23	23	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.84	0.97		0.78	0.93			0.86	0.87		0.78	
Fr _t		0.990			0.974				0.850		0.925	
Fl _t Protected	0.950			0.950				0.976			0.989	
Satd. Flow (prot)	1443	1452	0	1472	1410	0	0	1669	1454	0	1210	0
Fl _t Permitted	0.481			0.478				0.831			0.924	
Satd. Flow (perm)	616	1452	0	579	1410	0	0	1224	1262	0	1103	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			298			285			379	
Travel Time (s)		33.9			10.2			9.7			10.3	
Confl. Peds. (#/hr)	150		248	248		150	225		77	77		225
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.81	0.81	0.81	0.71	0.71	0.71
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	59	413	30	35	364	75	12	12	27	32	32	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	443	0	35	439	0	0	24	27	0	143	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	36.0	36.0		36.0	36.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	55.4%	55.4%		55.4%	55.4%		44.6%	44.6%	44.6%	44.6%	44.6%	
Maximum Green (s)	30.4	30.4		30.4	30.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	44.8	44.8		44.8	44.8			13.9	13.9		13.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.69	0.69		0.69	0.69			0.21	0.21		0.21	
v/c Ratio	0.14	0.44		0.09	0.45			0.09	0.10		0.61	
Control Delay	7.5	9.0		8.0	9.9			18.7	18.9		32.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	7.5	9.0		8.0	9.9			18.7	18.9		32.6	
LOS	A	A		A	A			B	B		C	
Approach Delay		8.9			9.8			18.8			32.6	
Approach LOS		A			A			B			C	
Queue Length 50th (ft)	8	79		3	50			8	9		62	
Queue Length 95th (ft)	29	177		m27	317			19	21		64	
Internal Link Dist (ft)		913			218			205			299	
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	424	1000		398	970			451	465		407	
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	0.14	0.44		0.09	0.45			0.05	0.06		0.35	

Intersection Summary

Area Type: CBD
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 2 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 12.6
 Intersection LOS: B
 Intersection Capacity Utilization 70.7%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	298	46	82	308	87	61	298	90	50	316	89
Future Volume (vph)	103	298	46	82	308	87	61	298	90	50	316	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.80	0.96		0.82		0.67	0.82	0.92		0.80	0.92	
Frt		0.980				0.850		0.965			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1372	2853	0	1437	1512	1423	1342	2463	0	1346	2397	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1096	2853	0	1178	1512	947	1103	2463	0	1079	2397	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		457			941			981			353	
Travel Time (s)		15.6			32.1			26.8			9.6	
Confl. Peds. (#/hr)	251		248	248		251	117		321	321		117
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	129	373	58	94	354	100	66	320	97	59	372	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	431	0	94	354	100	66	417	0	59	477	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	25.0	32.0		25.0	32.0	25.0	25.0	48.0		25.0	48.0	
Total Split (%)	19.2%	24.6%		19.2%	24.6%	19.2%	19.2%	36.9%		19.2%	36.9%	
Maximum Green (s)	19.6	25.8		19.1	25.8	19.1	19.1	42.1		19.1	42.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	16.0	54.6		13.0	51.6	64.4	11.2	31.8		10.6	33.8	

Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.12	0.42		0.10	0.40	0.50	0.09	0.24		0.08	0.26	
v/c Ratio	0.77	0.36		0.66	0.59	0.20	0.57	0.69		0.54	0.77	
Control Delay	76.0	32.2		84.1	38.9	13.5	100.1	28.8		90.6	33.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.1	
Total Delay	76.0	32.2		84.1	38.9	13.5	100.1	28.8		90.6	34.0	
LOS	E	C		F	D	B	F	C		F	C	
Approach Delay		42.3			42.0			38.6			40.2	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	102	127		72	240	30	57	70		52	95	
Queue Length 95th (ft)	138	212		137	#478	68	106	66		94	92	
Internal Link Dist (ft)		377			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	217	1198		221	600	615	206	814		207	792	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	13	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.59	0.36		0.43	0.59	0.16	0.32	0.51		0.29	0.61	

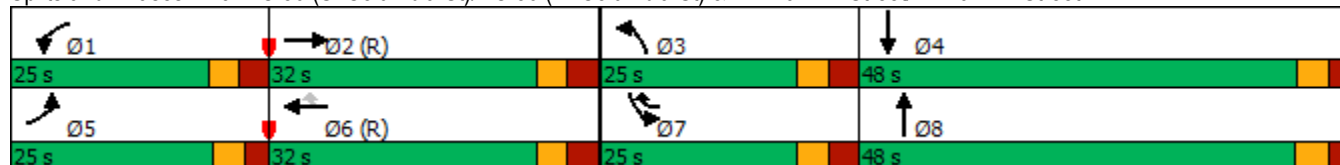
Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 40.8 Intersection LOS: D
 Intersection Capacity Utilization 65.5% 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: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2022 Build Alternative 1 Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	47	377	415	53	95	80
Future Volume (vph)	47	377	415	53	95	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		0.99	0.97		0.79	
Frt			0.983		0.938	
Flt Protected		0.995			0.974	
Satd. Flow (prot)	0	3213	2749	0	1244	0
Flt Permitted		0.862			0.974	
Satd. Flow (perm)	0	2747	2749	0	1154	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	119			119	130	370
Peak Hour Factor	0.95	0.95	0.92	0.92	0.87	0.87
Heavy Vehicles (%)	5%	5%	4%	4%	2%	2%
Parking (#/hr)						0
Adj. Flow (vph)	49	397	451	58	109	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	446	509	0	201	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	17.0	17.0	22.0		25.0	
Total Split (s)	32.0	32.0	32.0		33.0	
Total Split (%)	49.2%	49.2%	49.2%		50.8%	
Maximum Green (s)	25.8	25.8	25.9		27.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		40.6	40.6		14.4	
Actuated g/C Ratio		0.62	0.62		0.22	
v/c Ratio		0.26	0.30		0.73	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2022 Build Alternative 1 Noon Peak
 Timing Plan: Noon Peak

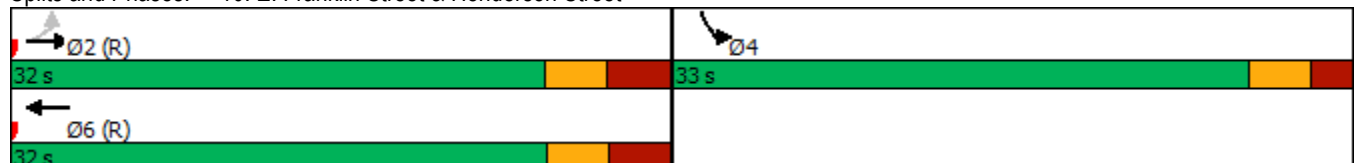


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		6.5	7.5		36.1	
Queue Delay		0.0	0.0		0.0	
Total Delay		6.5	7.5		36.1	
LOS		A	A		D	
Approach Delay		6.5	7.5		36.1	
Approach LOS		A	A		D	
Queue Length 50th (ft)		15	36		89	
Queue Length 95th (ft)		152	131		120	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1714	1715		535	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.26	0.30		0.38	

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	4 (6%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	12.1
Intersection LOS:	B
Intersection Capacity Utilization	56.8%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 10: E. Franklin Street & Henderson Street

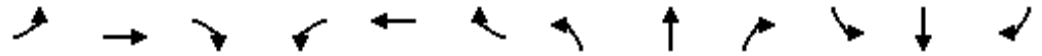


Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	330	148	41	370	144	83	160	23	69	194	23
Future Volume (vph)	55	330	148	41	370	144	83	160	23	69	194	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.98		0.99	0.98			0.97		0.97	0.98	
Fr _t		0.954			0.958			0.989			0.984	
Fl _t Protected	0.950			0.950				0.985		0.950		
Satd. Flow (prot)	1539	2893	0	1593	3096	0	0	1795	0	1612	1638	0
Fl _t Permitted	0.413			0.434				0.663		0.494		
Satd. Flow (perm)	653	2893	0	718	3096	0	0	1179	0	813	1638	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	50		25	25		50	93		33	33		93
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.94	0.94	0.94	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	60	363	163	45	407	158	88	170	24	77	216	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	526	0	45	565	0	0	282	0	77	242	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	60.0	60.0		60.0	60.0		31.0	70.0		70.0	39.0	
Total Split (%)	46.2%	46.2%		46.2%	46.2%		23.8%	53.8%		53.8%	30.0%	
Maximum Green (s)	54.7	54.7		54.7	54.7		24.8	63.6		63.6	32.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	80.0	80.0		80.0	80.0			40.0		40.0	40.0	

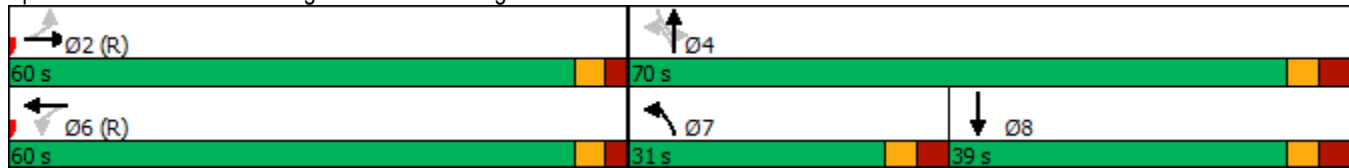


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.62	0.62		0.62	0.62			0.31		0.31	0.31	
v/c Ratio	0.15	0.30		0.10	0.30			0.78		0.31	0.48	
Control Delay	13.2	11.1		14.3	13.8			54.7		33.7	38.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	4.4	
Total Delay	13.2	11.1		14.3	13.8			54.7		33.7	42.4	
LOS	B	B		B	B			D		C	D	
Approach Delay		11.4			13.8			54.7			40.3	
Approach LOS		B			B			D			D	
Queue Length 50th (ft)	12	63		15	111			216		47	161	
Queue Length 95th (ft)	51	154		43	189			278		78	205	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	402	1780		442	1905			589		406	524	
Starvation Cap Reductn	0	0		0	0			0		0	207	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.15	0.30		0.10	0.30			0.48		0.19	0.76	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	57 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	24.1
Intersection LOS:	C
Intersection Capacity Utilization	76.7%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: Noon Peak



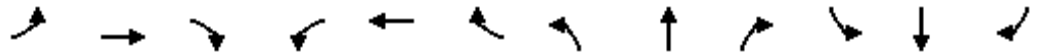
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	37	0	19	4	0	2	7	505	8	1	549	35
Future Volume (vph)	37	0	19	4	0	2	7	505	8	1	549	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		0.99			0.98		0.99	1.00		0.98	1.00	
Frt		0.954			0.955			0.998			0.991	
Flt Protected		0.968			0.968		0.950			0.950		
Satd. Flow (prot)	0	1720	0	0	1706	0	1670	3330	0	1753	3468	0
Flt Permitted		0.794			0.754		0.408			0.435		
Satd. Flow (perm)	0	1410	0	0	1314	0	712	3330	0	789	3468	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)	1		19	19		1	7		15	15		7
Peak Hour Factor	0.76	0.76	0.76	0.50	0.50	0.50	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	7%	7%	7%	5%	5%	5%
Adj. Flow (vph)	49	0	25	8	0	4	8	567	9	1	603	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	12	0	8	576	0	1	641	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		8.7			8.6		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.25			0.24		0.69	0.69		0.69	0.69	

Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.21			0.04		0.02	0.25		0.00	0.27	
Control Delay		12.7			10.8		5.4	5.1		5.0	5.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		12.7			10.8		5.4	5.1		5.0	5.1	
LOS		B			B		A	A		A	A	
Approach Delay		12.7			10.8			5.1			5.1	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		14			2		1	31		0	35	
Queue Length 95th (ft)		27			5		5	58		1	65	
Internal Link Dist (ft)		371			258			2028			704	
Turn Bay Length (ft)							225			250		
Base Capacity (vph)		601			556		712	3330		789	3468	
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		0.12			0.02		0.01	0.17		0.00	0.18	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	35.4
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.27
Intersection Signal Delay:	5.6
Intersection LOS:	A
Intersection Capacity Utilization:	37.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 Build Alternative 1 Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	78	152	447	216	0	0		
Future Volume (vph)	78	152	447	216	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.78		0.65					
Frt	0.911							
Flt Protected			0.950					
Satd. Flow (prot)	1170	0	2837	1592	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1170	0	1838	1592	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		129	129					
Peak Hour Factor	0.71	0.71	0.93	0.93	0.90	0.90		
Heavy Vehicles (%)	2%	2%	9%	9%	2%	2%		
Adj. Flow (vph)	110	214	481	232	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	324	0	481	232	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	20.0			20.0			20.0	20.0
Total Split (s)	77.0			110.0			33.0	20.0
Total Split (%)	59.2%			84.6%			25%	15%
Maximum Green (s)	71.9			105.0			27.9	16.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	72.0		48.0	105.5				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.55		0.37	0.81				
v/c Ratio	0.50		0.46	0.18				
Control Delay	21.3		26.1	3.2				
Queue Delay	0.0		1.1	0.5				
Total Delay	21.3		27.3	3.8				
LOS	C		C	A				
Approach Delay	21.3			19.6				
Approach LOS	C			B				
Queue Length 50th (ft)	162		160	30				
Queue Length 95th (ft)	174		241	m65				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	648		1036	1291				
Starvation Cap Reductn	0		325	718				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.50		0.68	0.40				

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 20.1
 Intersection LOS: C
 Intersection Capacity Utilization 41.9%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	51	0	0	90	37	169	380	27	43	0	403
Future Volume (vph)	20	51	0	0	90	37	169	380	27	43	0	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.77				0.91		0.60	0.94		0.61		0.43
Fr _t				0.961			0.991					0.850
Fl _t Protected	0.950						0.950	0.998		0.950		
Satd. Flow (prot)	1488	1620	0	0	1403	0	1259	2493	0	1439	0	2345
Fl _t Permitted	0.489						0.950	0.998		0.950		
Satd. Flow (perm)	590	1620	0	0	1403	0	757	2453	0	875	0	1014
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	207		358	358		207	244		349	349		244
Peak Hour Factor	0.93	0.93	0.93	0.84	0.84	0.84	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	9%	9%	9%	8%	8%	8%
Adj. Flow (vph)	22	55	0	0	107	44	197	442	31	50	0	469
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	22	55	0	0	151	0	177	493	0	50	0	469
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	40.0	40.0			40.0		23.0	23.0		39.0		39.0
Total Split (%)	30.8%	30.8%			30.8%		17.7%	17.7%		30.0%		30.0%
Maximum Green (s)	33.8	33.8			33.8		17.1	17.1		33.4		33.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
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?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	19.6	19.6			19.6		64.3	64.3		31.0		31.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	22%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: Noon Peak

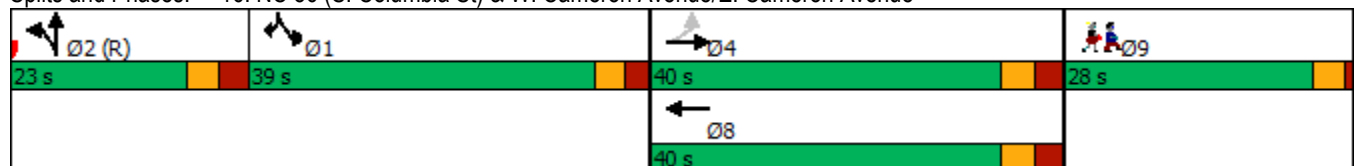


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15			0.15		0.49	0.49		0.24		0.24
v/c Ratio	0.25	0.23			0.71		0.28	0.40		0.15		0.84
Control Delay	38.0	33.6			70.0		23.2	23.6		19.0		36.7
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	38.0	33.6			70.0		23.2	23.6		19.0		36.7
LOS	D	C			E		C	C		B		D
Approach Delay		34.8			70.0			23.5			35.0	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)	17	42			123		96	145		19		197
Queue Length 95th (ft)	m35	84			171		168	207		m35		283
Internal Link Dist (ft)		193			909			746			901	
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	158	436			377		623	1233		376		613
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	0.14	0.13			0.40		0.28	0.40		0.13		0.77

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 67 (52%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 33.3
 Intersection LOS: C
 Intersection Capacity Utilization 68.8%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

2022 Build Alternative 1 Noon Peak

17: Raleigh Street & E. Cameron Avenue/Country Club Road

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	31	64	33	21	86	166	33	76	28	232	111	44
Future Volume (vph)	31	64	33	21	86	166	33	76	28	232	111	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.91		0.90	0.87		0.67	0.95		0.87	0.85	
Frt		0.965			0.901			0.960			0.958	
Flt Protected		0.988		0.950			0.950			0.950		
Satd. Flow (prot)	0	1514	0	1569	1293	0	1505	1450	0	1554	1329	0
Flt Permitted		0.844		0.537			0.654			0.453		
Satd. Flow (perm)	0	1254	0	796	1293	0	697	1450	0	646	1329	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	38		43	43		38	103		33	33		103
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.93	0.93	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	4%	4%	4%
Adj. Flow (vph)	36	74	38	23	95	182	35	82	30	244	117	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	0	23	277	0	35	112	0	244	163	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		16.1		19.8	19.8		16.0	10.5		24.7	21.0	
Actuated g/C Ratio		0.29		0.35	0.35		0.29	0.19		0.44	0.38	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 1 Noon Peak
 Timing Plan: Noon Peak

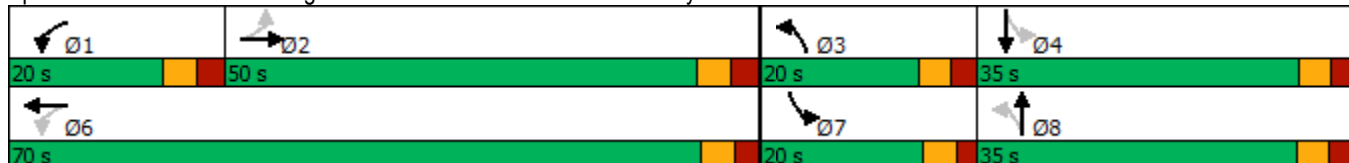


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.41		0.06	0.60		0.11	0.41		0.49	0.33	
Control Delay		25.4		13.7	22.6		12.5	30.0		14.7	19.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		25.4		13.7	22.6		12.5	30.0		14.7	19.0	
LOS		C		B	C		B	C		B	B	
Approach Delay		25.4			22.0			25.8			16.5	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		39		5	82		5	34		42	27	
Queue Length 95th (ft)		110		19	167		25	95		126	118	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		1000		548	1234		553	868		593	795	
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		0.15		0.04	0.22		0.06	0.13		0.41	0.21	

Intersection Summary

Area Type:	CBD
Cycle Length:	125
Actuated Cycle Length:	55.8
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	20.8
Intersection LOS:	C
Intersection Capacity Utilization:	68.1%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road



Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 Build Alternative 1 PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	24	421	65	58	438	37	47	79	63	24	75	26
Future Volume (vph)	24	421	65	58	438	37	47	79	63	24	75	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.98			0.93			0.95	
Frt		0.983			0.991			0.955			0.972	
Flt Protected		0.998			0.995			0.988			0.990	
Satd. Flow (prot)	0	1710	0	0	1753	0	0	1516	0	0	1556	0
Flt Permitted		0.967			0.906			0.903			0.925	
Satd. Flow (perm)	0	1654	0	0	1589	0	0	1345	0	0	1435	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	40		37	37		40	62		43	43		62
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	25	443	68	60	452	38	52	87	69	26	81	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	536	0	0	550	0	0	208	0	0	135	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		4			
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	25.0		25.0	25.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	40.5	40.5		40.4	40.4		20.1	20.1		20.1	20.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		44.6			44.6			15.4			15.4	
Actuated g/C Ratio		0.64			0.64			0.22			0.22	
v/c Ratio		0.51			0.54			0.71			0.43	
Control Delay		9.9			5.8			36.9			26.6	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 Build Alternative 1 PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		9.9			5.8			36.9			26.6	
LOS		A			A			D			C	
Approach Delay		9.9			5.8			36.9			26.6	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)		110			76			78			50	
Queue Length 95th (ft)		217			m80			m92			90	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1053			1012			384			410	
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		0.51			0.54			0.54			0.33	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 25 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 13.9
 Intersection LOS: B
 Intersection Capacity Utilization 79.3%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Church Street & W. Rosemary Street

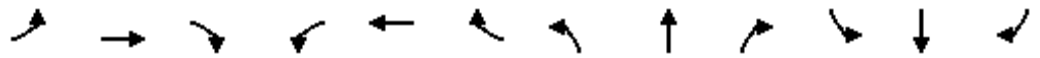


Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	268	49	85	225	101	51	591	86	85	510	274
Future Volume (vph)	230	268	49	85	225	101	51	591	86	85	510	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	75		0	75		0	150		400
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor		0.99		0.96	0.97		0.94	0.95				0.73
Frt		0.977			0.954			0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1612	0	1585	1547	0	1420	2758	0	1514	2725	1310
Flt Permitted	0.126			0.546			0.357			0.240		
Satd. Flow (perm)	189	1612	0	877	1547	0	499	2758	0	383	2725	952
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			251			353			476	
Travel Time (s)		25.8			8.6			9.6			13.0	
Confl. Peds. (#/hr)	49		36	36		49	59		83	83		59
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.83	0.83	0.83	0.82	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	261	305	56	90	239	107	61	712	104	104	622	334
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	361	0	90	346	0	61	816	0	104	622	334
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	24.0	56.0		32.0	32.0		20.0	64.0		20.0	64.0	24.0
Total Split (%)	17.1%	40.0%		22.9%	22.9%		14.3%	45.7%		14.3%	45.7%	17.1%
Maximum Green (s)	18.2	50.0		26.0	26.0		14.2	58.2		14.9	58.2	18.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	51.0	51.0		27.0	27.0		74.0	65.4		75.5	68.4	87.4

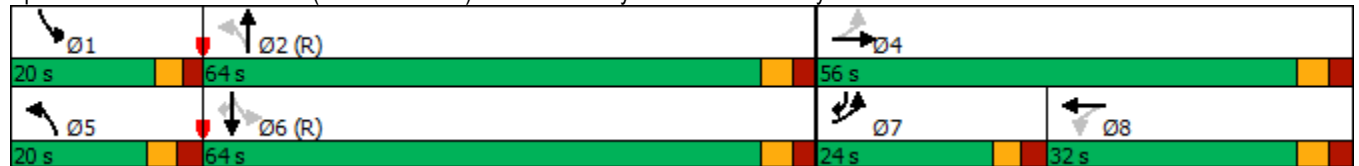


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.36	0.36		0.19	0.19		0.53	0.47		0.54	0.49	0.62
v/c Ratio	1.11	0.61		0.53	1.16		0.19	0.63		0.38	0.47	0.52
Control Delay	124.3	44.1		62.2	150.1		5.6	8.0		18.5	25.9	17.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	3.2		0.0	0.0	0.0
Total Delay	124.3	44.1		62.2	150.1		5.6	11.2		18.5	26.0	17.1
LOS	F	D		E	F		A	B		B	C	B
Approach Delay		77.8			132.0			10.8			22.5	
Approach LOS		E			F			B			C	
Queue Length 50th (ft)	~230	291		73	~378		7	50		43	199	137
Queue Length 95th (ft)	#391	402		137	#568		m7	m52		66	230	181
Internal Link Dist (ft)		677			171			273			396	
Turn Bay Length (ft)	100			75			75			150		400
Base Capacity (vph)	236	587		169	298		381	1289		337	1330	642
Starvation Cap Reductn	0	0		0	0		0	360		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	49	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.11	0.61		0.53	1.16		0.16	0.88		0.31	0.49	0.52

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 62 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 46.5 Intersection LOS: D
 Intersection Capacity Utilization 80.1% ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 1 PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	269	151	12	194	57	62	24	5	23	41	10
Future Volume (vph)	43	269	151	12	194	57	62	24	5	23	41	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.95			0.98			0.88			0.94	
Frt		0.946			0.971			0.993			0.981	
Flt Protected	0.950				0.998			0.967			0.985	
Satd. Flow (prot)	1593	1514	0	0	1602	0	0	1597	0	0	1549	0
Flt Permitted	0.624				0.978			0.794			0.893	
Satd. Flow (perm)	1023	1514	0	0	1568	0	0	1157	0	0	1355	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		496			1195			366			450	
Travel Time (s)		16.9			40.7			12.5			15.3	
Confl. Peds. (#/hr)	14		34	34		14	73		51	51		73
Peak Hour Factor	0.90	0.90	0.90	0.93	0.93	0.93	0.67	0.67	0.67	0.79	0.79	0.79
Adj. Flow (vph)	48	299	168	13	209	61	93	36	7	29	52	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	467	0	0	283	0	0	136	0	0	94	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Total Split (%)	45.7%	45.7%		45.7%	45.7%		54.3%	54.3%		54.3%	54.3%	
Maximum Green (s)	27.1	27.1		27.1	27.1		33.2	33.2		33.2	33.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.0			0.1			0.2			0.2	
Total Lost Time (s)	5.0	4.9			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	50.3	50.3			50.3			13.3			13.3	
Actuated g/C Ratio	0.72	0.72			0.72			0.19			0.19	
v/c Ratio	0.07	0.43			0.25			0.62			0.37	

Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 1 PM Peak
Timing Plan: PM Peak

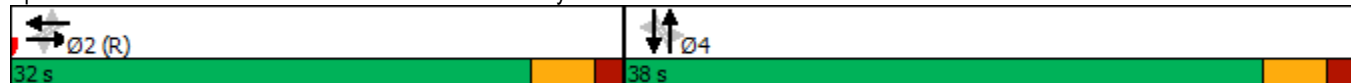


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.9	7.0			5.1			28.7			27.1	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	5.9	7.0			5.1			28.7			27.1	
LOS	A	A			A			C			C	
Approach Delay		6.9			5.1			28.7			27.1	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	6	72			54			52			36	
Queue Length 95th (ft)	m22	209			108			41			57	
Internal Link Dist (ft)		416			1115			286			370	
Turn Bay Length (ft)	85											
Base Capacity (vph)	734	1088			1126			545			638	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.07	0.43			0.25			0.25			0.15	

Intersection Summary

Area Type:	CBD
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	14 (20%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	11.1
Intersection LOS:	B
Intersection Capacity Utilization:	46.6%
ICU Level of Service:	A
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 1 PM Peak

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	39	135	61	10	99	56	162	295	23	37	203	27
Future Volume (vph)	39	135	61	10	99	56	162	295	23	37	203	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.97		0.92	1.00		0.98	0.98	
Frt		0.965			0.954			0.989			0.982	
Flt Protected		0.992			0.997		0.950			0.950		
Satd. Flow (prot)	0	1759	0	0	1713	0	1770	1835	0	1770	1787	0
Flt Permitted		0.909			0.976		0.508			0.553		
Satd. Flow (perm)	0	1599	0	0	1675	0	869	1835	0	1010	1787	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	27		14	14		27	52		9	9		52
Peak Hour Factor	0.86	0.86	0.86	0.79	0.79	0.79	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	45	157	71	13	125	71	176	321	25	39	211	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	273	0	0	209	0	176	346	0	39	239	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	30.0	30.0		30.0	30.0		14.0	40.0		26.0	26.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		20.0%	57.1%		37.1%	37.1%	
Maximum Green (s)	25.1	25.1		25.0	25.0		9.2	35.2		21.2	21.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		16.1			16.1		43.9	43.9		30.9	30.9	
Actuated g/C Ratio		0.23			0.23		0.63	0.63		0.44	0.44	
v/c Ratio		0.74			0.54		0.27	0.30		0.09	0.30	
Control Delay		32.6			28.1		6.3	6.6		15.3	16.1	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 1 PM Peak
Timing Plan: PM Peak

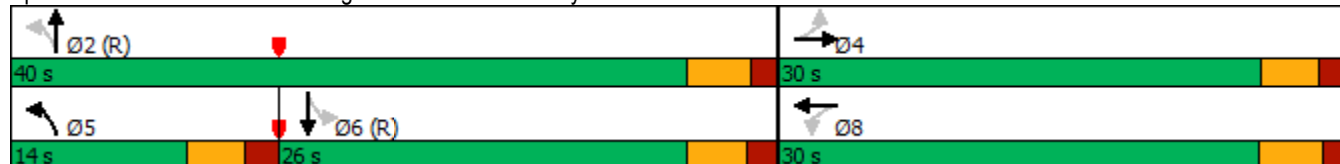


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0		0.0	0.3		0.0	0.0	
Total Delay		32.6			28.1		6.3	6.9		15.3	16.1	
LOS		C			C		A	A		B	B	
Approach Delay		32.6			28.1			6.7			16.0	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		118			79		33	83		9	62	
Queue Length 95th (ft)		137			105		65	143		33	141	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		571			598		665	1150		445	788	
Starvation Cap Reductn		0			0		0	348		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.48			0.35		0.26	0.43		0.09	0.30	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	32 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	17.7
Intersection LOS:	B
Intersection Capacity Utilization:	62.5%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street

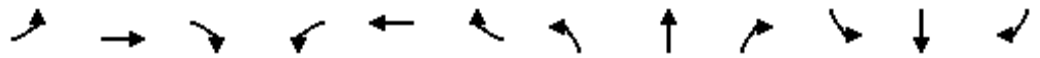


Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

8: Carolina Square Driveway/Church Street & W. Franklin Street

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	461	18	41	565	72	24	48	40	73	59	74
Future Volume (vph)	65	461	18	41	565	72	24	48	40	73	59	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%			-3%	
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.88	0.96			0.94	0.88		0.86	
Frt		0.994			0.983				0.850		0.952	
Flt Protected	0.950			0.950				0.983			0.983	
Satd. Flow (prot)	1457	1503	0	1501	1493	0	0	1681	1454	0	1418	0
Flt Permitted	0.287			0.395				0.866			0.850	
Satd. Flow (perm)	440	1503	0	547	1493	0	0	1387	1282	0	1188	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			294			285			379	
Travel Time (s)		33.9			10.0			9.7			10.3	
Confl. Peds. (#/hr)	124		164	164		124	175		63	63		175
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.81	0.81	0.81	0.91	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	71	507	20	44	608	77	30	59	49	80	65	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	527	0	44	685	0	0	89	49	0	226	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%	41.4%	41.4%	41.4%	
Maximum Green (s)	35.4	35.4		35.4	35.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	42.0	42.0		42.0	42.0			18.0	18.0		18.0	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 Build Alternative 1 PM Peak

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.26	0.26			0.26
v/c Ratio	0.27	0.58		0.13	0.76			0.25	0.15			0.74
Control Delay	12.2	13.4		9.9	17.4			20.5	18.9			35.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	12.2	13.4		9.9	17.4			20.5	18.9			35.7
LOS	B	B		A	B			C	B			D
Approach Delay		13.3			17.0			19.9				35.7
Approach LOS		B			B			B				D
Queue Length 50th (ft)	13	127		16	324			30	16			102
Queue Length 95th (ft)	46	268		m18	m325			51	32			112
Internal Link Dist (ft)		913			214			205				299
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	264	902		328	896			475	439			407
Starvation Cap Reductn	0	0		0	0			0	0			0
Spillback Cap Reductn	0	0		0	0			0	0			0
Storage Cap Reductn	0	0		0	0			0	0			0
Reduced v/c Ratio	0.27	0.58		0.13	0.76			0.19	0.11			0.56

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 66 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 18.4
 Intersection LOS: B
 Intersection Capacity Utilization 81.8%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	430	75	101	514	66	64	560	112	73	413	119
Future Volume (vph)	176	430	75	101	514	66	64	560	112	73	413	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.87	0.96		0.87		0.68	0.90	0.96		0.93	0.95	
Frt		0.978				0.850		0.975			0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1412	2934	0	1479	1557	1465	1380	2692	0	1385	2538	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1223	2934	0	1287	1557	997	1246	2692	0	1283	2538	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		461			941			981			353	
Travel Time (s)		15.7			32.1			26.8			9.6	
Confl. Peds. (#/hr)	193		152	152		193	67		108	108		67
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	7%	7%	7%	4%	4%	4%
Adj. Flow (vph)	202	494	86	120	612	79	71	622	124	78	439	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	580	0	120	612	79	71	746	0	78	566	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	22.0	36.0		43.0	57.0	15.0	21.0	46.0		15.0	40.0	
Total Split (%)	15.7%	25.7%		30.7%	40.7%	10.7%	15.0%	32.9%		10.7%	28.6%	
Maximum Green (s)	16.6	29.8		37.1	50.8	9.1	15.1	40.1		9.1	34.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	18.0	54.2		15.8	52.0	63.8	11.7	40.4		9.6	40.9	

Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.39		0.11	0.37	0.46	0.08	0.29		0.07	0.29	
v/c Ratio	1.12	0.51		0.72	1.06	0.16	0.62	0.96		0.83	0.76	
Control Delay	149.6	36.0		94.4	89.0	21.3	101.1	25.8		127.9	36.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.4		0.0	0.8	
Total Delay	149.6	36.0		94.4	89.0	21.3	101.1	26.2		127.9	37.3	
LOS	F	D		F	F	C	F	C		F	D	
Approach Delay		65.3			83.2			32.7			48.3	
Approach LOS		E			F			C			D	
Queue Length 50th (ft)	~222	196		112	~629	31	61	252		75	120	
Queue Length 95th (ft)	#364	297		167	#771	53	m61	m188		m#167	#352	
Internal Link Dist (ft)		381			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	181	1136		401	578	494	157	788		98	740	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	40	
Spillback Cap Reductn	0	0		0	0	0	0	3		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.12	0.51		0.30	1.06	0.16	0.45	0.95		0.80	0.81	

Intersection Summary

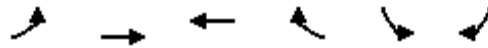
Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 57.8 Intersection LOS: E
 Intersection Capacity Utilization 85.6% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2022 Build Alternative 1 PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (vph)	34	601	648	66	148	57
Future Volume (vph)	34	601	648	66	148	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.97		0.87	
Frt			0.986		0.962	
Flt Protected		0.997			0.965	
Satd. Flow (prot)	0	3282	2827	0	1388	0
Flt Permitted		0.885			0.965	
Satd. Flow (perm)	0	2901	2827	0	1291	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	114			114	88	198
Peak Hour Factor	0.90	0.90	0.93	0.93	0.83	0.83
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Parking (#/hr)						0
Adj. Flow (vph)	38	668	697	71	178	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	706	768	0	247	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	16.2	16.2	21.1		24.1	
Total Split (s)	43.0	43.0	43.0		27.0	
Total Split (%)	61.4%	61.4%	61.4%		38.6%	
Maximum Green (s)	36.8	36.8	36.9		21.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		44.2	44.2		15.8	
Actuated g/C Ratio		0.63	0.63		0.23	
v/c Ratio		0.39	0.43		0.79	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

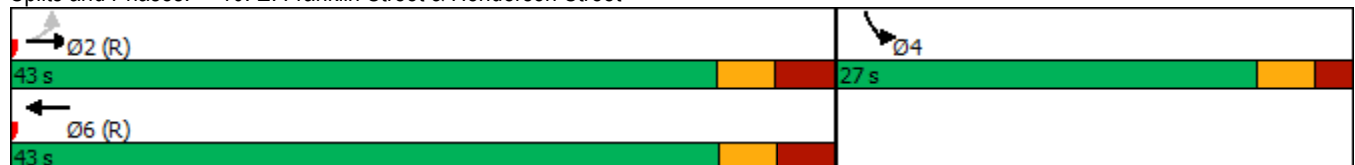


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		8.9	5.2		41.6	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.9	5.2		41.6	
LOS		A	A		D	
Approach Delay		8.9	5.2		41.6	
Approach LOS		A	A		D	
Queue Length 50th (ft)		187	68		105	
Queue Length 95th (ft)		m177	133		120	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1831	1784		436	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.39	0.43		0.57	

Intersection Summary

Area Type:	CBD
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	27 (39%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	12.0
Intersection LOS:	B
Intersection Capacity Utilization:	70.7%
ICU Level of Service:	C
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 10: E. Franklin Street & Henderson Street



Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	539	231	62	661	240	50	197	23	54	200	13
Future Volume (vph)	51	539	231	62	661	240	50	197	23	54	200	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99			0.99		0.99	0.99	
Frt		0.955			0.960			0.988			0.991	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1585	2995	0	1609	3173	0	0	1811	0	1643	1701	0
Flt Permitted	0.252			0.299				0.701		0.398		
Satd. Flow (perm)	419	2995	0	504	3173	0	0	1269	0	684	1701	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	16		16	16		16	58		7	7		58
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88
Adj. Flow (vph)	56	592	254	67	718	261	54	212	25	61	227	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	846	0	67	979	0	0	291	0	61	242	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	79.0	79.0		79.0	79.0		14.0	61.0		61.0	47.0	
Total Split (%)	56.4%	56.4%		56.4%	56.4%		10.0%	43.6%		43.6%	33.6%	
Maximum Green (s)	73.7	73.7		73.7	73.7		7.8	54.6		54.6	40.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	94.5	94.5		94.5	94.5			35.5		35.5	35.5	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.25		0.25	0.25	

Lanes, Volumes, Timings
11: Raleigh Street/Hillsborough Street & E. Franklin Street

2022 Build Alternative 1 PM Peak
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.20	0.42		0.20	0.46			0.90		0.35	0.56	
Control Delay	6.0	4.8		12.4	12.6			80.5		40.7	43.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.9	
Total Delay	6.0	4.8		12.4	12.6			80.5		40.7	44.1	
LOS	A	A		B	B			F		D	D	
Approach Delay		4.9			12.6			80.5			43.4	
Approach LOS		A			B			F			D	
Queue Length 50th (ft)	8	67		21	205			258		43	170	
Queue Length 95th (ft)	m20	97		57	318			341		72	213	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	282	2020		339	2140			507		273	521	
Starvation Cap Reductn	0	0		0	0			0		0	105	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.20	0.42		0.20	0.46			0.57		0.22	0.58	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 73 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 21.3 Intersection LOS: C
 Intersection Capacity Utilization 84.3% ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	96	2	18	34	1	8	14	906	13	11	656	77
Future Volume (vph)	96	2	18	34	1	8	14	906	13	11	656	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		0.99			0.99		0.99	1.00		0.99	1.00	
Frt		0.979			0.974			0.998			0.984	
Flt Protected		0.960			0.962		0.950			0.950		
Satd. Flow (prot)	0	1794	0	0	1732	0	1735	3459	0	1787	3504	0
Flt Permitted		0.723			0.753		0.344			0.231		
Satd. Flow (perm)	0	1349	0	0	1339	0	625	3459	0	429	3504	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)	2		20	20		2	7		28	28		7
Peak Hour Factor	0.89	0.89	0.89	0.75	0.75	0.75	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	108	2	20	45	1	11	16	1053	15	12	705	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	57	0	16	1068	0	12	788	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		10.9			10.8		27.8	27.8		27.8	27.8	
Actuated g/C Ratio		0.25			0.24		0.63	0.63		0.63	0.63	

Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.39			0.17		0.04	0.49		0.04	0.36	
Control Delay		19.8			16.7		5.8	7.5		6.0	6.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		19.8			16.7		5.8	7.5		6.0	6.5	
LOS		B			B		A	A		A	A	
Approach Delay		19.8			16.7			7.5			6.4	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		27			11		2	81		1	53	
Queue Length 95th (ft)		77			32		9	142		8	102	
Internal Link Dist (ft)		371			258			2028			704	
Turn Bay Length (ft)							225			250		
Base Capacity (vph)		475			468		619	3427		425	3471	
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		0.27			0.12		0.03	0.31		0.03	0.23	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	44.2
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	8.1
Intersection LOS:	A
Intersection Capacity Utilization:	47.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 Build Alternative 1 PM Peak
 Timing Plan: PM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↗		↖↗	↖				
Traffic Volume (vph)	148	220	539	359	0	0		
Future Volume (vph)	148	220	539	359	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.84		0.74					
Frt	0.919							
Flt Protected			0.950					
Satd. Flow (prot)	1269	0	2890	1622	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1269	0	2147	1622	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		70	70					
Peak Hour Factor	0.93	0.93	0.96	0.96	0.90	0.90		
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%		
Adj. Flow (vph)	159	237	561	374	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	396	0	561	374	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	20.1			20.0			20.0	21.0
Total Split (s)	44.0			102.0			58.0	38.0
Total Split (%)	31.4%			72.9%			41%	27%
Maximum Green (s)	38.9			97.0			52.9	34.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lead						Lag	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	57.0		73.0	124.0				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

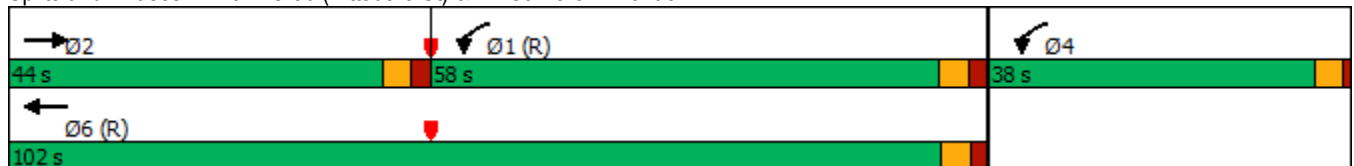


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.41		0.52	0.89				
v/c Ratio	0.77		0.37	0.26				
Control Delay	48.1		13.4	0.8				
Queue Delay	0.0		0.1	0.7				
Total Delay	48.1		13.5	1.5				
LOS	D		B	A				
Approach Delay	48.1			8.7				
Approach LOS	D			A				
Queue Length 50th (ft)	324		80	6				
Queue Length 95th (ft)	447		m113	m37				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	517		2063	1436				
Starvation Cap Reductn	0		520	733				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.77		0.36	0.53				

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 104 (74%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 20.4 Intersection LOS: C
 Intersection Capacity Utilization 52.0% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue

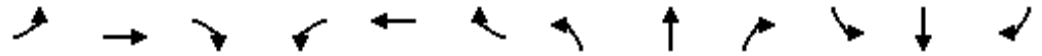


Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	122	0	0	166	51	220	663	59	119	0	500
Future Volume (vph)	20	122	0	0	166	51	220	663	59	119	0	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.86				0.93		0.68	0.94		0.79		0.60
Fr _t					0.968			0.988				0.850
Fl _t Protected	0.950						0.950	0.999		0.950		
Satd. Flow (prot)	1532	1668	0	0	1493	0	1295	2542	0	1453	0	2367
Fl _t Permitted	0.298						0.950	0.999		0.950		
Satd. Flow (perm)	411	1668	0	0	1493	0	884	2519	0	1147	0	1418
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	157		172	172		157	111		248	248		111
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.87	0.87	0.87	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	6%	6%	6%	7%	7%	7%
Adj. Flow (vph)	22	134	0	0	184	57	253	762	68	140	0	588
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	22	134	0	0	241	0	228	855	0	140	0	588
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	31.0	31.0			31.0		47.0	47.0		34.0		34.0
Total Split (%)	22.1%	22.1%			22.1%		33.6%	33.6%		24.3%		24.3%
Maximum Green (s)	24.8	24.8			24.8		41.1	41.1		28.4		28.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	25.0	25.0			25.0		47.5	47.5		52.5		52.5

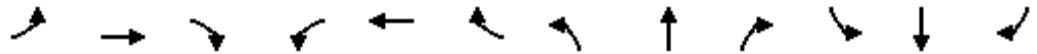
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	20%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: PM Peak

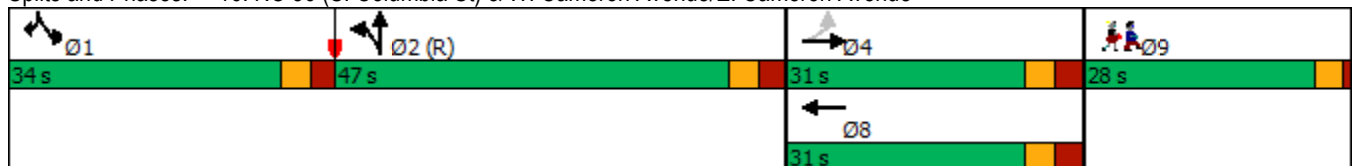


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.18	0.18			0.18		0.34	0.34		0.38		0.38
v/c Ratio	0.30	0.45			0.91		0.52	0.99		0.26		0.66
Control Delay	23.8	20.4			91.7		41.6	74.3		18.4		27.5
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	23.8	20.4			91.7		41.6	74.3		18.4		27.5
LOS	C	C			F		D	E		B		C
Approach Delay		20.9			91.7			67.4				25.8
Approach LOS		C			F			E				C
Queue Length 50th (ft)	11	74			216		175	410		83		257
Queue Length 95th (ft)	m15	m102			#367		264	#537		m105		323
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	76	309			277		439	862		545		887
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	0.29	0.43			0.87		0.52	0.99		0.26		0.66

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 23 (16%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 53.1 Intersection LOS: D
 Intersection Capacity Utilization 79.3% ICU Level of Service D
 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: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

2022 Build Alternative 1 PM Peak

17: Raleigh Street & E. Cameron Avenue/Country Club Road

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	27	162	47	35	129	179	55	92	61	262	186	53
Future Volume (vph)	27	162	47	35	129	179	55	92	61	262	186	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94			0.88			0.88		0.82	0.88	
Frt		0.973			0.913			0.940			0.967	
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1571	0	1569	1329	0	1563	1358	0	1585	1419	0
Flt Permitted		0.924		0.374			0.586			0.450		
Satd. Flow (perm)	0	1441	0	618	1329	0	964	1358	0	613	1419	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		598			651			409			995	
Travel Time (s)		16.3			17.8			11.2			27.1	
Confl. Peds. (#/hr)	39		37	37		39	107		60	60		107
Peak Hour Factor	0.75	0.75	0.75	0.89	0.89	0.89	0.89	0.89	0.89	0.84	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Adj. Flow (vph)	36	216	63	39	145	201	62	103	69	312	221	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	0	39	346	0	62	172	0	312	284	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		24.4		30.8	30.8		23.9	15.6		36.5	26.7	
Actuated g/C Ratio		0.31		0.39	0.39		0.31	0.20		0.47	0.34	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 1 PM Peak
 Timing Plan: PM Peak

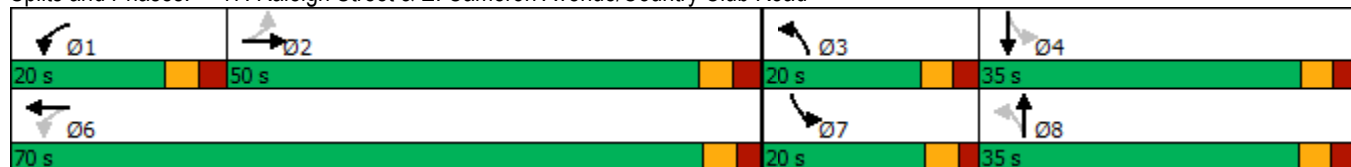


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.70		0.11	0.66		0.17	0.64		0.65	0.59	
Control Delay		35.1		15.1	25.8		17.6	43.4		25.6	32.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		35.1		15.1	25.8		17.6	43.4		25.6	32.9	
LOS		D		B	C		B	D		C	C	
Approach Delay		35.1			24.7			36.5			29.1	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)		146		11	128		19	84		111	132	
Queue Length 95th (ft)		213		32	248		51	172		#213	248	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		904		448	1088		518	568		489	596	
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		0.35		0.09	0.32		0.12	0.30		0.64	0.48	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 78.2
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 30.4
 Intersection LOS: C
 Intersection Capacity Utilization 79.1%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road





2022 With Site – Modified Site Access

Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 Build Alternative 2 AM Peak

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	288	21	32	301	15	33	24	39	27	39	11
Future Volume (vph)	14	288	21	32	301	15	33	24	39	27	39	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.95			0.97	
Frt		0.991			0.994			0.946			0.981	
Flt Protected		0.998			0.995			0.983			0.983	
Satd. Flow (prot)	0	1734	0	0	1737	0	0	1505	0	0	1602	0
Flt Permitted		0.982			0.950			0.882			0.875	
Satd. Flow (perm)	0	1704	0	0	1655	0	0	1333	0	0	1398	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	20		17	17		20	21		31	31		21
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.84	0.84	0.84	0.72	0.72	0.72
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	16	335	24	36	338	17	39	29	46	38	54	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	0	391	0	0	114	0	0	107	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	38.0	38.0		38.0	38.0		22.0	22.0		22.0	22.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	33.5	33.5		33.4	33.4		17.1	17.1		17.1	17.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		42.8			42.8			10.5			10.5	
Actuated g/C Ratio		0.71			0.71			0.18			0.18	
v/c Ratio		0.31			0.33			0.49			0.44	
Control Delay		5.8			3.2			24.5			26.8	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 Build Alternative 2 AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.8			3.2			24.5			26.8	
LOS		A			A			C			C	
Approach Delay		5.8			3.2			24.5			26.8	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		48			18			38			35	
Queue Length 95th (ft)		102			48			55			53	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1216			1181			377			396	
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		0.31			0.33			0.30			0.27	

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	7 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	9.2
Intersection LOS:	A
Intersection Capacity Utilization	51.4%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: Church Street & W. Rosemary Street

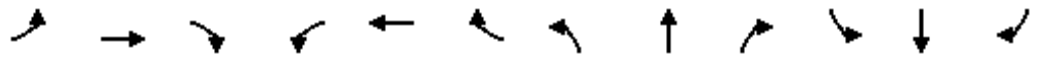


Lanes, Volumes, Timings

2022 Build Alternative 2 AM Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	208	21	15	166	29	22	309	73	51	559	176
Future Volume (vph)	150	208	21	15	166	29	22	309	73	51	559	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.99	1.00		0.98	1.00		0.98	0.97		0.94		0.91
Frt		0.986			0.978			0.971				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1640	0	1585	1625	0	1355	2657	0	1485	2673	1285
Flt Permitted	0.287			0.595			0.354			0.463		
Satd. Flow (perm)	427	1640	0	977	1625	0	496	2657	0	684	2673	1169
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			461			353			225	
Travel Time (s)		25.8			15.7			9.6			6.1	
Confl. Peds. (#/hr)	12		16	16		12	19		34	34		19
Peak Hour Factor	0.86	0.86	0.86	0.90	0.90	0.90	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	5%	5%	5%
Adj. Flow (vph)	174	242	24	17	184	32	24	343	81	58	635	200
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	266	0	17	216	0	24	424	0	58	635	200
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	23.0	57.0		34.0	34.0		13.0	50.0		13.0	50.0	23.0
Total Split (%)	19.2%	47.5%		28.3%	28.3%		10.8%	41.7%		10.8%	41.7%	19.2%
Maximum Green (s)	17.2	51.0		28.0	28.0		7.2	44.2		7.9	44.2	17.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	41.3	41.3		20.4	20.4		65.3	58.7		65.5	61.0	76.9

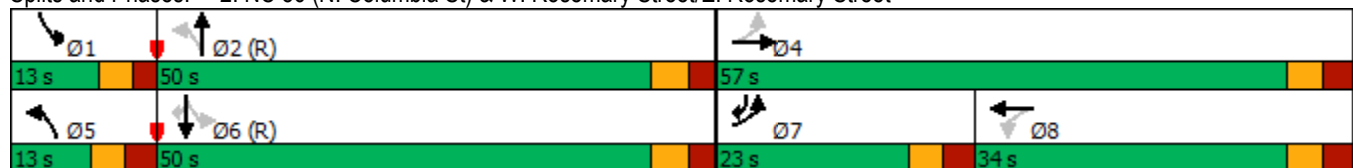


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.34	0.34		0.17	0.17		0.54	0.49		0.55	0.51	0.64
v/c Ratio	0.62	0.47		0.10	0.78		0.07	0.33		0.14	0.47	0.26
Control Delay	39.0	33.8		36.2	57.8		12.0	14.6		14.8	23.5	10.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1		0.0	0.0	0.0
Total Delay	39.0	33.8		36.2	57.8		12.0	14.7		14.8	23.5	10.7
LOS	D	C		D	E		B	B		B	C	B
Approach Delay		35.9			56.3			14.5			20.1	
Approach LOS		D			E			B			C	
Queue Length 50th (ft)	104	166		9	134		5	58		20	183	61
Queue Length 95th (ft)	142	225		29	196		m14	102		46	262	115
Internal Link Dist (ft)		677			381			273			145	
Turn Bay Length (ft)	100			150			75			150		
Base Capacity (vph)	296	710		236	392		329	1299		429	1358	786
Starvation Cap Reductn	0	0		0	0		0	191		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	49	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.59	0.37		0.07	0.55		0.07	0.38		0.14	0.49	0.25

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 41 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 26.5 Intersection LOS: C
 Intersection Capacity Utilization 63.8% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 2 AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	137	62	8	244	16	57	6	8	9	16	5
Future Volume (vph)	5	137	62	8	244	16	57	6	8	9	16	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99			1.00			0.95			0.98	
Frt		0.953			0.992			0.985			0.979	
Flt Protected	0.950				0.998			0.961			0.985	
Satd. Flow (prot)	1593	1580	0	0	1657	0	0	1559	0	0	1559	0
Flt Permitted	0.591				0.992			0.738			0.884	
Satd. Flow (perm)	985	1580	0	0	1646	0	0	1151	0	0	1380	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		496			1195			366			450	
Travel Time (s)		16.9			40.7			12.5			15.3	
Confl. Peds. (#/hr)	4		6	6		4	22		23	23		22
Peak Hour Factor	0.89	0.89	0.89	0.75	0.75	0.75	0.87	0.87	0.87	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	6	154	70	11	325	21	66	7	9	13	24	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	224	0	0	357	0	0	82	0	0	44	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.1	35.1		35.1	35.1		15.2	15.2		15.2	15.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.1			0.1			0.2			0.2	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	44.2	44.2			44.2			9.4			9.4	
Actuated g/C Ratio	0.74	0.74			0.74			0.16			0.16	

Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 2 AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.01	0.19			0.29			0.46				0.20
Control Delay	6.2	5.6			5.5			27.5				23.5
Queue Delay	0.0	0.0			0.0			0.0				0.0
Total Delay	6.2	5.6			5.5			27.5				23.5
LOS	A	A			A			C				C
Approach Delay		5.7			5.5			27.5				23.5
Approach LOS		A			A			C				C
Queue Length 50th (ft)	1	44			70			40				14
Queue Length 95th (ft)	m5	94			83			75				27
Internal Link Dist (ft)		416			1115			286				370
Turn Bay Length (ft)	85											
Base Capacity (vph)	725	1163			1211			287				345
Starvation Cap Reductn	0	0			0			0				0
Spillback Cap Reductn	0	0			0			0				0
Storage Cap Reductn	0	0			0			0				0
Reduced v/c Ratio	0.01	0.19			0.29			0.29				0.13

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 38 (63%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 9.2
 Intersection Capacity Utilization 41.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 2 AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	6	57	67	0	110	12	141	142	6	21	356	32
Future Volume (vph)	6	57	67	0	110	12	141	142	6	21	356	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00		1.00	1.00	
Frt		0.930			0.987			0.994			0.987	
Flt Protected		0.998					0.950			0.950		
Satd. Flow (prot)	0	1706	0	0	1832	0	1752	1832	0	1752	1812	0
Flt Permitted		0.979					0.377			0.656		
Satd. Flow (perm)	0	1672	0	0	1832	0	695	1832	0	1204	1812	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	6		3	3		6	13		2	2		13
Peak Hour Factor	0.82	0.82	0.82	0.71	0.71	0.71	0.93	0.93	0.93	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	7	70	82	0	155	17	152	153	6	23	396	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	159	0	0	172	0	152	159	0	23	432	0
Turn Type	Perm	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	20.0	20.0		20.0	20.0		12.0	40.0		28.0	28.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		20.0%	66.7%		46.7%	46.7%	
Maximum Green (s)	15.1	15.1		15.0	15.0		7.2	35.2		23.2	23.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		10.2			10.2		42.2	43.2		33.5	33.5	
Actuated g/C Ratio		0.17			0.17		0.70	0.72		0.56	0.56	
v/c Ratio		0.56			0.55		0.25	0.12		0.03	0.43	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 2 AM Peak
Timing Plan: AM Peak

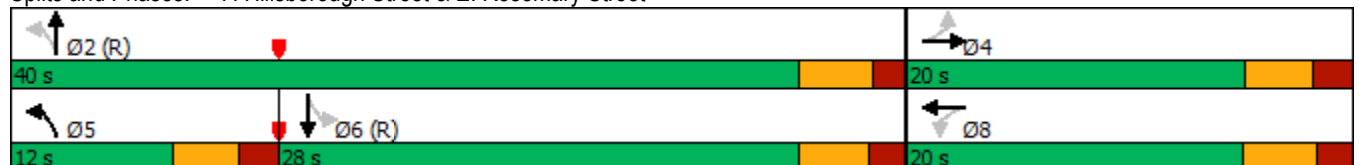


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		28.6			29.0		3.1	2.3		10.9	13.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		28.6			29.0		3.1	2.3		10.9	13.4	
LOS		C			C		A	A		B	B	
Approach Delay		28.6			29.0			2.7				13.3
Approach LOS		C			C			A				B
Queue Length 50th (ft)		62			58		8	8		4	102	
Queue Length 95th (ft)		93			77		21	22		17	207	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		418			458		614	1318		671	1010	
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		0.38			0.38		0.25	0.12		0.03	0.43	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	14 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	15.0
Intersection LOS:	B
Intersection Capacity Utilization	53.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street

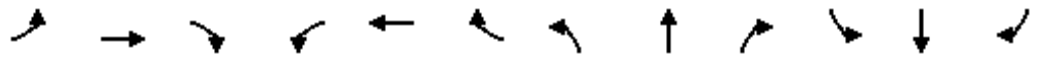


Lanes, Volumes, Timings

2022 Build Alternative 2 AM Peak

8: Carolina Square Driveway/Church Street & W. Franklin Street

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	335	23	10	248	43	2	5	10	20	20	49
Future Volume (vph)	45	335	23	10	248	43	2	5	10	20	20	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.95	0.98			0.98	0.94		0.94	
Fr _t		0.990			0.978				0.850		0.926	
Fl _t Protected	0.950			0.950				0.985			0.989	
Satd. Flow (prot)	1430	1478	0	1431	1450	0	0	1621	1399	0	1431	0
Fl _t Permitted	0.551			0.503				0.884			0.918	
Satd. Flow (perm)	789	1478	0	721	1450	0	0	1423	1316	0	1317	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			298			285			379	
Travel Time (s)		33.9			10.2			9.7			10.3	
Confl. Peds. (#/hr)	39		57	57		39	57		29	29		57
Peak Hour Factor	0.84	0.84	0.84	0.83	0.83	0.83	0.53	0.53	0.53	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	54	399	27	12	299	52	4	9	19	22	22	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	426	0	12	351	0	0	13	19	0	97	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%	48.3%	48.3%	48.3%	
Maximum Green (s)	25.4	25.4		25.4	25.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	43.3	43.3		43.3	43.3			10.3	10.3		10.3	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 Build Alternative 2 AM Peak
 Timing Plan: AM Peak

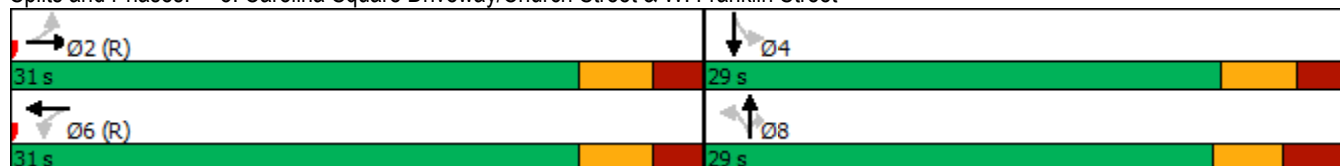


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.17	0.17			0.17
v/c Ratio	0.09	0.40		0.02	0.34			0.05	0.08			0.43
Control Delay	5.0	6.5		2.2	4.1			19.7	20.2			24.6
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	5.0	6.5		2.2	4.1			19.7	20.2			24.6
LOS	A	A		A	A			B	C			C
Approach Delay		6.3			4.0			20.0				24.6
Approach LOS		A			A			C				C
Queue Length 50th (ft)	6	57		3	80			4	6			35
Queue Length 95th (ft)	18	119		m1	28			9	12			56
Internal Link Dist (ft)		913			218			205				299
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	569	1067		520	1046			569	526			526
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	0.09	0.40		0.02	0.34			0.02	0.04			0.18

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 42 (70%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 7.7
 Intersection LOS: A
 Intersection Capacity Utilization 63.6%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
























Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 2 AM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	283	29	65	275	46	30	310	87	36	459	79
Future Volume (vph)	69	283	29	65	275	46	30	310	87	36	459	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.87	0.99		0.95		0.79	0.97	0.96		0.91	0.99	
Frt		0.986				0.850		0.967			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1372	2980	0	1410	1484	1397	1342	2592	0	1346	2595	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1191	2980	0	1344	1484	1100	1298	2592	0	1227	2595	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		457			941			981			353	
Travel Time (s)		15.6			32.1			26.8			9.6	
Confl. Peds. (#/hr)	125		49	49		125	29		98	98		29
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	86	354	36	75	316	53	32	333	94	42	540	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	390	0	75	316	53	32	427	0	42	633	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	22.0	38.0		22.0	38.0	22.0	22.0	38.0		22.0	38.0	
Total Split (%)	18.3%	31.7%		18.3%	31.7%	18.3%	18.3%	31.7%		18.3%	31.7%	
Maximum Green (s)	16.6	31.8		16.1	31.8	16.1	16.1	32.1		16.1	32.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	11.7	52.9		11.2	52.3	63.7	8.6	31.9		9.2	35.0	

Lanes, Volumes, Timings

2022 Build Alternative 2 AM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street AM Peak

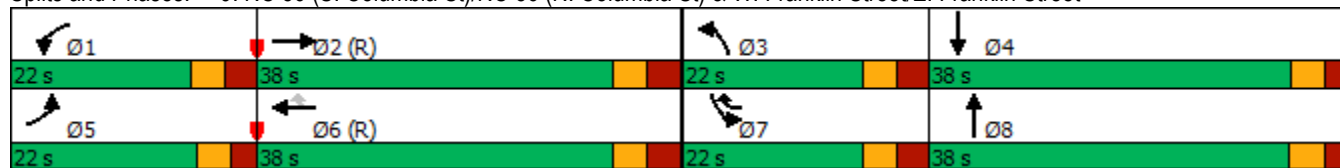


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.10	0.44		0.09	0.44	0.53	0.07	0.27		0.08	0.29	
v/c Ratio	0.65	0.30		0.57	0.49	0.09	0.33	0.62		0.41	0.84	
Control Delay	77.1	23.6		79.4	21.2	8.9	80.7	21.3		91.6	29.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.1	
Total Delay	77.1	23.6		79.4	21.2	8.9	80.7	21.3		91.6	30.0	
LOS	E	C		E	C	A	F	C		F	C	
Approach Delay		33.3			29.6			25.4			33.9	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	68	95		61	94	11	17	157		30	244	
Queue Length 95th (ft)	110	138		109	#154	19	m45	153		69	110	
Internal Link Dist (ft)		377			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	194	1314		199	646	700	190	756		190	781	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	6	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.44	0.30		0.38	0.49	0.08	0.17	0.56		0.22	0.82	

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 30.9 Intersection LOS: C
 Intersection Capacity Utilization 65.0% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2022 Build Alternative 2 AM Peak
Timing Plan: AM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	15	366	384	62	65	17
Future Volume (vph)	15	366	384	62	65	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.95	
Frt			0.979		0.971	
Flt Protected		0.998			0.962	
Satd. Flow (prot)	0	3223	2771	0	1434	0
Flt Permitted		0.933			0.962	
Satd. Flow (perm)	0	3010	2771	0	1387	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	26			26	44	87
Peak Hour Factor	0.91	0.91	0.90	0.90	0.79	0.79
Heavy Vehicles (%)	5%	5%	5%	5%	4%	4%
Parking (#/hr)						0
Adj. Flow (vph)	16	402	427	69	82	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	418	496	0	104	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	17.0	17.0	22.0		25.0	
Total Split (s)	32.0	32.0	32.0		28.0	
Total Split (%)	53.3%	53.3%	53.3%		46.7%	
Maximum Green (s)	25.8	25.8	25.9		22.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		44.6	44.6		8.8	
Actuated g/C Ratio		0.74	0.74		0.15	
v/c Ratio		0.19	0.24		0.50	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2022 Build Alternative 2 AM Peak
 Timing Plan: AM Peak

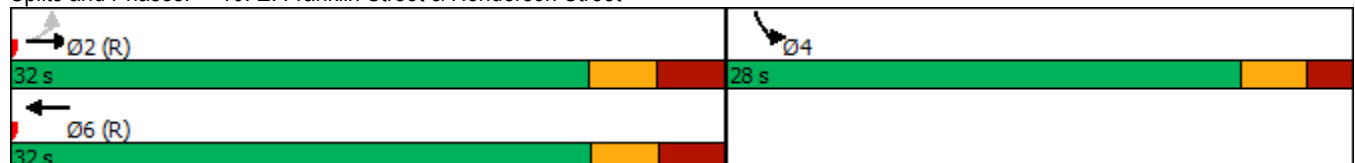


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		6.7	4.7		28.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		6.7	4.7		28.4	
LOS		A	A		C	
Approach Delay		6.7	4.7		28.4	
Approach LOS		A	A		C	
Queue Length 50th (ft)		97	115		34	
Queue Length 95th (ft)		152	17		52	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		2237	2060		549	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.19	0.24		0.19	

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	53 (88%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization:	47.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: E. Franklin Street & Henderson Street



Lanes, Volumes, Timings

2022 Build Alternative 2 AM Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	312	104	42	412	89	76	183	23	67	336	18
Future Volume (vph)	19	312	104	42	412	89	76	183	23	67	336	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99	0.99			0.99		0.99	1.00	
Fr _t		0.962			0.973			0.989			0.992	
Fl _t Protected	0.950			0.950				0.987		0.950		
Satd. Flow (prot)	1539	2930	0	1578	3165	0	0	1770	0	1627	1695	0
Fl _t Permitted	0.401			0.438				0.648		0.494		
Satd. Flow (perm)	646	2930	0	720	3165	0	0	1158	0	839	1695	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	9		16	16		9	25		11	11		25
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.83	0.83	0.83	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	22	363	121	46	448	97	92	220	28	70	350	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	484	0	46	545	0	0	340	0	70	369	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	47.0	47.0		47.0	47.0		28.0	73.0		73.0	45.0	
Total Split (%)	39.2%	39.2%		39.2%	39.2%		23.3%	60.8%		60.8%	37.5%	
Maximum Green (s)	41.7	41.7		41.7	41.7		21.8	66.6		66.6	38.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	60.2	60.2		60.2	60.2			49.8		49.8	49.8	

Lanes, Volumes, Timings

2022 Build Alternative 2 AM Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	77	0	10	6	0	5	2	432	5	0	712	66
Future Volume (vph)	77	0	10	6	0	5	2	432	5	0	712	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		1.00			0.99		1.00	1.00			1.00	
Frt		0.985			0.944			0.998			0.987	
Flt Protected		0.958			0.972		0.950					
Satd. Flow (prot)	0	1737	0	0	1701	0	1686	3364	0	1846	3452	0
Flt Permitted		0.742			0.815		0.266					
Satd. Flow (perm)	0	1345	0	0	1417	0	471	3364	0	1846	3452	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)			16	16			4		4	4		4
Peak Hour Factor	0.52	0.52	0.52	0.92	0.92	0.92	0.93	0.93	0.93	0.84	0.84	0.84
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	148	0	19	7	0	5	2	465	5	0	848	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	12	0	2	470	0	0	927	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		11.7			11.6		22.2	22.2			22.2	
Actuated g/C Ratio		0.27			0.26		0.50	0.50			0.50	

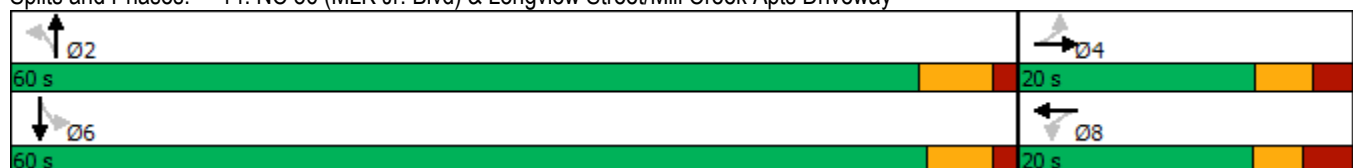


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.47			0.03		0.01	0.28				0.53
Control Delay		18.4			12.6		6.0	7.2				9.1
Queue Delay		0.0			0.0		0.0	0.0				0.0
Total Delay		18.4			12.6		6.0	7.2				9.1
LOS		B			B		A	A				A
Approach Delay		18.4			12.6			7.2				9.1
Approach LOS		B			B			A				A
Queue Length 50th (ft)		31			2		0	31				71
Queue Length 95th (ft)		44			12		3	60				116
Internal Link Dist (ft)		371			258			2028				704
Turn Bay Length (ft)							225					
Base Capacity (vph)		464			485		471	3364				3452
Starvation Cap Reductn		0			0		0	0				0
Spillback Cap Reductn		0			0		0	0				0
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		0.36			0.02		0.00	0.14				0.27

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	44.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	9.5
Intersection LOS:	A
Intersection Capacity Utilization:	42.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 Build Alternative 2 AM Peak
 Timing Plan: AM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	117	159	601	134	0	0		
Future Volume (vph)	117	159	601	134	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.94		0.90					
Frt	0.922							
Flt Protected			0.950					
Satd. Flow (prot)	1432	0	2837	1592	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1432	0	2562	1592	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		57	57					
Peak Hour Factor	0.81	0.81	0.87	0.87	0.90	0.90		
Heavy Vehicles (%)	2%	2%	9%	9%	2%	2%		
Adj. Flow (vph)	144	196	691	154	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	340	0	691	154	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	17.0			15.0			13.0	20.0
Total Split (s)	25.0			40.0			15.0	20.0
Total Split (%)	41.7%			66.7%			25%	33%
Maximum Green (s)	19.9			35.0			9.9	16.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effect Green (s)	20.0		30.0	38.8				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.33		0.50	0.65				
v/c Ratio	0.71		0.49	0.15				
Control Delay	28.0		14.4	5.9				
Queue Delay	0.0		0.0	0.0				
Total Delay	28.0		14.4	5.9				
LOS	C		B	A				
Approach Delay	28.0			12.9				
Approach LOS	C			B				
Queue Length 50th (ft)	105		190	30				
Queue Length 95th (ft)	163		186	m83				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	477		1374	1028				
Starvation Cap Reductn	0		0	0				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.71		0.50	0.15				

Intersection Summary

Area Type: CBD
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 23 (38%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 17.2 Intersection LOS: B
 Intersection Capacity Utilization 47.5% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2022 Build Alternative 2 AM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	91	0	0	95	20	98	386	43	66	0	537
Future Volume (vph)	16	91	0	0	95	20	98	386	43	66	0	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.95				0.99		0.79	0.94		0.75		0.77
Fr _t					0.977			0.985				0.850
Fl _t Protected	0.950						0.950	0.999		0.950		
Satd. Flow (prot)	1532	1668	0	0	1565	0	1248	2454	0	1413	0	2302
Fl _t Permitted	0.522						0.950	0.999		0.950		
Satd. Flow (perm)	803	1668	0	0	1565	0	982	2443	0	1060	0	1776
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	39		102	102		39	71		107	107		71
Peak Hour Factor	0.79	0.79	0.79	0.83	0.83	0.83	0.86	0.86	0.86	0.89	0.89	0.89
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	20	115	0	0	114	24	114	449	50	74	0	603
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	20	115	0	0	138	0	103	510	0	74	0	603
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	34.0	34.0			34.0		22.0	22.0		36.0		36.0
Total Split (%)	28.3%	28.3%			28.3%		18.3%	18.3%		30.0%		30.0%
Maximum Green (s)	27.8	27.8			27.8		16.1	16.1		30.4		30.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	16.4	16.4			16.4		46.8	46.8		41.8		41.8

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings

2022 Build Alternative 2 AM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: AM Peak

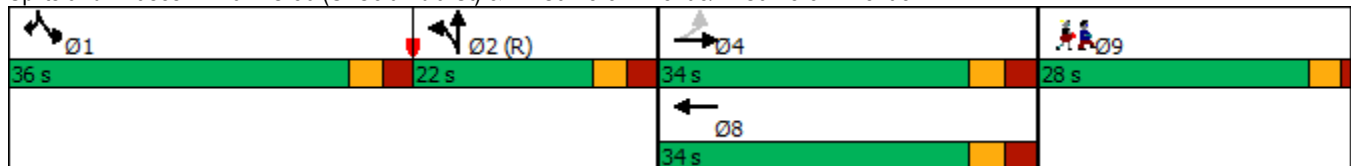


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14			0.14		0.39	0.39		0.35		0.35
v/c Ratio	0.18	0.50			0.64		0.21	0.53		0.15		0.75
Control Delay	36.2	41.1			62.3		28.0	32.1		7.2		17.1
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	36.2	41.1			62.3		28.0	32.1		7.2		17.1
LOS	D	D			E		C	C		A		B
Approach Delay		40.4			62.3			31.4				16.0
Approach LOS		D			E			C				B
Queue Length 50th (ft)	11	82			103		57	164		5		77
Queue Length 95th (ft)	m15	m109			148		110	235		m16		299
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	194	403			378		486	956		492		801
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	0.10	0.29			0.37		0.21	0.53		0.15		0.75

Intersection Summary

Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 39 (33%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 28.2
 Intersection LOS: C
 Intersection Capacity Utilization 67.7%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 2 AM Peak
 Timing Plan: AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	23	44	32	28	142	219	24	45	17	299	148	48
Future Volume (vph)	23	44	32	28	142	219	24	45	17	299	148	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.98	0.98		0.91	0.96		0.89	0.95	
Frt		0.956			0.909			0.958			0.963	
Flt Protected		0.989		0.950			0.950			0.950		
Satd. Flow (prot)	0	1493	0	1569	1470	0	1492	1446	0	1569	1509	0
Flt Permitted		0.834		0.572			0.628			0.457		
Satd. Flow (perm)	0	1257	0	930	1470	0	896	1446	0	674	1509	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	3		6	6		3	31		25	25		31
Peak Hour Factor	0.71	0.71	0.71	0.84	0.84	0.84	0.79	0.79	0.79	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	10%	10%	10%	3%	3%	3%
Adj. Flow (vph)	32	62	45	33	169	261	30	57	22	318	157	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	33	430	0	30	79	0	318	208	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		20.1		24.1	24.1		15.4	10.1		25.4	21.5	
Actuated g/C Ratio		0.33		0.40	0.40		0.25	0.17		0.42	0.35	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 2 AM Peak
 Timing Plan: AM Peak

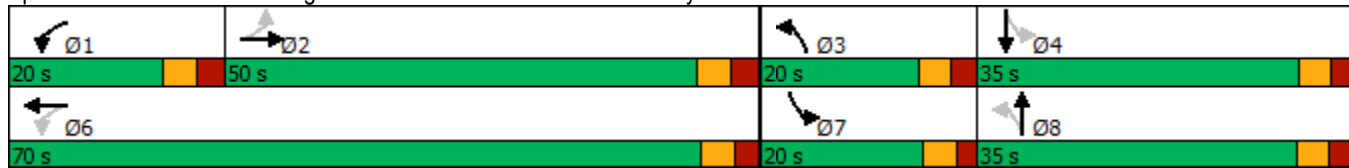


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.33		0.07	0.74		0.10	0.33		0.64	0.39	
Control Delay		22.2		12.5	25.1		14.8	32.1		22.0	22.1	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		22.2		12.5	25.1		14.8	32.1		22.0	22.1	
LOS		C		B	C		B	C		C	C	
Approach Delay		22.2			24.2			27.3			22.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		35		8	137		6	28		77	47	
Queue Length 95th (ft)		79		23	236		23	69		#222	166	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		930		570	1378		521	807		557	842	
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		0.15		0.06	0.31		0.06	0.10		0.57	0.25	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 60.8
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 23.3
 Intersection LOS: C
 Intersection Capacity Utilization 61.7%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road



Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 Build Alternative 2 Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	6	322	29	43	351	24	23	42	56	14	33	10
Future Volume (vph)	6	322	29	43	351	24	23	42	56	14	33	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.92			0.95	
Frt		0.989			0.992			0.938			0.976	
Flt Protected		0.999			0.995			0.991			0.988	
Satd. Flow (prot)	0	1709	0	0	1748	0	0	1480	0	0	1562	0
Flt Permitted		0.994			0.935			0.921			0.918	
Satd. Flow (perm)	0	1700	0	0	1636	0	0	1336	0	0	1426	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	22		24	24		22	75		39	39		75
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	366	33	46	377	26	25	46	61	22	52	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	406	0	0	449	0	0	132	0	0	90	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	43.0	43.0		43.0	43.0		22.0	22.0		22.0	22.0	
Total Split (%)	66.2%	66.2%		66.2%	66.2%		33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	38.5	38.5		38.4	38.4		17.1	17.1		17.1	17.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		46.9			46.9			11.5			11.5	
Actuated g/C Ratio		0.72			0.72			0.18			0.18	
v/c Ratio		0.33			0.38			0.56			0.36	
Control Delay		6.1			2.6			31.9			26.2	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 Build Alternative 2 Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.1			2.6			31.9			26.2	
LOS		A			A			C			C	
Approach Delay		6.1			2.6			31.9			26.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		57			22			48			32	
Queue Length 95th (ft)		123			44			65			43	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1225			1179			349			372	
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		0.33			0.38			0.38			0.24	

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	23 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	9.5
Intersection LOS:	A
Intersection Capacity Utilization:	69.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: Church Street & W. Rosemary Street

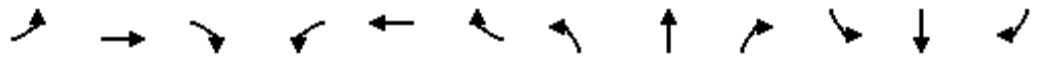


Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	199	48	57	213	41	44	315	121	51	356	178
Future Volume (vph)	155	199	48	57	213	41	44	315	121	51	356	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.97	0.99		0.96	0.99		0.85	0.86		0.79		0.66
Frt		0.971			0.976			0.958				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1596	0	1585	1605	0	1355	2316	0	1485	2673	1285
Flt Permitted	0.287			0.587			0.443			0.433		
Satd. Flow (perm)	417	1596	0	937	1605	0	539	2316	0	536	2673	850
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			456			353			230	
Travel Time (s)		25.8			15.5			9.6			6.3	
Confl. Peds. (#/hr)	53		41	41		53	80		129	129		80
Peak Hour Factor	0.88	0.88	0.88	0.85	0.85	0.85	0.98	0.98	0.98	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	5%	5%	5%
Adj. Flow (vph)	176	226	55	67	251	48	45	321	123	59	414	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	281	0	67	299	0	45	444	0	59	414	207
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	43.0	63.0		20.0	20.0		15.0	52.0		15.0	52.0	43.0
Total Split (%)	33.1%	48.5%		15.4%	15.4%		11.5%	40.0%		11.5%	40.0%	33.1%
Maximum Green (s)	37.2	57.0		14.0	14.0		9.2	46.2		9.9	46.2	37.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		0.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	58.0	58.0		33.4	33.4		56.9	51.9		57.6	51.5	71.1

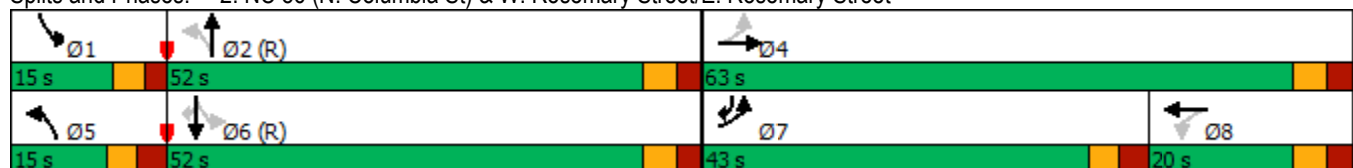


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.45	0.45		0.26	0.26		0.44	0.40		0.44	0.40	0.55
v/c Ratio	0.52	0.39		0.28	0.73		0.16	0.48		0.20	0.39	0.39
Control Delay	29.4	27.3		42.1	53.3		16.5	19.2		20.5	30.3	17.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.5		0.0	0.0	0.0
Total Delay	29.4	27.3		42.1	53.3		16.5	19.7		20.5	30.3	17.4
LOS	C	C		D	D		B	B		C	C	B
Approach Delay		28.1			51.3			19.4			25.5	
Approach LOS		C			D			B			C	
Queue Length 50th (ft)	92	182		41	215		10	54		27	134	86
Queue Length 95th (ft)	121	229		87	#381		m27	111		50	174	112
Internal Link Dist (ft)		677			376			273			150	
Turn Bay Length (ft)	100			150			75			150		
Base Capacity (vph)	480	712		240	412		300	924		318	1058	712
Starvation Cap Reductn	0	0		0	0		0	169		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	3	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.37	0.39		0.28	0.73		0.15	0.59		0.19	0.39	0.29

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 55 (42%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 29.3 Intersection LOS: C
 Intersection Capacity Utilization 68.6% 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: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 2 Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	190	129	15	203	31	54	30	11	9	30	13
Future Volume (vph)	15	190	129	15	203	31	54	30	11	9	30	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.97			0.99			0.85			0.92	
Frt		0.939			0.983			0.984			0.967	
Flt Protected	0.950				0.997			0.972			0.991	
Satd. Flow (prot)	1593	1527	0	0	1626	0	0	1579	0	0	1474	0
Flt Permitted	0.597				0.976			0.790			0.933	
Satd. Flow (perm)	963	1527	0	0	1589	0	0	1105	0	0	1364	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		500			1195			366			450	
Travel Time (s)		17.0			40.7			12.5			15.3	
Confl. Peds. (#/hr)	21		19	19		21	106		47	47		106
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.68	0.68	0.68	0.85	0.85	0.85
Adj. Flow (vph)	16	198	134	16	214	33	79	44	16	11	35	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	332	0	0	263	0	0	139	0	0	61	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	38.0	38.0		38.0	38.0		27.0	27.0		27.0	27.0	
Total Split (%)	58.5%	58.5%		58.5%	58.5%		41.5%	41.5%		41.5%	41.5%	
Maximum Green (s)	33.1	33.1		33.1	33.1		22.2	22.2		22.2	22.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.1			0.1			0.2			0.2	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	46.0	46.0			46.0			12.5			12.5	
Actuated g/C Ratio	0.71	0.71			0.71			0.19			0.19	
v/c Ratio	0.02	0.31			0.23			0.65			0.23	

Lanes, Volumes, Timings
 6: Henderson Street & E. Rosemary Street

2022 Build Alternative 2 Noon Peak
 Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.3	5.3			5.9			35.1			22.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	5.3	5.3			5.9			35.1			22.5	
LOS	A	A			A			D			C	
Approach Delay		5.3			5.9			35.1			22.5	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	2	42			56			61			21	
Queue Length 95th (ft)	m7	97			105			65			42	
Internal Link Dist (ft)		420			1115			286			370	
Turn Bay Length (ft)	85											
Base Capacity (vph)	681	1081			1125			374			461	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.02	0.31			0.23			0.37			0.13	

Intersection Summary

Area Type: CBD
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 63 (97%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 49.4%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 2 Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	23	90	85	3	51	9	161	179	9	16	218	25
Future Volume (vph)	23	90	85	3	51	9	161	179	9	16	218	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98		0.93	1.00		0.99	0.98	
Frt		0.942			0.980			0.993			0.985	
Flt Protected		0.994			0.998		0.950			0.950		
Satd. Flow (prot)	0	1674	0	0	1791	0	1770	1847	0	1719	1750	0
Flt Permitted		0.956			0.982		0.489			0.625		
Satd. Flow (perm)	0	1594	0	0	1758	0	846	1847	0	1117	1750	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	35		35	35		35	50		5	5		50
Peak Hour Factor	0.93	0.93	0.93	0.78	0.78	0.78	0.88	0.88	0.88	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	25	97	91	4	65	12	183	203	10	18	240	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	81	0	183	213	0	18	267	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	24.0	24.0		24.0	24.0		13.0	41.0		28.0	28.0	
Total Split (%)	36.9%	36.9%		36.9%	36.9%		20.0%	63.1%		43.1%	43.1%	
Maximum Green (s)	19.1	19.1		19.0	19.0		8.2	36.2		23.2	23.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		12.8			12.8		42.2	42.2		29.7	29.7	
Actuated g/C Ratio		0.20			0.20		0.65	0.65		0.46	0.46	
v/c Ratio		0.68			0.23		0.28	0.18		0.04	0.33	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 2 Noon Peak
Timing Plan: Noon Peak

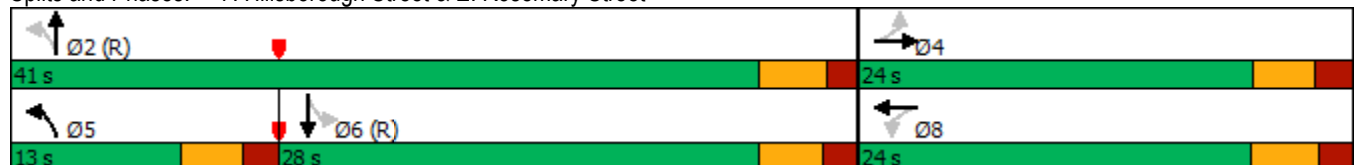


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		32.9			21.9		6.3	5.7		12.8	14.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		32.9			21.9		6.3	5.7		12.8	14.4	
LOS		C			C		A	A		B	B	
Approach Delay		32.9			21.9			6.0			14.3	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		74			27		48	57		4	63	
Queue Length 95th (ft)		98			46		70	82		17	138	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		465			513		665	1198		510	799	
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		0.46			0.16		0.28	0.18		0.04	0.33	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	19 (29%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	15.6
Intersection LOS:	B
Intersection Capacity Utilization	54.0%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

8: Carolina Square Driveway/Church Street & W. Franklin Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	359	26	32	331	68	10	10	22	23	23	56
Future Volume (vph)	51	359	26	32	331	68	10	10	22	23	23	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.84	0.97		0.78	0.93			0.86	0.87		0.78	
Fr _t		0.990			0.974				0.850		0.925	
Fl _t Protected	0.950			0.950				0.976			0.989	
Satd. Flow (prot)	1443	1452	0	1472	1410	0	0	1669	1454	0	1210	0
Fl _t Permitted	0.481			0.478				0.831			0.924	
Satd. Flow (perm)	616	1452	0	579	1410	0	0	1224	1262	0	1103	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			298			285			379	
Travel Time (s)		33.9			10.2			9.7			10.3	
Confl. Peds. (#/hr)	150		248	248		150	225		77	77		225
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.81	0.81	0.81	0.71	0.71	0.71
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	59	413	30	35	364	75	12	12	27	32	32	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	443	0	35	439	0	0	24	27	0	143	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	36.0	36.0		36.0	36.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	55.4%	55.4%		55.4%	55.4%		44.6%	44.6%	44.6%	44.6%	44.6%	
Maximum Green (s)	30.4	30.4		30.4	30.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	44.8	44.8		44.8	44.8			13.9	13.9		13.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.69	0.69		0.69	0.69			0.21	0.21			0.21
v/c Ratio	0.14	0.44		0.09	0.45			0.09	0.10			0.61
Control Delay	7.5	9.0		8.1	10.0			18.7	18.9			32.3
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	7.5	9.0		8.1	10.0			18.7	18.9			32.3
LOS	A	A		A	A			B	B			C
Approach Delay		8.9			9.8			18.8				32.3
Approach LOS		A			A			B				C
Queue Length 50th (ft)	8	79		3	50			8	9			60
Queue Length 95th (ft)	29	177		m27	318			19	21			64
Internal Link Dist (ft)		913			218			205				299
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	424	1000		398	970			451	465			407
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	0.14	0.44		0.09	0.45			0.05	0.06			0.35

Intersection Summary

Area Type: CBD
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 2 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 12.6 Intersection LOS: B
 Intersection Capacity Utilization 70.7% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
























Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	298	46	82	308	87	61	298	90	50	316	89
Future Volume (vph)	103	298	46	82	308	87	61	298	90	50	316	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.80	0.96		0.82		0.67	0.82	0.92		0.80	0.92	
Frt		0.980				0.850		0.965			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1372	2853	0	1437	1512	1423	1342	2463	0	1346	2397	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1096	2853	0	1178	1512	947	1103	2463	0	1079	2397	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		457			941			981			353	
Travel Time (s)		15.6			32.1			26.8			9.6	
Confl. Peds. (#/hr)	251		248	248		251	117		321	321		117
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	129	373	58	94	354	100	66	320	97	59	372	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	431	0	94	354	100	66	417	0	59	477	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	25.0	32.0		25.0	32.0	25.0	25.0	48.0		25.0	48.0	
Total Split (%)	19.2%	24.6%		19.2%	24.6%	19.2%	19.2%	36.9%		19.2%	36.9%	
Maximum Green (s)	19.6	25.8		19.1	25.8	19.1	19.1	42.1		19.1	42.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	16.0	54.6		13.0	51.6	64.4	11.2	31.8		10.6	33.8	

Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

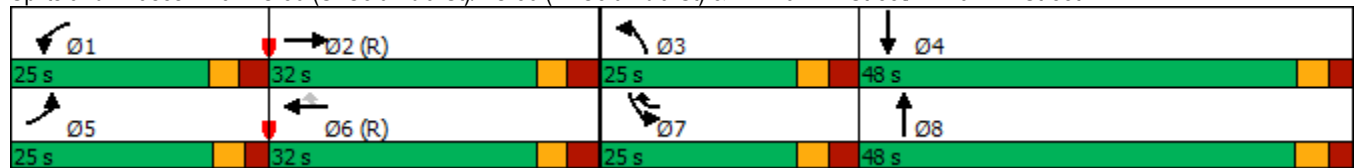
9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.12	0.42		0.10	0.40	0.50	0.09	0.24		0.08	0.26	
v/c Ratio	0.77	0.36		0.66	0.59	0.20	0.57	0.69		0.54	0.77	
Control Delay	76.0	32.2		83.9	38.9	13.5	100.1	28.8		90.5	33.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.1	
Total Delay	76.0	32.2		83.9	38.9	13.5	100.1	28.8		90.5	34.0	
LOS	E	C		F	D	B	F	C		F	C	
Approach Delay		42.3			42.0			38.6			40.2	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	102	127		72	241	31	57	70		52	95	
Queue Length 95th (ft)	138	212		137	#478	68	106	66		94	92	
Internal Link Dist (ft)		377			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	217	1198		221	600	615	206	814		207	792	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	13	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.59	0.36		0.43	0.59	0.16	0.32	0.51		0.29	0.61	

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 40.8 Intersection LOS: D
 Intersection Capacity Utilization 65.5% 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: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2022 Build Alternative 2 Noon Peak
Timing Plan: Noon Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	47	377	415	53	95	80
Future Volume (vph)	47	377	415	53	95	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		0.99	0.97		0.79	
Frt			0.983		0.938	
Flt Protected		0.995			0.974	
Satd. Flow (prot)	0	3213	2749	0	1244	0
Flt Permitted		0.862			0.974	
Satd. Flow (perm)	0	2747	2749	0	1154	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	119			119	130	370
Peak Hour Factor	0.95	0.95	0.92	0.92	0.87	0.87
Heavy Vehicles (%)	5%	5%	4%	4%	2%	2%
Parking (#/hr)						0
Adj. Flow (vph)	49	397	451	58	109	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	446	509	0	201	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	17.0	17.0	22.0		25.0	
Total Split (s)	32.0	32.0	32.0		33.0	
Total Split (%)	49.2%	49.2%	49.2%		50.8%	
Maximum Green (s)	25.8	25.8	25.9		27.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		40.6	40.6		14.4	
Actuated g/C Ratio		0.62	0.62		0.22	
v/c Ratio		0.26	0.30		0.73	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

2022 Build Alternative 2 Noon Peak
 Timing Plan: Noon Peak

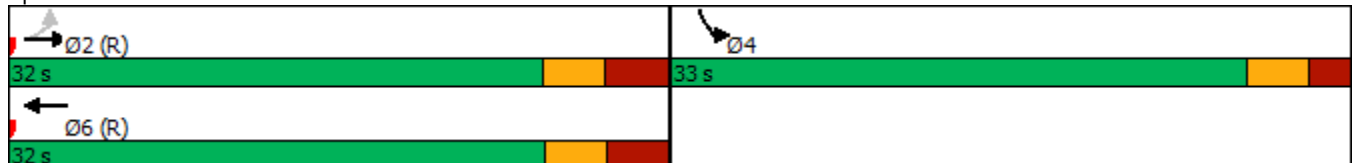


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		6.5	7.5		36.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		6.5	7.5		36.0	
LOS		A	A		D	
Approach Delay		6.5	7.5		36.0	
Approach LOS		A	A		D	
Queue Length 50th (ft)		15	36		91	
Queue Length 95th (ft)		152	131		124	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1714	1715		535	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.26	0.30		0.38	

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	4 (6%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	12.1
Intersection LOS:	B
Intersection Capacity Utilization:	56.8%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 10: E. Franklin Street & Henderson Street

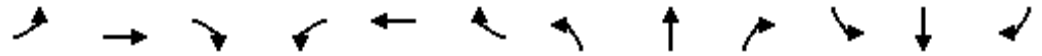


Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	330	148	41	370	144	83	160	23	77	194	23
Future Volume (vph)	55	330	148	41	370	144	83	160	23	77	194	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.98		0.99	0.98			0.97		0.97	0.98	
Fr _t		0.954			0.958			0.989			0.984	
Fl _t Protected	0.950			0.950				0.985		0.950		
Satd. Flow (prot)	1539	2893	0	1593	3096	0	0	1795	0	1612	1638	0
Fl _t Permitted	0.413			0.434				0.663		0.494		
Satd. Flow (perm)	653	2893	0	718	3096	0	0	1179	0	813	1638	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	50		25	25		50	93		33	33		93
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.94	0.94	0.94	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	60	363	163	45	407	158	88	170	24	86	216	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	526	0	45	565	0	0	282	0	86	242	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	60.0	60.0		60.0	60.0		31.0	70.0		70.0	39.0	
Total Split (%)	46.2%	46.2%		46.2%	46.2%		23.8%	53.8%		53.8%	30.0%	
Maximum Green (s)	54.7	54.7		54.7	54.7		24.8	63.6		63.6	32.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	80.0	80.0		80.0	80.0			40.0		40.0	40.0	

Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2022 Build Alternative 2 Noon Peak
 Timing Plan: Noon Peak

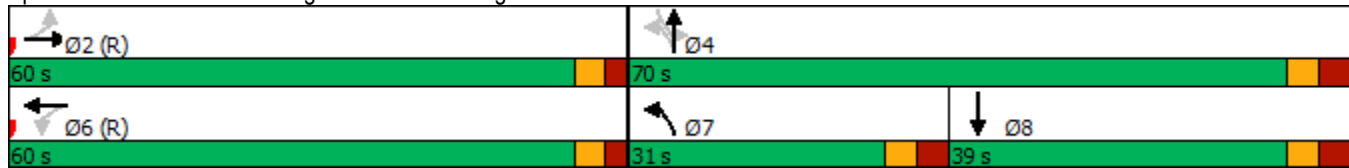


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.62	0.62		0.62	0.62			0.31		0.31	0.31	
v/c Ratio	0.15	0.30		0.10	0.30			0.78		0.34	0.48	
Control Delay	13.2	11.1		14.3	13.8			54.7		35.1	38.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	4.4	
Total Delay	13.2	11.1		14.3	13.8			54.7		35.1	42.6	
LOS	B	B		B	B			D		D	D	
Approach Delay		11.3			13.8			54.7			40.6	
Approach LOS		B			B			D			D	
Queue Length 50th (ft)	12	63		15	111			216		53	162	
Queue Length 95th (ft)	51	154		43	189			278		87	206	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	402	1780		442	1905			589		406	524	
Starvation Cap Reductn	0	0		0	0			0		0	207	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.15	0.30		0.10	0.30			0.48		0.21	0.76	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	57 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	24.3
Intersection LOS:	C
Intersection Capacity Utilization	76.7%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	37	0	19	4	0	2	7	505	8	1	549	35
Future Volume (vph)	37	0	19	4	0	2	7	505	8	1	549	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		0.99			0.98		0.99	1.00		0.98	1.00	
Frt		0.954			0.955			0.998			0.991	
Flt Protected		0.968			0.968		0.950			0.950		
Satd. Flow (prot)	0	1720	0	0	1706	0	1670	3330	0	1753	3468	0
Flt Permitted		0.794			0.754		0.408			0.435		
Satd. Flow (perm)	0	1410	0	0	1314	0	712	3330	0	789	3468	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)	1		19	19		1	7		15	15		7
Peak Hour Factor	0.76	0.76	0.76	0.50	0.50	0.50	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	7%	7%	7%	5%	5%	5%
Adj. Flow (vph)	49	0	25	8	0	4	8	567	9	1	603	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	12	0	8	576	0	1	641	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		8.7			8.6		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.25			0.24		0.69	0.69		0.69	0.69	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.21			0.04		0.02	0.25		0.00	0.27	
Control Delay		12.7			10.8		5.4	5.1		5.0	5.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		12.7			10.8		5.4	5.1		5.0	5.1	
LOS		B			B		A	A		A	A	
Approach Delay		12.7			10.8			5.1			5.1	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		14			2		1	31		0	35	
Queue Length 95th (ft)		27			5		5	58		1	65	
Internal Link Dist (ft)		371			258			2028			704	
Turn Bay Length (ft)							225			250		
Base Capacity (vph)		601			556		712	3330		789	3468	
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		0.12			0.02		0.01	0.17		0.00	0.18	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 35.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.27

Intersection Signal Delay: 5.6

Intersection LOS: A

Intersection Capacity Utilization 37.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

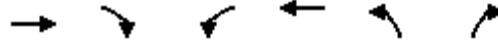


Lanes, Volumes, Timings
15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 Build Alternative 2 Noon Peak
Timing Plan: Noon Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	78	152	447	216	0	0		
Future Volume (vph)	78	152	447	216	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.78		0.65					
Frt	0.911							
Flt Protected			0.950					
Satd. Flow (prot)	1170	0	2837	1592	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1170	0	1838	1592	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		129	129					
Peak Hour Factor	0.71	0.71	0.93	0.93	0.90	0.90		
Heavy Vehicles (%)	2%	2%	9%	9%	2%	2%		
Adj. Flow (vph)	110	214	481	232	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	324	0	481	232	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	20.0			20.0			20.0	20.0
Total Split (s)	77.0			110.0			33.0	20.0
Total Split (%)	59.2%			84.6%			25%	15%
Maximum Green (s)	71.9			105.0			27.9	16.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lag						Lead	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	72.0		48.0	105.5				



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.55		0.37	0.81				
v/c Ratio	0.50		0.46	0.18				
Control Delay	21.3		26.1	3.2				
Queue Delay	0.0		1.1	0.5				
Total Delay	21.3		27.3	3.8				
LOS	C		C	A				
Approach Delay	21.3			19.6				
Approach LOS	C			B				
Queue Length 50th (ft)	162		160	30				
Queue Length 95th (ft)	174		241	m65				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	648		1036	1291				
Starvation Cap Reductn	0		325	718				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.50		0.68	0.40				

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 28 (22%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 20.1 Intersection LOS: C
 Intersection Capacity Utilization 41.9% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	51	0	0	90	37	169	380	27	43	0	403
Future Volume (vph)	20	51	0	0	90	37	169	380	27	43	0	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.77				0.91		0.60	0.94		0.61		0.43
Frt					0.961			0.991				0.850
Flt Protected	0.950						0.950	0.998		0.950		
Satd. Flow (prot)	1488	1620	0	0	1403	0	1259	2493	0	1439	0	2345
Flt Permitted	0.489						0.950	0.998		0.950		
Satd. Flow (perm)	590	1620	0	0	1403	0	757	2453	0	875	0	1014
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	207		358	358		207	244		349	349		244
Peak Hour Factor	0.93	0.93	0.93	0.84	0.84	0.84	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	9%	9%	9%	8%	8%	8%
Adj. Flow (vph)	22	55	0	0	107	44	197	442	31	50	0	469
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	22	55	0	0	151	0	177	493	0	50	0	469
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	40.0	40.0			40.0		23.0	23.0		39.0		39.0
Total Split (%)	30.8%	30.8%			30.8%		17.7%	17.7%		30.0%		30.0%
Maximum Green (s)	33.8	33.8			33.8		17.1	17.1		33.4		33.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
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?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	19.6	19.6			19.6		64.3	64.3		31.0		31.0

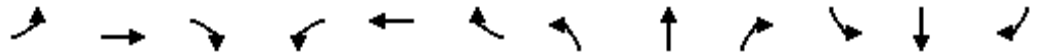
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	22%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: Noon Peak

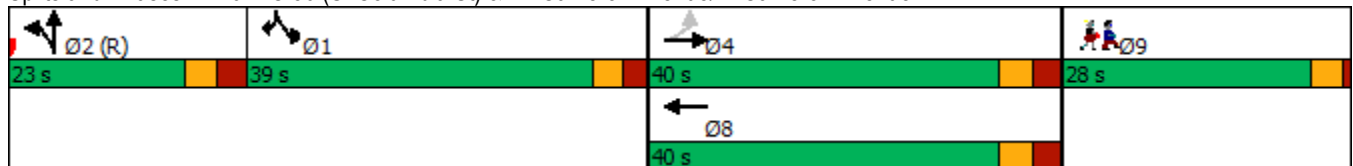


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.15	0.15			0.15		0.49	0.49		0.24		0.24
v/c Ratio	0.25	0.23			0.71		0.28	0.40		0.15		0.84
Control Delay	38.0	33.6			70.0		23.2	23.6		19.0		36.7
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	38.0	33.6			70.0		23.2	23.6		19.0		36.7
LOS	D	C			E		C	C		B		D
Approach Delay		34.8			70.0			23.5				35.0
Approach LOS		C			E			C				C
Queue Length 50th (ft)	17	42			123		96	145		18		196
Queue Length 95th (ft)	m35	84			171		168	207		m35		283
Internal Link Dist (ft)		193			909			746				901
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	158	436			377		623	1233		376		613
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	0.14	0.13			0.40		0.28	0.40		0.13		0.77

Intersection Summary

Area Type: CBD
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 67 (52%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 33.3
 Intersection LOS: C
 Intersection Capacity Utilization 68.8%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

2022 Build Alternative 2 Noon Peak

17: Raleigh Street & E. Cameron Avenue/Country Club Road

Timing Plan: Noon Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	31	64	33	21	86	166	33	76	28	232	111	44
Future Volume (vph)	31	64	33	21	86	166	33	76	28	232	111	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.91		0.90	0.87		0.67	0.95		0.87	0.85	
Frt		0.965			0.901			0.960			0.958	
Flt Protected		0.988		0.950			0.950			0.950		
Satd. Flow (prot)	0	1514	0	1569	1293	0	1505	1450	0	1554	1329	0
Flt Permitted		0.844		0.537			0.654			0.453		
Satd. Flow (perm)	0	1254	0	796	1293	0	697	1450	0	646	1329	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	38		43	43		38	103		33	33		103
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.93	0.93	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	9%	9%	9%	4%	4%	4%
Adj. Flow (vph)	36	74	38	23	95	182	35	82	30	244	117	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	0	23	277	0	35	112	0	244	163	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		16.1		19.8	19.8		16.0	10.5		24.7	21.0	
Actuated g/C Ratio		0.29		0.35	0.35		0.29	0.19		0.44	0.38	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 2 Noon Peak
 Timing Plan: Noon Peak

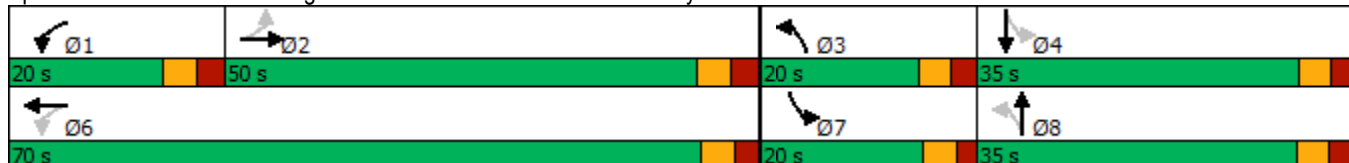


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.41		0.06	0.60		0.11	0.41		0.49	0.33	
Control Delay		25.4		13.7	22.6		12.5	30.0		14.7	19.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		25.4		13.7	22.6		12.5	30.0		14.7	19.0	
LOS		C		B	C		B	C		B	B	
Approach Delay		25.4			22.0			25.8			16.5	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		39		5	82		5	34		42	27	
Queue Length 95th (ft)		110		19	167		25	95		126	118	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		1000		548	1234		553	868		593	795	
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		0.15		0.04	0.22		0.06	0.13		0.41	0.21	

Intersection Summary

Area Type:	CBD
Cycle Length:	125
Actuated Cycle Length:	55.8
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	20.8
Intersection LOS:	C
Intersection Capacity Utilization:	68.1%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road



Lanes, Volumes, Timings
1: Church Street & W. Rosemary Street

2022 Build Alternative 2 PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	24	421	65	58	438	37	47	79	63	24	75	26
Future Volume (vph)	24	421	65	58	438	37	47	79	63	24	75	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	14	12	12	12	12	12	12	12
Grade (%)		1%			-1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.98			0.93			0.95	
Frt		0.983			0.991			0.955			0.972	
Flt Protected		0.998			0.995			0.988			0.990	
Satd. Flow (prot)	0	1710	0	0	1753	0	0	1516	0	0	1556	0
Flt Permitted		0.967			0.906			0.903			0.925	
Satd. Flow (perm)	0	1654	0	0	1589	0	0	1345	0	0	1435	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		964			757			379			430	
Travel Time (s)		32.9			25.8			10.3			11.7	
Confl. Peds. (#/hr)	40		37	37		40	62		43	43		62
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	25	443	68	60	452	38	52	87	69	26	81	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	536	0	0	550	0	0	208	0	0	135	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	19.0	19.0		20.0	20.0		19.0	19.0		19.0	19.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	25.0		25.0	25.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	40.5	40.5		40.4	40.4		20.1	20.1		20.1	20.1	
Yellow Time (s)	3.1	3.1		3.1	3.1		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.4	1.4		1.5	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)		0.5			0.4			0.1			0.1	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	5.0	5.0		6.0	6.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		44.6			44.6			15.4			15.4	
Actuated g/C Ratio		0.64			0.64			0.22			0.22	
v/c Ratio		0.51			0.54			0.71			0.43	
Control Delay		9.9			5.9			36.9			26.6	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 1: Church Street & W. Rosemary Street

2022 Build Alternative 2 PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		9.9			5.9			36.9			26.6	
LOS		A			A			D			C	
Approach Delay		9.9			5.9			36.9			26.6	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)		110			76			78			50	
Queue Length 95th (ft)		217			m94			m92			90	
Internal Link Dist (ft)		884			677			299			350	
Turn Bay Length (ft)												
Base Capacity (vph)		1053			1012			384			410	
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		0.51			0.54			0.54			0.33	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 25 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 13.9
 Intersection LOS: B
 Intersection Capacity Utilization 79.3%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Church Street & W. Rosemary Street



Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	268	49	85	225	39	51	591	86	62	510	274
Future Volume (vph)	230	268	49	85	225	39	51	591	86	62	510	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	12	12	12	9	10	12	12	9	11
Grade (%)		1%			1%			-2%			8%	
Storage Length (ft)	100		0	150		0	75		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
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	1.00
Ped Bike Factor	0.97	0.99		0.96	0.99		0.94	0.95				0.73
Frt		0.977			0.978			0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1426	1612	0	1585	1610	0	1420	2758	0	1514	2725	1310
Flt Permitted	0.187			0.546			0.354			0.249		
Satd. Flow (perm)	272	1612	0	877	1610	0	495	2758	0	397	2725	952
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		757			461			353			239	
Travel Time (s)		25.8			15.7			9.6			6.5	
Confl. Peds. (#/hr)	49		36	36		49	59		83	83		59
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.83	0.83	0.83	0.82	0.82	0.82
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	261	305	56	90	239	41	61	712	104	76	622	334
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	361	0	90	280	0	61	816	0	76	622	334
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	13.0	31.0		32.0	32.0		13.0	23.0		13.0	22.0	13.0
Total Split (s)	24.0	56.0		32.0	32.0		20.0	64.0		20.0	64.0	24.0
Total Split (%)	17.1%	40.0%		22.9%	22.9%		14.3%	45.7%		14.3%	45.7%	17.1%
Maximum Green (s)	18.2	50.0		26.0	26.0		14.2	58.2		14.9	58.2	18.2
Yellow Time (s)	3.0	3.2		3.2	3.2		3.0	3.3		3.0	3.3	3.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.8	2.5		2.1	2.5	2.8
Lost Time Adjust (s)	-0.8	-1.0		-1.0	-1.0		-1.0	-0.8		-0.1	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.8	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	3.0		1.0	3.0	1.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		18.0		19.0	19.0			10.0			9.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effect Green (s)	50.0	50.0		26.0	26.0		75.9	67.3		75.6	69.4	88.4

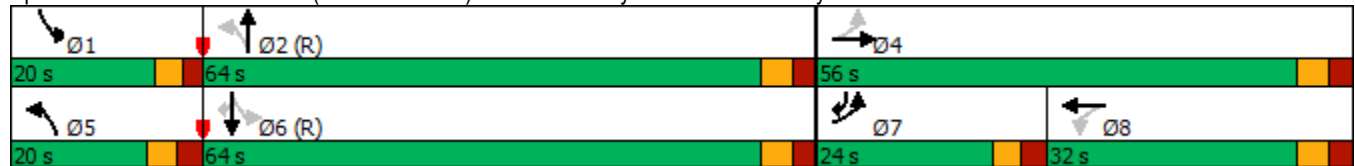


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.36	0.36		0.19	0.19		0.54	0.48		0.54	0.50	0.63
v/c Ratio	1.03	0.63		0.55	0.94		0.19	0.62		0.28	0.46	0.51
Control Delay	100.9	44.5		63.2	90.8		5.5	7.6		16.7	25.5	16.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	2.4		0.0	0.0	0.0
Total Delay	100.9	44.5		63.2	90.8		5.5	10.0		16.7	25.6	16.8
LOS	F	D		E	F		A	A		B	C	B
Approach Delay		68.2			84.1			9.7			22.1	
Approach LOS		E			F			A			C	
Queue Length 50th (ft)	~207	291		72	235		7	51		31	199	137
Queue Length 95th (ft)	#354	402		138	#414		m7	m52		51	230	181
Internal Link Dist (ft)		677			381			273			159	
Turn Bay Length (ft)	100			150			75			150		
Base Capacity (vph)	253	587		169	310		383	1325		346	1350	649
Starvation Cap Reductn	0	0		0	0		0	365		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	49	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.03	0.61		0.53	0.90		0.16	0.85		0.22	0.48	0.51

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 62 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 36.1
 Intersection LOS: D
 Intersection Capacity Utilization 79.2%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street



Lanes, Volumes, Timings
6: Henderson Street & E. Rosemary Street

2022 Build Alternative 2 PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	269	151	12	194	57	62	24	5	23	41	10
Future Volume (vph)	43	269	151	12	194	57	62	24	5	23	41	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	85		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.95			0.98			0.88			0.94	
Frt		0.946			0.971			0.993			0.981	
Flt Protected	0.950				0.998			0.967			0.985	
Satd. Flow (prot)	1593	1514	0	0	1602	0	0	1597	0	0	1549	0
Flt Permitted	0.624				0.978			0.794			0.893	
Satd. Flow (perm)	1023	1514	0	0	1568	0	0	1157	0	0	1355	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		496			1195			366			450	
Travel Time (s)		16.9			40.7			12.5			15.3	
Confl. Peds. (#/hr)	14		34	34		14	73		51	51		73
Peak Hour Factor	0.90	0.90	0.90	0.93	0.93	0.93	0.67	0.67	0.67	0.79	0.79	0.79
Adj. Flow (vph)	48	299	168	13	209	61	93	36	7	29	52	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	467	0	0	283	0	0	136	0	0	94	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.9	15.9		15.9	15.9		17.8	17.8		17.8	17.8	
Total Split (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Total Split (%)	45.7%	45.7%		45.7%	45.7%		54.3%	54.3%		54.3%	54.3%	
Maximum Green (s)	27.1	27.1		27.1	27.1		33.2	33.2		33.2	33.2	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.1	0.0			0.1			0.2			0.2	
Total Lost Time (s)	5.0	4.9			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	50.3	50.3			50.3			13.3			13.3	
Actuated g/C Ratio	0.72	0.72			0.72			0.19			0.19	
v/c Ratio	0.07	0.43			0.25			0.62			0.37	

Lanes, Volumes, Timings
 6: Henderson Street & E. Rosemary Street

2022 Build Alternative 2 PM Peak
 Timing Plan: PM Peak

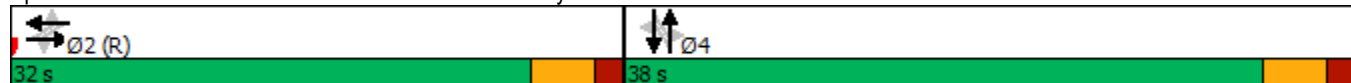


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	6.0	7.1			5.1			28.7			27.1	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	6.0	7.1			5.1			28.7			27.1	
LOS	A	A			A			C			C	
Approach Delay		7.0			5.1			28.7			27.1	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	6	76			54			52			36	
Queue Length 95th (ft)	m22	204			108			41			57	
Internal Link Dist (ft)		416			1115			286			370	
Turn Bay Length (ft)	85											
Base Capacity (vph)	734	1088			1126			545			638	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.07	0.43			0.25			0.25			0.15	

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 14 (20%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 11.2
 Intersection LOS: B
 Intersection Capacity Utilization 46.6%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Henderson Street & E. Rosemary Street



Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 2 PM Peak

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	39	135	61	10	99	56	162	295	23	37	203	27
Future Volume (vph)	39	135	61	10	99	56	162	295	23	37	203	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.97		0.92	1.00		0.98	0.98	
Frt		0.965			0.954			0.989			0.982	
Flt Protected		0.992			0.997		0.950			0.950		
Satd. Flow (prot)	0	1759	0	0	1713	0	1770	1835	0	1770	1787	0
Flt Permitted		0.909			0.976		0.508			0.553		
Satd. Flow (perm)	0	1599	0	0	1675	0	869	1835	0	1010	1787	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		1195			527			363			726	
Travel Time (s)		40.7			18.0			9.9			19.8	
Confl. Peds. (#/hr)	27		14	14		27	52		9	9		52
Peak Hour Factor	0.86	0.86	0.86	0.79	0.79	0.79	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	45	157	71	13	125	71	176	321	25	39	211	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	273	0	0	209	0	176	346	0	39	239	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		17.0	17.0		12.0	15.0		15.0	15.0	
Total Split (s)	30.0	30.0		30.0	30.0		14.0	40.0		26.0	26.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		20.0%	57.1%		37.1%	37.1%	
Maximum Green (s)	25.1	25.1		25.0	25.0		9.2	35.2		21.2	21.2	
Yellow Time (s)	3.0	3.0		3.3	3.3		3.0	3.3		3.1	3.1	
All-Red Time (s)	1.9	1.9		1.7	1.7		1.8	1.5		1.7	1.7	
Lost Time Adjust (s)		0.1			0.0		0.2	0.2		0.2	0.2	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Flash Dont Walk (s)	11.0	11.0		8.0	8.0			6.0		6.0	6.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		16.1			16.1		43.9	43.9		30.9	30.9	
Actuated g/C Ratio		0.23			0.23		0.63	0.63		0.44	0.44	
v/c Ratio		0.74			0.54		0.27	0.30		0.09	0.30	
Control Delay		32.7			28.1		6.3	6.6		15.3	16.1	

Lanes, Volumes, Timings
7: Hillsborough Street & E. Rosemary Street

2022 Build Alternative 2 PM Peak
Timing Plan: PM Peak

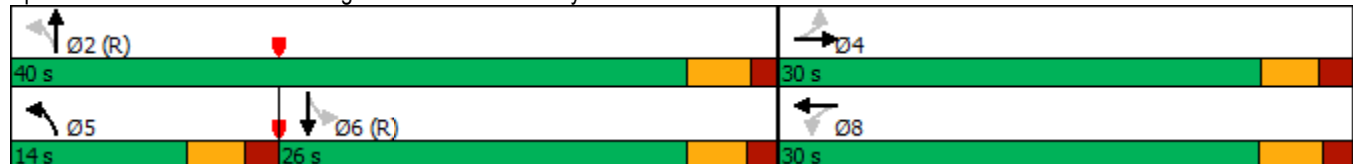


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0		0.0	0.3		0.0	0.0	
Total Delay		32.7			28.1		6.3	6.9		15.3	16.1	
LOS		C			C		A	A		B	B	
Approach Delay		32.7			28.1			6.7			16.0	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		118			79		33	83		9	62	
Queue Length 95th (ft)		137			105		65	143		33	141	
Internal Link Dist (ft)		1115			447			283			646	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		571			598		665	1150		445	788	
Starvation Cap Reductn		0			0		0	348		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.48			0.35		0.26	0.43		0.09	0.30	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	32 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	17.7
Intersection LOS:	B
Intersection Capacity Utilization:	62.5%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 7: Hillsborough Street & E. Rosemary Street



Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

8: Carolina Square Driveway/Church Street & W. Franklin Street

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	461	18	41	565	72	24	48	40	73	59	74
Future Volume (vph)	65	461	18	41	565	72	24	48	40	73	59	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	10	10	10	12	12	12	12	12	12
Grade (%)		2%			-2%			-4%				-3%
Storage Length (ft)	150		0	200		0	0		100	0		0
Storage Lanes	1		0	1		0	0		1	0		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.88	0.96			0.94	0.88		0.86	
Frt		0.994			0.983				0.850		0.952	
Flt Protected	0.950			0.950				0.983			0.983	
Satd. Flow (prot)	1457	1503	0	1501	1493	0	0	1681	1454	0	1418	0
Flt Permitted	0.287			0.395				0.866			0.850	
Satd. Flow (perm)	440	1503	0	547	1493	0	0	1387	1282	0	1188	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			20			25	
Link Distance (ft)		993			294			285			379	
Travel Time (s)		33.9			10.0			9.7			10.3	
Confl. Peds. (#/hr)	124		164	164		124	175		63	63		175
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.81	0.81	0.81	0.91	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	71	507	20	44	608	77	30	59	49	80	65	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	527	0	44	685	0	0	89	49	0	226	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	22.0	22.0		19.0	19.0		29.0	29.0	29.0	27.0	27.0	
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%	41.4%	41.4%	41.4%	
Maximum Green (s)	35.4	35.4		35.4	35.4		22.7	22.7	22.7	23.0	23.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.1	3.1	3.1	3.4	3.4	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2	3.2	2.6	2.6	
Lost Time Adjust (s)	-0.6	-0.6		-0.6	-0.6			-1.3	-1.3		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		6.0	6.0		15.0	15.0	15.0	14.0	14.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	42.0	42.0		42.0	42.0			18.0	18.0		18.0	

Lanes, Volumes, Timings
 8: Carolina Square Driveway/Church Street & W. Franklin Street

2022 Build Alternative 2 PM Peak

Timing Plan: PM Peak

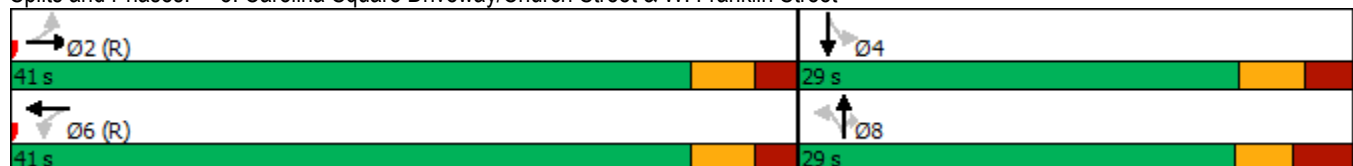


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.26	0.26			0.26
v/c Ratio	0.27	0.58		0.13	0.76			0.25	0.15			0.74
Control Delay	12.2	13.4		10.0	17.4			20.5	18.9			35.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	12.2	13.4		10.0	17.4			20.5	18.9			35.7
LOS	B	B		A	B			C	B			D
Approach Delay		13.3			17.0			19.9				35.7
Approach LOS		B			B			B				D
Queue Length 50th (ft)	13	127		15	323			30	16			101
Queue Length 95th (ft)	46	268		m18	m325			51	32			112
Internal Link Dist (ft)		913			214			205				299
Turn Bay Length (ft)	150			200					100			
Base Capacity (vph)	264	902		328	896			475	439			407
Starvation Cap Reductn	0	0		0	0			0	0			0
Spillback Cap Reductn	0	0		0	0			0	0			0
Storage Cap Reductn	0	0		0	0			0	0			0
Reduced v/c Ratio	0.27	0.58		0.13	0.76			0.19	0.11			0.56

Intersection Summary

Area Type: CBD
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 66 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 18.4
 Intersection LOS: B
 Intersection Capacity Utilization 81.8%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Carolina Square Driveway/Church Street & W. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	430	75	101	514	66	64	560	112	73	413	119
Future Volume (vph)	176	430	75	101	514	66	64	560	112	73	413	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	10	13	9	10	10	9	9	11
Grade (%)		3%			1%			-2%			3%	
Storage Length (ft)	250		0	125		0	475		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.87	0.96		0.87		0.68	0.90	0.96		0.93	0.95	
Frt		0.978				0.850		0.975			0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1412	2934	0	1479	1557	1465	1380	2692	0	1385	2538	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1223	2934	0	1287	1557	997	1246	2692	0	1283	2538	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			20			25			25	
Link Distance (ft)		461			941			981			353	
Travel Time (s)		15.7			32.1			26.8			9.6	
Confl. Peds. (#/hr)	193		152	152		193	67		108	108		67
Peak Hour Factor	0.87	0.87	0.87	0.84	0.84	0.84	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	7%	7%	7%	4%	4%	4%
Adj. Flow (vph)	202	494	86	120	612	79	71	622	124	78	439	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	580	0	120	612	79	71	746	0	78	566	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	28.2		15.0	28.2	15.0	15.0	28.0		15.0	28.1	
Total Split (s)	22.0	36.0		43.0	57.0	15.0	21.0	46.0		15.0	40.0	
Total Split (%)	15.7%	25.7%		30.7%	40.7%	10.7%	15.0%	32.9%		10.7%	28.6%	
Maximum Green (s)	16.6	29.8		37.1	50.8	9.1	15.1	40.1		9.1	34.3	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.3		3.0	3.1	
All-Red Time (s)	2.4	3.2		2.9	3.2	2.9	2.9	2.6		2.9	2.6	
Lost Time Adjust (s)	-0.4	-1.2		-0.9	-1.2	-2.0	-0.9	-0.9		-0.9	-0.7	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.9	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	3.0		1.0	3.0	1.0	1.0	2.0		1.0	2.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	18.0	54.2		15.8	52.0	63.8	11.7	40.4		9.6	40.9	

Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.39		0.11	0.37	0.46	0.08	0.29		0.07	0.29	
v/c Ratio	1.12	0.51		0.72	1.06	0.16	0.62	0.96		0.83	0.76	
Control Delay	149.6	35.9		94.4	88.9	21.3	101.1	25.8		128.2	36.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.8	
Total Delay	149.6	35.9		94.4	88.9	21.3	101.1	25.8		128.2	37.4	
LOS	F	D		F	F	C	F	C		F	D	
Approach Delay		65.3			83.1			32.3			48.4	
Approach LOS		E			F			C			D	
Queue Length 50th (ft)	~222	197		112	~628	31	61	252		75	120	
Queue Length 95th (ft)	#364	297		167	#771	53	m61	m188		m#167	#352	
Internal Link Dist (ft)		381			861			901			273	
Turn Bay Length (ft)	250			125			475			125		
Base Capacity (vph)	181	1136		401	578	494	157	788		98	740	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	40	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.12	0.51		0.30	1.06	0.16	0.45	0.95		0.80	0.81	

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 57.7 Intersection LOS: E
 Intersection Capacity Utilization 85.6% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street



Lanes, Volumes, Timings
10: E. Franklin Street & Henderson Street

2022 Build Alternative 2 PM Peak
Timing Plan: PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↕	
Traffic Volume (vph)	34	601	648	66	148	57
Future Volume (vph)	34	601	648	66	148	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	10	10	11	11
Grade (%)		-2%	2%		3%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.97		0.87	
Frt			0.986		0.962	
Flt Protected		0.997			0.965	
Satd. Flow (prot)	0	3282	2827	0	1388	0
Flt Permitted		0.885			0.965	
Satd. Flow (perm)	0	2901	2827	0	1291	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		20	20		20	
Link Distance (ft)		941	1200		366	
Travel Time (s)		32.1	40.9		12.5	
Confl. Peds. (#/hr)	114			114	88	198
Peak Hour Factor	0.90	0.90	0.93	0.93	0.83	0.83
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Parking (#/hr)						0
Adj. Flow (vph)	38	668	697	71	178	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	706	768	0	247	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	16.2	16.2	21.1		24.1	
Total Split (s)	43.0	43.0	43.0		27.0	
Total Split (%)	61.4%	61.4%	61.4%		38.6%	
Maximum Green (s)	36.8	36.8	36.9		21.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.2	3.2	3.1		2.1	
Lost Time Adjust (s)		-1.2	-1.1		-0.1	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)			7.0		7.0	
Flash Dont Walk (s)			8.0		12.0	
Pedestrian Calls (#/hr)			0		0	
Act Effct Green (s)		44.2	44.2		15.8	
Actuated g/C Ratio		0.63	0.63		0.23	
v/c Ratio		0.39	0.43		0.79	

Lanes, Volumes, Timings
 10: E. Franklin Street & Henderson Street

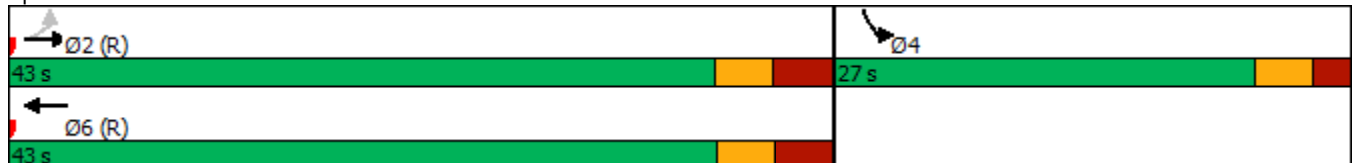


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay		8.9	5.2		41.6	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.9	5.2		41.6	
LOS		A	A		D	
Approach Delay		8.9	5.2		41.6	
Approach LOS		A	A		D	
Queue Length 50th (ft)		187	68		108	
Queue Length 95th (ft)		m177	133		121	
Internal Link Dist (ft)		861	1120		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1831	1784		436	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.39	0.43		0.57	

Intersection Summary

Area Type:	CBD
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	27 (39%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	12.0
Intersection LOS:	B
Intersection Capacity Utilization:	70.7%
ICU Level of Service:	C
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 10: E. Franklin Street & Henderson Street

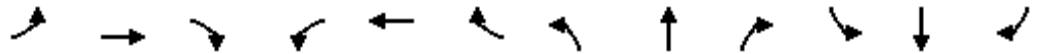


Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

11: Raleigh Street/Hillsborough Street & E. Franklin Street

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	539	231	62	661	240	50	197	23	54	200	13
Future Volume (vph)	51	539	231	62	661	240	50	197	23	54	200	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	9	10	11	12	12	12	10	10	10
Grade (%)		1%			-2%			1%			1%	
Storage Length (ft)	75		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99			0.99		0.99	0.99	
Frt		0.955			0.960			0.988			0.991	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1585	2995	0	1609	3173	0	0	1811	0	1643	1701	0
Flt Permitted	0.252			0.299				0.701		0.398		
Satd. Flow (perm)	419	2995	0	504	3173	0	0	1269	0	684	1701	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		20			30			25			25	
Link Distance (ft)		1200			1013			995			363	
Travel Time (s)		40.9			23.0			27.1			9.9	
Confl. Peds. (#/hr)	16		16	16		16	58		7	7		58
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88
Adj. Flow (vph)	56	592	254	67	718	261	54	212	25	61	227	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	846	0	67	979	0	0	291	0	61	242	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		D.Pm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		6	6		7	4		4	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		14.0	30.0		30.0	29.0	
Total Split (s)	79.0	79.0		79.0	79.0		14.0	61.0		61.0	47.0	
Total Split (%)	56.4%	56.4%		56.4%	56.4%		10.0%	43.6%		43.6%	33.6%	
Maximum Green (s)	73.7	73.7		73.7	73.7		7.8	54.6		54.6	40.6	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.1		3.1	3.1	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.3		3.3	3.3	
Lost Time Adjust (s)	-0.3	-0.3		-0.3	-0.3			-1.4		-1.4	-1.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								16.0		16.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	94.5	94.5		94.5	94.5			35.5		35.5	35.5	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.25		0.25	0.25	

Lanes, Volumes, Timings
 11: Raleigh Street/Hillsborough Street & E. Franklin Street

2022 Build Alternative 2 PM Peak
 Timing Plan: PM Peak

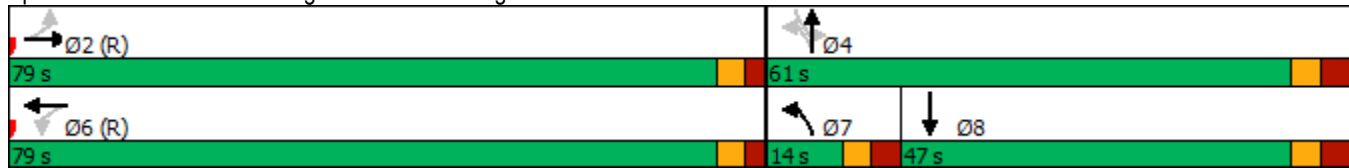


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.20	0.42		0.20	0.46			0.90		0.35	0.56	
Control Delay	6.0	4.8		12.4	12.6			80.5		40.8	43.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.9	
Total Delay	6.0	4.8		12.4	12.6			80.5		40.8	44.2	
LOS	A	A		B	B			F		D	D	
Approach Delay		4.9			12.6			80.5			43.5	
Approach LOS		A			B			F			D	
Queue Length 50th (ft)	7	66		21	205			258		43	170	
Queue Length 95th (ft)	m20	97		57	318			341		72	213	
Internal Link Dist (ft)		1120			933			915			283	
Turn Bay Length (ft)	75			75						100		
Base Capacity (vph)	282	2020		339	2140			507		273	521	
Starvation Cap Reductn	0	0		0	0			0		0	105	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.20	0.42		0.20	0.46			0.57		0.22	0.58	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 73 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 21.3 Intersection LOS: C
 Intersection Capacity Utilization 84.3% ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Raleigh Street/Hillsborough Street & E. Franklin Street



Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: PM Peak



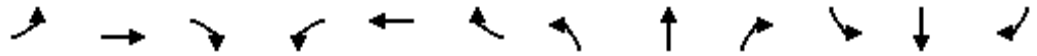
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	96	2	18	34	1	8	14	906	13	11	656	77
Future Volume (vph)	96	2	18	34	1	8	14	906	13	11	656	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			1%			2%			-4%	
Storage Length (ft)	0		0	0		0	225		0	250		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		0.99			0.99		0.99	1.00		0.99	1.00	
Frt		0.979			0.974			0.998			0.984	
Flt Protected		0.960			0.962		0.950			0.950		
Satd. Flow (prot)	0	1794	0	0	1732	0	1735	3459	0	1787	3504	0
Flt Permitted		0.723			0.753		0.344			0.231		
Satd. Flow (perm)	0	1349	0	0	1339	0	625	3459	0	429	3504	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		451			338			2108			784	
Travel Time (s)		12.3			11.5			41.1			15.3	
Confl. Peds. (#/hr)	2		20	20		2	7		28	28		7
Peak Hour Factor	0.89	0.89	0.89	0.75	0.75	0.75	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	108	2	20	45	1	11	16	1053	15	12	705	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	57	0	16	1068	0	12	788	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		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)	31.0	31.0		14.0	14.0		28.0	28.0		28.0	28.0	
Total Split (s)	20.0	20.0		20.0	20.0		60.0	60.0		60.0	60.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	14.0	14.0		13.9	13.9		54.0	54.0		54.5	54.5	
Yellow Time (s)	3.5	3.5		3.0	3.0		4.5	4.5		4.0	4.0	
All-Red Time (s)	2.5	2.5		3.1	3.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-0.5	-0.5	
Total Lost Time (s)		5.0			5.1		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0					7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0					9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0					0	0		0	0	
Act Effct Green (s)		10.9			10.8		27.8	27.8		27.8	27.8	
Actuated g/C Ratio		0.25			0.24		0.63	0.63		0.63	0.63	

Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.39			0.17		0.04	0.49		0.04	0.36	
Control Delay		19.8			16.7		5.8	7.5		6.0	6.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		19.8			16.7		5.8	7.5		6.0	6.5	
LOS		B			B		A	A		A	A	
Approach Delay		19.8			16.7			7.5			6.4	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		27			11		2	81		1	53	
Queue Length 95th (ft)		77			32		9	142		8	102	
Internal Link Dist (ft)		371			258			2028			704	
Turn Bay Length (ft)							225			250		
Base Capacity (vph)		475			468		619	3427		425	3471	
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		0.27			0.12		0.03	0.31		0.03	0.23	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	44.2
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	8.1
Intersection LOS:	A
Intersection Capacity Utilization:	47.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway



Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue

2022 Build Alternative 2 PM Peak
 Timing Plan: PM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Lane Configurations	↻		↻↻	↻				
Traffic Volume (vph)	148	220	539	359	0	0		
Future Volume (vph)	148	220	539	359	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	12	11	12	12	12		
Grade (%)	3%			-3%	0%			
Storage Length (ft)		0	75		0	0		
Storage Lanes		0	0		0	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00		
Ped Bike Factor	0.84		0.74					
Frt	0.919							
Flt Protected			0.950					
Satd. Flow (prot)	1269	0	2890	1622	0	0		
Flt Permitted			0.950					
Satd. Flow (perm)	1269	0	2147	1622	0	0		
Right Turn on Red		No				No		
Satd. Flow (RTOR)								
Link Speed (mph)	25			25	25			
Link Distance (ft)	391			120	794			
Travel Time (s)	30.0			10.7	21.7			
Confl. Peds. (#/hr)		70	70					
Peak Hour Factor	0.93	0.93	0.96	0.96	0.90	0.90		
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%		
Adj. Flow (vph)	159	237	561	374	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	396	0	561	374	0	0		
Turn Type	NA		Prot	NA				
Protected Phases	2		14	6			1	4
Permitted Phases								
Detector Phase	2		14	6				
Switch Phase								
Minimum Initial (s)	10.0			10.0			7.0	7.0
Minimum Split (s)	20.1			20.0			20.0	21.0
Total Split (s)	44.0			102.0			58.0	38.0
Total Split (%)	31.4%			72.9%			41%	27%
Maximum Green (s)	38.9			97.0			52.9	34.0
Yellow Time (s)	3.0			3.3			3.0	3.0
All-Red Time (s)	2.1			1.7			2.1	1.0
Lost Time Adjust (s)	-0.1			0.0				
Total Lost Time (s)	5.0			5.0				
Lead/Lag	Lead						Lag	
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0			1.0			4.0	0.2
Recall Mode	None			C-Max			C-Max	None
Walk Time (s)	7.0							7.0
Flash Dont Walk (s)	4.0							9.0
Pedestrian Calls (#/hr)	0							0
Act Effct Green (s)	57.0		73.0	124.0				

Lanes, Volumes, Timings
 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø4
Actuated g/C Ratio	0.41		0.52	0.89				
v/c Ratio	0.77		0.37	0.26				
Control Delay	48.1		13.4	0.8				
Queue Delay	0.0		0.1	0.7				
Total Delay	48.1		13.5	1.5				
LOS	D		B	A				
Approach Delay	48.1			8.7				
Approach LOS	D			A				
Queue Length 50th (ft)	324		80	6				
Queue Length 95th (ft)	447		m113	m37				
Internal Link Dist (ft)	311			40	714			
Turn Bay Length (ft)			75					
Base Capacity (vph)	517		2063	1436				
Starvation Cap Reductn	0		520	733				
Spillback Cap Reductn	0		0	0				
Storage Cap Reductn	0		0	0				
Reduced v/c Ratio	0.77		0.36	0.53				

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 104 (74%), Referenced to phase 1:WBL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 20.4
 Intersection LOS: C
 Intersection Capacity Utilization 52.0%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: NC 86 (Pittsboro St) & W. Cameron Avenue



Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	122	0	0	166	51	220	663	59	119	0	500
Future Volume (vph)	20	122	0	0	166	51	220	663	59	119	0	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	10	10	10	11	11	12
Grade (%)		1%			-1%			1%			2%	
Storage Length (ft)	100		0	0		0	0		0	310		0
Storage Lanes	1		0	0		0	1		0	1		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	0.88
Ped Bike Factor	0.86				0.93		0.68	0.94		0.79		0.60
Frt					0.968			0.988				0.850
Flt Protected	0.950						0.950	0.999		0.950		
Satd. Flow (prot)	1532	1668	0	0	1493	0	1295	2542	0	1453	0	2367
Flt Permitted	0.298						0.950	0.999		0.950		
Satd. Flow (perm)	411	1668	0	0	1493	0	884	2519	0	1147	0	1418
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		273			989			826				981
Travel Time (s)		10.7			57.6			22.5				26.8
Confl. Peds. (#/hr)	157		172	172		157	111		248	248		111
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.87	0.87	0.87	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	6%	6%	6%	7%	7%	7%
Adj. Flow (vph)	22	134	0	0	184	57	253	762	68	140	0	588
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	22	134	0	0	241	0	228	855	0	140	0	588
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		4			8		2	2		1		1
Permitted Phases	4									1		1
Detector Phase	4	4			8		2	2		1		1
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0			31.0		18.0	18.0		26.0		26.0
Total Split (s)	31.0	31.0			31.0		47.0	47.0		34.0		34.0
Total Split (%)	22.1%	22.1%			22.1%		33.6%	33.6%		24.3%		24.3%
Maximum Green (s)	24.8	24.8			24.8		41.1	41.1		28.4		28.4
Yellow Time (s)	3.2	3.2			3.2		3.1	3.1		3.0		3.0
All-Red Time (s)	3.0	3.0			3.0		2.8	2.8		2.6		2.6
Lost Time Adjust (s)	-1.2	-1.2			-1.2		-0.9	-0.9		-0.6		-0.6
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	None	None			None		C-Max	C-Max		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			17.0		5.0	5.0		13.0		13.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	25.0	25.0			25.0		47.5	47.5		52.5		52.5

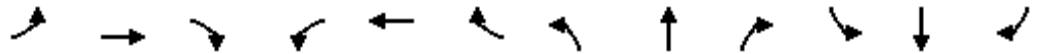
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	20%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lanes, Volumes, Timings

2022 Build Alternative 2 PM Peak

16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Timing Plan: PM Peak

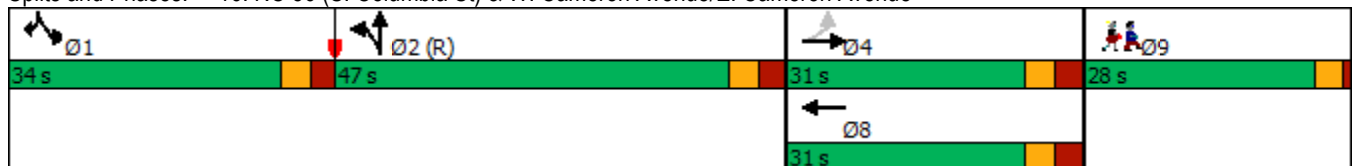


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.18	0.18			0.18		0.34	0.34		0.38		0.38
v/c Ratio	0.30	0.45			0.91		0.52	0.99		0.26		0.66
Control Delay	23.8	20.4			91.7		41.6	74.3		18.5		27.7
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	23.8	20.4			91.7		41.6	74.3		18.5		27.7
LOS	C	C			F		D	E		B		C
Approach Delay		20.9			91.7			67.4			25.9	
Approach LOS		C			F			E			C	
Queue Length 50th (ft)	11	74			216		175	410		83		257
Queue Length 95th (ft)	m15	m102			#367		264	#537		m105		323
Internal Link Dist (ft)		193			909			746			901	
Turn Bay Length (ft)	100									310		
Base Capacity (vph)	76	309			277		439	862		545		887
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	0.29	0.43			0.87		0.52	0.99		0.26		0.66

Intersection Summary

Area Type: CBD
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 23 (16%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 53.1 Intersection LOS: D
 Intersection Capacity Utilization 79.3% ICU Level of Service D
 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: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue



Lane Group	Ø9
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 2 PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	27	162	47	35	129	179	55	92	61	262	186	53
Future Volume (vph)	27	162	47	35	129	179	55	92	61	262	186	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			3%			-2%				1%
Storage Length (ft)	0		0	150		0	125		0	75		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	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94			0.88			0.88		0.82	0.88	
Frt		0.973			0.913			0.940			0.967	
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1571	0	1569	1329	0	1563	1358	0	1585	1419	0
Flt Permitted		0.924		0.374			0.586			0.450		
Satd. Flow (perm)	0	1441	0	618	1329	0	964	1358	0	613	1419	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		598			651			409				995
Travel Time (s)		16.3			17.8			11.2				27.1
Confl. Peds. (#/hr)	39		37	37		39	107		60	60		107
Peak Hour Factor	0.75	0.75	0.75	0.89	0.89	0.89	0.89	0.89	0.89	0.84	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Adj. Flow (vph)	36	216	63	39	145	201	62	103	69	312	221	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	0	39	346	0	62	172	0	312	284	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		13.0	19.0		13.0	19.0		12.0	16.0	
Total Split (s)	50.0	50.0		20.0	70.0		20.0	35.0		20.0	35.0	
Total Split (%)	40.0%	40.0%		16.0%	56.0%		16.0%	28.0%		16.0%	28.0%	
Maximum Green (s)	43.9	43.9		14.4	64.4		14.7	29.7		15.1	29.9	
Yellow Time (s)	3.3	3.3		3.0	3.1		3.0	3.1		3.0	3.1	
All-Red Time (s)	2.8	2.8		2.6	2.5		2.3	2.2		1.9	2.0	
Lost Time Adjust (s)		-1.1		-0.6	-0.6		-0.3	-0.3		0.1	-0.1	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	7.0	7.0			9.0			9.0			6.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		24.4		30.8	30.8		23.9	15.6		36.5	26.7	
Actuated g/C Ratio		0.31		0.39	0.39		0.31	0.20		0.47	0.34	

Lanes, Volumes, Timings
 17: Raleigh Street & E. Cameron Avenue/Country Club Road

2022 Build Alternative 2 PM Peak
 Timing Plan: PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.70		0.11	0.66		0.17	0.64		0.65	0.59	
Control Delay		35.1		15.1	25.8		17.6	43.4		25.6	32.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		35.1		15.1	25.8		17.6	43.4		25.6	32.9	
LOS		D		B	C		B	D		C	C	
Approach Delay		35.1			24.7			36.5			29.1	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)		146		11	128		19	84		111	132	
Queue Length 95th (ft)		213		32	248		51	172		#213	248	
Internal Link Dist (ft)		518			571			329			915	
Turn Bay Length (ft)				150			125			75		
Base Capacity (vph)		904		448	1088		518	568		489	596	
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		0.35		0.09	0.32		0.12	0.30		0.64	0.48	

Intersection Summary

Area Type: CBD
 Cycle Length: 125
 Actuated Cycle Length: 78.2
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 30.4
 Intersection LOS: C
 Intersection Capacity Utilization 79.1%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Raleigh Street & E. Cameron Avenue/Country Club Road





Appendix E – Synchro Unsignalized HCM Analysis Output

2020 Existing Base Year

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	245	249	24	1	1
Future Vol, veh/h	16	245	249	24	1	1
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	272	277	27	2	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	320	0	-	0	615 307
Stage 1	-	-	-	-	307 -
Stage 2	-	-	-	-	308 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1240	-	-	-	455 733
Stage 1	-	-	-	-	746 -
Stage 2	-	-	-	-	745 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1221	-	-	-	435 722
Mov Cap-2 Maneuver	-	-	-	-	527 -
Stage 1	-	-	-	-	724 -
Stage 2	-	-	-	-	734 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1221	-	-	-	609
HCM Lane V/C Ratio	0.015	-	-	-	0.007
HCM Control Delay (s)	8	-	-	-	11
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 6th TWSC
 4: Wallace Parking Deck Ent, Exit 1 & E. Rosemary Street

2020 Existing AM Peak
 Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	189	57	56	268	5	3
Future Vol, veh/h	189	57	56	268	5	3
Conflicting Peds, #/hr	0	12	12	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	210	63	62	298	10	6

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	285	0	676 254
Stage 1	-	-	-	-	254 -
Stage 2	-	-	-	-	422 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1277	-	419 785
Stage 1	-	-	-	-	788 -
Stage 2	-	-	-	-	662 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1262	-	394 776
Mov Cap-2 Maneuver	-	-	-	-	478 -
Stage 1	-	-	-	-	742 -
Stage 2	-	-	-	-	662 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	558	-	-	1262	-
HCM Lane V/C Ratio	0.029	-	-	0.049	-
HCM Control Delay (s)	11.6	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	189	3	5	321	3	3
Future Vol, veh/h	189	3	5	321	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	210	3	6	357	6	6

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	213	0	581
Stage 1	-	-	-	-	212
Stage 2	-	-	-	-	369
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1357	-	476
Stage 1	-	-	-	-	823
Stage 2	-	-	-	-	699
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1357	-	473
Mov Cap-2 Maneuver	-	-	-	-	554
Stage 1	-	-	-	-	818
Stage 2	-	-	-	-	699

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	664	-	-	1357	-
HCM Lane V/C Ratio	0.018	-	-	0.004	-
HCM Control Delay (s)	10.5	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 1.5

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	2	3	37	423	3	9	715	2	6	53
Future Vol, veh/h	2	3	37	423	3	9	715	2	6	53
Conflicting Peds, #/hr	0	0	1	0	15	15	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	48	48	93	93	93	89	89	89	76	76
Heavy Vehicles, %	10	10	7	7	7	5	5	5	8	8
Mvmt Flow	4	6	40	455	3	10	803	2	8	70

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	978	244	806	0
Stage 1	552	-	-	-
Stage 2	426	-	-	-
Critical Hdwy	8.1	7.3	4.24	-
Critical Hdwy Stg 1	7.1	-	-	-
Critical Hdwy Stg 2	7.1	-	-	-
Follow-up Hdwy	3.6	3.4	2.27	-
Pot Cap-1 Maneuver	174	723	783	-
Stage 1	438	-	-	-
Stage 2	530	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	139	713	782	-
Mov Cap-2 Maneuver	139	-	-	-
Stage 1	410	-	-	-
Stage 2	455	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	13.2	0.8	0.1	15.1
HCM LOS	B			C

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	782	-	-	470	438	1049	-	-
HCM Lane V/C Ratio	0.051	-	-	0.071	0.183	0.01	-	-
HCM Control Delay (s)	9.8	-	-	13.2	15.1	8.5	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.7	0	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	
Traffic Vol, veh/h	32	321	242	30	12	17
Future Vol, veh/h	32	321	242	30	12	17
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	90	90	90	90	56	56
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	357	269	33	21	30

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	318	0	-	0	731 302
Stage 1	-	-	-	-	302 -
Stage 2	-	-	-	-	429 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1242	-	-	-	389 738
Stage 1	-	-	-	-	750 -
Stage 2	-	-	-	-	657 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1223	-	-	-	366 727
Mov Cap-2 Maneuver	-	-	-	-	466 -
Stage 1	-	-	-	-	717 -
Stage 2	-	-	-	-	647 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1223	-	-	-	590
HCM Lane V/C Ratio	0.029	-	-	-	0.088
HCM Control Delay (s)	8	-	-	-	11.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

HCM 6th TWSC
 4: Wallace Parking Deck Ent, Exit 1 & E. Rosemary Street

2020 Existing Noon Peak
 Timing Plan: Noon Peak

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	295	38	33	255	17	23
Future Vol, veh/h	295	38	33	255	17	23
Conflicting Peds, #/hr	0	12	12	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	59	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	328	42	37	283	29	39

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	382	0	718 361
Stage 1	-	-	-	-	361 -
Stage 2	-	-	-	-	357 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1176	-	396 684
Stage 1	-	-	-	-	705 -
Stage 2	-	-	-	-	708 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1163	-	379 676
Mov Cap-2 Maneuver	-	-	-	-	480 -
Stage 1	-	-	-	-	675 -
Stage 2	-	-	-	-	708 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	576	-	-	1163	-
HCM Lane V/C Ratio	0.118	-	-	0.032	-
HCM Control Delay (s)	12.1	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	315	3	1	276	12	26
Future Vol, veh/h	315	3	1	276	12	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	350	3	1	307	17	36

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	353	0	661	352
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	309	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1206	-	427	692
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1206	-	427	692
Mov Cap-2 Maneuver	-	-	-	-	527	-
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	745	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	630	-	-	1206	-
HCM Lane V/C Ratio	0.084	-	-	0.001	-
HCM Control Delay (s)	11.2	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection

Int Delay, s/veh 2.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	8	9	43	439	4	9	506	6	7	58
Future Vol, veh/h	8	9	43	439	4	9	506	6	7	58
Conflicting Peds, #/hr	0	0	6	0	41	41	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	75	75	93	93	93	87	87	87	75	75
Heavy Vehicles, %	2	2	7	7	7	5	5	5	8	8
Mvmt Flow	11	12	46	472	4	10	582	7	9	77

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	923	287	595	0
Stage 1	607	-	-	-
Stage 2	316	-	-	-
Critical Hdwy	7.94	7.14	4.24	-
Critical Hdwy Stg 1	6.94	-	-	-
Critical Hdwy Stg 2	6.94	-	-	-
Follow-up Hdwy	3.52	3.32	2.27	-
Pot Cap-1 Maneuver	203	698	944	-
Stage 1	421	-	-	-
Stage 2	646	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	159	666	939	-
Mov Cap-2 Maneuver	159	-	-	-
Stage 1	385	-	-	-
Stage 2	557	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	14.6	0.8	0.2	13.3
HCM LOS	B			B

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	939	-	-	444	522	984	-	-
HCM Lane V/C Ratio	0.049	-	-	0.153	0.169	0.011	-	-
HCM Control Delay (s)	9	-	-	14.6	13.3	8.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.6	0	-	-

HCM 6th TWSC
 3: E. Rosemary Street & Rosemary Deck Ent/Exit

2020 Existing PM Peak
 Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↘	
Traffic Vol, veh/h	7	416	263	5	17	33
Future Vol, veh/h	7	416	263	5	17	33
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	92	92	92	92	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	452	286	5	20	40

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	307	0	-	0	773 305
Stage 1	-	-	-	-	305 -
Stage 2	-	-	-	-	468 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1254	-	-	-	367 735
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	630 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1235	-	-	-	354 724
Mov Cap-2 Maneuver	-	-	-	-	464 -
Stage 1	-	-	-	-	732 -
Stage 2	-	-	-	-	621 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1235	-	-	-	608
HCM Lane V/C Ratio	0.006	-	-	-	0.099
HCM Control Delay (s)	7.9	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 6th TWSC
4: Wallace Parking Deck Ent, Exit 1 & E. Rosemary Street

2020 Existing PM Peak
Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	402	31	25	253	15	60
Future Vol, veh/h	402	31	25	253	15	60
Conflicting Peds, #/hr	0	12	12	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-2	0	-
Peak Hour Factor	92	92	92	92	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	437	34	27	275	18	73

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	483	0	795
Stage 1	-	-	-	-	466
Stage 2	-	-	-	-	329
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1080	-	357
Stage 1	-	-	-	-	632
Stage 2	-	-	-	-	729
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1068	-	344
Mov Cap-2 Maneuver	-	-	-	-	453
Stage 1	-	-	-	-	609
Stage 2	-	-	-	-	729

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	556	-	-	1068	-
HCM Lane V/C Ratio	0.165	-	-	0.025	-
HCM Control Delay (s)	12.7	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	458	0	3	258	20	35
Future Vol, veh/h	458	0	3	258	20	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	0	-
Peak Hour Factor	92	92	92	92	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	498	0	3	280	27	47

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	498	0	784
Stage 1	-	-	-	-	498
Stage 2	-	-	-	-	286
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1066	-	362
Stage 1	-	-	-	-	611
Stage 2	-	-	-	-	763
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1066	-	361
Mov Cap-2 Maneuver	-	-	-	-	469
Stage 1	-	-	-	-	609
Stage 2	-	-	-	-	763

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	-	-	1066	-
HCM Lane V/C Ratio	0.138	-	-	0.003	-
HCM Control Delay (s)	12.9	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection

Int Delay, s/veh 7.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	24	21	48	755	23	25	708	6	5	98
Future Vol, veh/h	24	21	48	755	23	25	708	6	5	98
Conflicting Peds, #/hr	0	0	7	0	32	32	0	7	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	87	87	83	83	83	88	88	88	92	92
Heavy Vehicles, %	2	2	3	3	3	3	3	3	5	5
Mvmt Flow	28	24	58	910	28	28	805	7	5	107

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1533	509	819	413
Stage 1	1072	-	-	-
Stage 2	461	-	-	-
Critical Hdwy	7.94	7.14	4.16	6.7
Critical Hdwy Stg 1	6.94	-	-	-
Critical Hdwy Stg 2	6.94	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	3.35
Pot Cap-1 Maneuver	67	495	799	600
Stage 1	209	-	-	-
Stage 2	522	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	46	476	794	596
Mov Cap-2 Maneuver	46	-	-	-
Stage 1	188	-	-	-
Stage 2	405	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	85.5	0.6	0.4	21.4
HCM LOS	F			C

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	794	-	-	144	335	679	-	-
HCM Lane V/C Ratio	0.073	-	-	0.774	0.347	0.042	-	-
HCM Control Delay (s)	9.9	-	-	85.5	21.4	10.5	-	-
HCM Lane LOS	A	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	4.7	1.5	0.1	-	-



2022 Without Site

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	259	259	24	1	1
Future Vol, veh/h	16	259	259	24	1	1
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	288	288	27	2	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	331	0	-	0	642 318
Stage 1	-	-	-	-	318 -
Stage 2	-	-	-	-	324 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1228	-	-	-	438 723
Stage 1	-	-	-	-	738 -
Stage 2	-	-	-	-	733 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1209	-	-	-	419 712
Mov Cap-2 Maneuver	-	-	-	-	515 -
Stage 1	-	-	-	-	716 -
Stage 2	-	-	-	-	722 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1209	-	-	-	598
HCM Lane V/C Ratio	0.015	-	-	-	0.007
HCM Control Delay (s)	8	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	202	58	57	278	5	3
Future Vol, veh/h	202	58	57	278	5	3
Conflicting Peds, #/hr	0	12	12	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	224	64	63	309	10	6

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	300	0	703
Stage 1	-	-	-	-	268
Stage 2	-	-	-	-	435
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1261	-	404
Stage 1	-	-	-	-	777
Stage 2	-	-	-	-	653
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1247	-	379
Mov Cap-2 Maneuver	-	-	-	-	466
Stage 1	-	-	-	-	730
Stage 2	-	-	-	-	653

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	545	-	-	1247	-
HCM Lane V/C Ratio	0.029	-	-	0.051	-
HCM Control Delay (s)	11.8	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	202	3	5	332	3	3
Future Vol, veh/h	202	3	5	332	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	224	3	6	369	6	6

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	227	0	607
Stage 1	-	-	-	-	226
Stage 2	-	-	-	-	381
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1341	-	460
Stage 1	-	-	-	-	812
Stage 2	-	-	-	-	691
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1341	-	457
Mov Cap-2 Maneuver	-	-	-	-	543
Stage 1	-	-	-	-	807
Stage 2	-	-	-	-	691

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	651	-	-	1341	-
HCM Lane V/C Ratio	0.018	-	-	0.004	-
HCM Control Delay (s)	10.6	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 1.5

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	2	3	38	438	3	9	758	2	6	54
Future Vol, veh/h	2	3	38	438	3	9	758	2	6	54
Conflicting Peds, #/hr	0	0	1	0	15	15	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	48	48	93	93	93	89	89	89	76	76
Heavy Vehicles, %	10	10	7	7	7	5	5	5	8	8
Mvmt Flow	4	6	41	471	3	10	852	2	8	71

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1020	252	855	0
Stage 1	570	-	-	-
Stage 2	450	-	-	-
Critical Hdwy	8.1	7.3	4.24	-
Critical Hdwy Stg 1	7.1	-	-	-
Critical Hdwy Stg 2	7.1	-	-	-
Follow-up Hdwy	3.6	3.4	2.27	-
Pot Cap-1 Maneuver	161	714	749	-
Stage 1	426	-	-	-
Stage 2	511	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	127	704	748	-
Mov Cap-2 Maneuver	127	-	-	-
Stage 1	397	-	-	-
Stage 2	435	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	13.7	0.8	0.1	15.7
HCM LOS	B			C

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	748	-	-	449	417	1035	-	-
HCM Lane V/C Ratio	0.055	-	-	0.074	0.196	0.01	-	-
HCM Control Delay (s)	10.1	-	-	13.7	15.7	8.5	-	-
HCM Lane LOS	B	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.7	0	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	336	250	31	12	17
Future Vol, veh/h	32	336	250	31	12	17
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	90	90	90	90	56	56
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	373	278	34	21	30

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	328	0	-	0	756 311
Stage 1	-	-	-	-	311 -
Stage 2	-	-	-	-	445 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1232	-	-	-	376 729
Stage 1	-	-	-	-	743 -
Stage 2	-	-	-	-	646 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1213	-	-	-	354 718
Mov Cap-2 Maneuver	-	-	-	-	456 -
Stage 1	-	-	-	-	710 -
Stage 2	-	-	-	-	636 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1213	-	-	-	580
HCM Lane V/C Ratio	0.029	-	-	-	0.089
HCM Control Delay (s)	8.1	-	-	-	11.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	38	33	264	17	23
Future Vol, veh/h	310	38	33	264	17	23
Conflicting Peds, #/hr	0	12	12	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	59	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	344	42	37	293	29	39

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	398	0	744 377
Stage 1	-	-	-	-	377 -
Stage 2	-	-	-	-	367 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1161	-	382 670
Stage 1	-	-	-	-	694 -
Stage 2	-	-	-	-	701 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1148	-	366 662
Mov Cap-2 Maneuver	-	-	-	-	470 -
Stage 1	-	-	-	-	664 -
Stage 2	-	-	-	-	701 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	564	-	-	1148	-
HCM Lane V/C Ratio	0.12	-	-	0.032	-
HCM Control Delay (s)	12.3	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	330	3	1	285	12	26
Future Vol, veh/h	330	3	1	285	12	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	367	3	1	317	17	36

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	370	0	688 369
Stage 1	-	-	-	-	369 -
Stage 2	-	-	-	-	319 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1189	-	412 677
Stage 1	-	-	-	-	699 -
Stage 2	-	-	-	-	737 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1189	-	412 677
Mov Cap-2 Maneuver	-	-	-	-	515 -
Stage 1	-	-	-	-	698 -
Stage 2	-	-	-	-	737 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	616	-	-	1189	-
HCM Lane V/C Ratio	0.086	-	-	0.001	-
HCM Control Delay (s)	11.4	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection

Int Delay, s/veh 2.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	8	9	44	470	4	9	538	6	7	59
Future Vol, veh/h	8	9	44	470	4	9	538	6	7	59
Conflicting Peds, #/hr	0	0	6	0	41	41	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	75	75	93	93	93	87	87	87	75	75
Heavy Vehicles, %	2	2	7	7	7	5	5	5	8	8
Mvmt Flow	11	12	47	505	4	10	618	7	9	79

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	976	304	631	0
Stage 1	642	-	-	-
Stage 2	334	-	-	-
Critical Hdwy	7.94	7.14	4.24	-
Critical Hdwy Stg 1	6.94	-	-	-
Critical Hdwy Stg 2	6.94	-	-	-
Follow-up Hdwy	3.52	3.32	2.27	-
Pot Cap-1 Maneuver	184	680	914	-
Stage 1	399	-	-	-
Stage 2	630	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	143	648	909	-
Mov Cap-2 Maneuver	143	-	-	-
Stage 1	363	-	-	-
Stage 2	540	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	15.3	0.8	0.1	13.8
HCM LOS	C			B

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	909	-	-	420	499	956	-	-
HCM Lane V/C Ratio	0.052	-	-	0.165	0.179	0.011	-	-
HCM Control Delay (s)	9.2	-	-	15.3	13.8	8.8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0.6	0	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	429	275	5	17	34
Future Vol, veh/h	7	429	275	5	17	34
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	92	92	92	92	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	466	299	5	20	41

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	320	0	-	0	800 318
Stage 1	-	-	-	-	318 -
Stage 2	-	-	-	-	482 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1240	-	-	-	354 723
Stage 1	-	-	-	-	738 -
Stage 2	-	-	-	-	621 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1221	-	-	-	341 712
Mov Cap-2 Maneuver	-	-	-	-	453 -
Stage 1	-	-	-	-	722 -
Stage 2	-	-	-	-	612 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1221	-	-	-	598
HCM Lane V/C Ratio	0.006	-	-	-	0.103
HCM Control Delay (s)	8	-	-	-	11.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 6th TWSC
 4: Wallace Parking Deck Ent, Exit 1 & E. Rosemary Street

2022 No-Build PM Peak
 Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	415	31	26	265	15	61
Future Vol, veh/h	415	31	26	265	15	61
Conflicting Peds, #/hr	0	12	12	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-2	0	-
Peak Hour Factor	92	92	92	92	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	451	34	28	288	18	74

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	497	0	824
Stage 1	-	-	-	-	480
Stage 2	-	-	-	-	344
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1067	-	343
Stage 1	-	-	-	-	622
Stage 2	-	-	-	-	718
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1055	-	330
Mov Cap-2 Maneuver	-	-	-	-	442
Stage 1	-	-	-	-	598
Stage 2	-	-	-	-	718

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	546	-	-	1055	-
HCM Lane V/C Ratio	0.17	-	-	0.027	-
HCM Control Delay (s)	12.9	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	476	0	3	271	20	35
Future Vol, veh/h	476	0	3	271	20	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	0	-
Peak Hour Factor	92	92	92	92	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	517	0	3	295	27	47

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	517	0	818
Stage 1	-	-	-	-	517
Stage 2	-	-	-	-	301
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1049	-	346
Stage 1	-	-	-	-	598
Stage 2	-	-	-	-	751
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1049	-	345
Mov Cap-2 Maneuver	-	-	-	-	456
Stage 1	-	-	-	-	596
Stage 2	-	-	-	-	751

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	516	-	-	1049	-
HCM Lane V/C Ratio	0.142	-	-	0.003	-
HCM Control Delay (s)	13.1	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection

Int Delay, s/veh 9.3

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	24	21	49	799	23	26	738	6	5	100
Future Vol, veh/h	24	21	49	799	23	26	738	6	5	100
Conflicting Peds, #/hr	0	0	7	0	32	32	0	7	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	87	87	83	83	83	88	88	88	92	92
Heavy Vehicles, %	2	2	3	3	3	3	3	3	5	5
Mvmt Flow	28	24	59	963	28	30	839	7	5	109

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1609	536	853	430
Stage 1	1127	-	-	910
Stage 2	482	-	-	620
Critical Hdwy	7.94	7.14	4.16	6.7
Critical Hdwy Stg 1	6.94	-	-	6
Critical Hdwy Stg 2	6.94	-	-	6
Follow-up Hdwy	3.52	3.32	2.23	3.35
Pot Cap-1 Maneuver	58	475	776	586
Stage 1	192	-	-	337
Stage 2	506	-	-	482
Platoon blocked, %				
Mov Cap-1 Maneuver	39	457	771	582
Mov Cap-2 Maneuver	39	-	-	36
Stage 1	172	-	-	309
Stage 2	387	-	-	320

Approach	WB	NB	SB	SE
HCM Control Delay, s	119.6	0.6	0.4	24.4
HCM LOS	F			C

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	771	-	-	126	302	648	-	-
HCM Lane V/C Ratio	0.077	-	-	0.894	0.392	0.046	-	-
HCM Control Delay (s)	10.1	-	-	119.6	24.4	10.8	-	-
HCM Lane LOS	B	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	5.7	1.8	0.1	-	-



2022 With Site – Current Site Plan

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	113	243	240	23	2	10
Future Vol, veh/h	113	243	240	23	2	10
Conflicting Peds, #/hr	16	0	0	16	16	16
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	270	267	26	4	20

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	309	0	-	0	834 312
Stage 1	-	-	-	-	296 -
Stage 2	-	-	-	-	538 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1252	-	-	-	338 728
Stage 1	-	-	-	-	755 -
Stage 2	-	-	-	-	585 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1233	-	-	-	294 706
Mov Cap-2 Maneuver	-	-	-	-	369 -
Stage 1	-	-	-	-	668 -
Stage 2	-	-	-	-	576 -

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1233	-	-	-	613
HCM Lane V/C Ratio	0.102	-	-	-	0.039
HCM Control Delay (s)	8.2	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	200	261	45	4	4
Future Vol, veh/h	45	200	261	45	4	4
Conflicting Peds, #/hr	16	0	0	16	16	16
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	2	-	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	222	290	50	8	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	356	0	-	0	669 347
Stage 1	-	-	-	-	331 -
Stage 2	-	-	-	-	338 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1203	-	-	-	423 696
Stage 1	-	-	-	-	728 -
Stage 2	-	-	-	-	722 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1185	-	-	-	393 675
Mov Cap-2 Maneuver	-	-	-	-	487 -
Stage 1	-	-	-	-	687 -
Stage 2	-	-	-	-	711 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1185	-	-	-	566
HCM Lane V/C Ratio	0.042	-	-	-	0.028
HCM Control Delay (s)	8.2	-	-	-	11.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection										
Int Delay, s/veh	1.5									
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	2	3	38	440	3	9	789	2	6	54
Future Vol, veh/h	2	3	38	440	3	9	789	2	6	54
Conflicting Peds, #/hr	0	0	1	0	15	15	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	48	48	93	93	93	89	89	89	76	76
Heavy Vehicles, %	10	10	7	7	7	5	5	5	8	8
Mvmt Flow	4	6	41	473	3	10	887	2	8	71
Major/Minor	Minor1	Major1			Major2			Minor2		
Conflicting Flow All	1040	253	890	0	0	491	0	0	1231	446
Stage 1	572	-	-	-	-	-	-	-	909	-
Stage 2	468	-	-	-	-	-	-	-	322	-
Critical Hdwy	8.1	7.3	4.24	-	-	4.2	-	-	7.06	6.76
Critical Hdwy Stg 1	7.1	-	-	-	-	-	-	-	6.06	-
Critical Hdwy Stg 2	7.1	-	-	-	-	-	-	-	6.06	-
Follow-up Hdwy	3.6	3.4	2.27	-	-	2.25	-	-	3.58	3.38
Pot Cap-1 Maneuver	155	713	726	-	-	1048	-	-	156	564
Stage 1	425	-	-	-	-	-	-	-	331	-
Stage 2	498	-	-	-	-	-	-	-	683	-
Platoon blocked, %				-	-	-	-	-		
Mov Cap-1 Maneuver	121	703	725	-	-	1033	-	-	134	563
Mov Cap-2 Maneuver	121	-	-	-	-	-	-	-	134	-
Stage 1	395	-	-	-	-	-	-	-	312	-
Stage 2	422	-	-	-	-	-	-	-	608	-
Approach	WB	NB			SB			SE		
HCM Control Delay, s	13.9	0.8			0.1			16.2		
HCM LOS	B							C		
Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR		
Capacity (veh/h)	725	-	-	439	402	1033	-	-		
HCM Lane V/C Ratio	0.056	-	-	0.076	0.203	0.01	-	-		
HCM Control Delay (s)	10.3	-	-	13.9	16.2	8.5	-	-		
HCM Lane LOS	B	-	-	B	C	A	-	-		
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.8	0	-	-		

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	327	233	18	13	67
Future Vol, veh/h	88	327	233	18	13	67
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	90	90	90	90	56	56
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	363	259	20	23	120

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	295	0	-	0	844 285
Stage 1	-	-	-	-	285 -
Stage 2	-	-	-	-	559 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1266	-	-	-	334 754
Stage 1	-	-	-	-	763 -
Stage 2	-	-	-	-	572 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1247	-	-	-	299 743
Mov Cap-2 Maneuver	-	-	-	-	380 -
Stage 1	-	-	-	-	692 -
Stage 2	-	-	-	-	563 -

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1247	-	-	-	643
HCM Lane V/C Ratio	0.078	-	-	-	0.222
HCM Control Delay (s)	8.1	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	306	237	35	27	27
Future Vol, veh/h	35	306	237	35	27	27
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	2	-	0	-
Peak Hour Factor	90	90	90	90	56	56
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	340	263	39	48	48

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	318	0	-	0	717 299
Stage 1	-	-	-	-	299 -
Stage 2	-	-	-	-	418 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1242	-	-	-	396 741
Stage 1	-	-	-	-	752 -
Stage 2	-	-	-	-	664 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1223	-	-	-	372 730
Mov Cap-2 Maneuver	-	-	-	-	470 -
Stage 1	-	-	-	-	717 -
Stage 2	-	-	-	-	654 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1223	-	-	-	572
HCM Lane V/C Ratio	0.032	-	-	-	0.169
HCM Control Delay (s)	8	-	-	-	12.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection

Int Delay, s/veh 2.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	8	9	44	490	4	9	557	6	7	59
Future Vol, veh/h	8	9	44	490	4	9	557	6	7	59
Conflicting Peds, #/hr	0	0	6	0	41	41	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	75	75	93	93	93	87	87	87	75	75
Heavy Vehicles, %	2	2	7	7	7	5	5	5	8	8
Mvmt Flow	11	12	47	527	4	10	640	7	9	79

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1009	315	653	0
Stage 1	664	-	-	-
Stage 2	345	-	-	-
Critical Hdwy	7.94	7.14	4.24	-
Critical Hdwy Stg 1	6.94	-	-	-
Critical Hdwy Stg 2	6.94	-	-	-
Follow-up Hdwy	3.52	3.32	2.27	-
Pot Cap-1 Maneuver	174	669	897	-
Stage 1	387	-	-	-
Stage 2	620	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	134	638	892	-
Mov Cap-2 Maneuver	134	-	-	-
Stage 1	352	-	-	-
Stage 2	530	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	15.7	0.8	0.1	14.1
HCM LOS	C			B

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	892	-	-	404	484	938	-	-
HCM Lane V/C Ratio	0.053	-	-	0.172	0.185	0.011	-	-
HCM Control Delay (s)	9.3	-	-	15.7	14.1	8.9	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0.7	0	-	-

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	405	266	9	25	123
Future Vol, veh/h	45	405	266	9	25	123
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	2	-	0	-
Peak Hour Factor	92	92	92	92	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	440	289	10	30	148

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	315	0	-	0	848 310
Stage 1	-	-	-	-	310 -
Stage 2	-	-	-	-	538 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1245	-	-	-	332 730
Stage 1	-	-	-	-	744 -
Stage 2	-	-	-	-	585 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1226	-	-	-	309 719
Mov Cap-2 Maneuver	-	-	-	-	410 -
Stage 1	-	-	-	-	704 -
Stage 2	-	-	-	-	576 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1226	-	-	-	638
HCM Lane V/C Ratio	0.04	-	-	-	0.279
HCM Control Delay (s)	8.1	-	-	-	12.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	412	250	18	49	49
Future Vol, veh/h	18	412	250	18	49	49
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	2	-	0	-
Peak Hour Factor	92	92	92	92	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	448	272	20	59	59

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	308	0	-	0	786 298
Stage 1	-	-	-	-	298 -
Stage 2	-	-	-	-	488 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1253	-	-	-	361 741
Stage 1	-	-	-	-	753 -
Stage 2	-	-	-	-	617 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1234	-	-	-	345 730
Mov Cap-2 Maneuver	-	-	-	-	451 -
Stage 1	-	-	-	-	730 -
Stage 2	-	-	-	-	608 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1234	-	-	-	558
HCM Lane V/C Ratio	0.016	-	-	-	0.212
HCM Control Delay (s)	8	-	-	-	13.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection										
Int Delay, s/veh	11.5									
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	24	21	49	851	23	26	748	6	5	100
Future Vol, veh/h	24	21	49	851	23	26	748	6	5	100
Conflicting Peds, #/hr	0	0	7	0	32	32	0	7	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	87	87	83	83	83	88	88	88	92	92
Heavy Vehicles, %	2	2	3	3	3	3	3	3	5	5
Mvmt Flow	28	24	59	1025	28	30	850	7	5	109
Major/Minor	Minor1		Major1		Major2			Minor2		
Conflicting Flow All	1677	567	864	0	0	1085	0	0	1572	436
Stage 1	1189	-	-	-	-	-	-	-	921	-
Stage 2	488	-	-	-	-	-	-	-	651	-
Critical Hdwy	7.94	7.14	4.16	-	-	4.16	-	-	7	6.7
Critical Hdwy Stg 1	6.94	-	-	-	-	-	-	-	6	-
Critical Hdwy Stg 2	6.94	-	-	-	-	-	-	-	6	-
Follow-up Hdwy	3.52	3.32	2.23	-	-	2.23	-	-	3.55	3.35
Pot Cap-1 Maneuver	52	452	768	-	-	633	-	-	94	581
Stage 1	175	-	-	-	-	-	-	-	333	-
Stage 2	502	-	-	-	-	-	-	-	464	-
Platoon blocked, %				-	-	-	-	-		
Mov Cap-1 Maneuver	34	435	763	-	-	614	-	-	29	577
Mov Cap-2 Maneuver	34	-	-	-	-	-	-	-	29	-
Stage 1	157	-	-	-	-	-	-	-	305	-
Stage 2	382	-	-	-	-	-	-	-	301	-
Approach	WB		NB		SB			SE		
HCM Control Delay, s	159.1		0.5		0.4			27.9		
HCM LOS	F							D		
Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR		
Capacity (veh/h)	763	-	-	112	273	614	-	-		
HCM Lane V/C Ratio	0.077	-	-	1.006	0.434	0.048	-	-		
HCM Control Delay (s)	10.1	-	-	159.1	27.9	11.2	-	-		
HCM Lane LOS	B	-	-	F	D	B	-	-		
HCM 95th %tile Q(veh)	0.3	-	-	6.5	2.1	0.2	-	-		



2022 With Site – Modified Access

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	102	198	238	68	6	9
Future Vol, veh/h	102	198	238	68	6	9
Conflicting Peds, #/hr	16	0	0	16	16	16
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	2	-	0	-
Peak Hour Factor	90	90	90	90	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	113	220	264	76	12	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	356	0	-	0	780 334
Stage 1	-	-	-	-	318 -
Stage 2	-	-	-	-	462 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1203	-	-	-	364 708
Stage 1	-	-	-	-	738 -
Stage 2	-	-	-	-	634 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1185	-	-	-	320 687
Mov Cap-2 Maneuver	-	-	-	-	404 -
Stage 1	-	-	-	-	658 -
Stage 2	-	-	-	-	624 -

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1185	-	-	-	404	687
HCM Lane V/C Ratio	0.096	-	-	-	0.03	0.026
HCM Control Delay (s)	8.4	-	-	-	14.2	10.4
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.1	0.1

Intersection

Int Delay, s/veh 1.9

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	2	3	38	440	3	66	732	2	6	54
Future Vol, veh/h	2	3	38	440	3	66	732	2	6	54
Conflicting Peds, #/hr	0	0	1	0	15	15	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	48	48	93	93	93	89	89	89	76	76
Heavy Vehicles, %	10	10	7	7	7	5	5	5	8	8
Mvmt Flow	4	6	41	473	3	74	822	2	8	71

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1135	253	825	413
Stage 1	572	-	-	-
Stage 2	563	-	-	-
Critical Hdwy	8.1	7.3	4.24	6.76
Critical Hdwy Stg 1	7.1	-	-	-
Critical Hdwy Stg 2	7.1	-	-	-
Follow-up Hdwy	3.6	3.4	2.27	3.38
Pot Cap-1 Maneuver	130	713	770	592
Stage 1	425	-	-	-
Stage 2	431	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	97	703	769	591
Mov Cap-2 Maneuver	97	-	-	-
Stage 1	397	-	-	-
Stage 2	344	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	15	0.8	0.7	16.6
HCM LOS	C			C

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	769	-	-	395	391	1033	-	-
HCM Lane V/C Ratio	0.053	-	-	0.084	0.209	0.072	-	-
HCM Control Delay (s)	9.9	-	-	15	16.6	8.8	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.8	0.2	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	5	487	0	0	788
Future Vol, veh/h	0	5	487	0	0	788
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	-	-5	-	-	8
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	529	0	0	857

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	265	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	733	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	-	733	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 733	-
HCM Lane V/C Ratio	- 0.007	-
HCM Control Delay (s)	- 9.9	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕↕↕
Traffic Vol, veh/h	0	33	511	0	0	580
Future Vol, veh/h	0	33	511	0	0	580
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	-	-5	-	-	8
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	36	555	0	0	630

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	278	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	719	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	719	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 719	-
HCM Lane V/C Ratio	- 0.05	-
HCM Control Delay (s)	- 10.3	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.2	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	↔
Traffic Vol, veh/h	79	293	219	53	40	60
Future Vol, veh/h	79	293	219	53	40	60
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	2	-	0	-
Peak Hour Factor	90	90	90	90	56	56
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	326	243	59	71	107

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	318	0	-	0	791 289
Stage 1	-	-	-	-	289 -
Stage 2	-	-	-	-	502 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1242	-	-	-	358 750
Stage 1	-	-	-	-	760 -
Stage 2	-	-	-	-	608 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1223	-	-	-	322 739
Mov Cap-2 Maneuver	-	-	-	-	409 -
Stage 1	-	-	-	-	695 -
Stage 2	-	-	-	-	599 -

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1223	-	-	-	409	739
HCM Lane V/C Ratio	0.072	-	-	-	0.175	0.145
HCM Control Delay (s)	8.2	-	-	-	15.7	10.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6	0.5

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	8	9	44	490	4	53	513	6	7	59
Future Vol, veh/h	8	9	44	490	4	53	513	6	7	59
Conflicting Peds, #/hr	0	0	6	0	41	41	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	75	75	93	93	93	87	87	87	75	75
Heavy Vehicles, %	2	2	7	7	7	5	5	5	8	8
Mvmt Flow	11	12	47	527	4	61	590	7	9	79

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1086	315	603	0
Stage 1	664	-	-	-
Stage 2	422	-	-	-
Critical Hdwy	7.94	7.14	4.24	-
Critical Hdwy Stg 1	6.94	-	-	-
Critical Hdwy Stg 2	6.94	-	-	-
Follow-up Hdwy	3.52	3.32	2.27	-
Pot Cap-1 Maneuver	151	669	937	-
Stage 1	387	-	-	-
Stage 2	553	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	112	638	932	-
Mov Cap-2 Maneuver	112	-	-	-
Stage 1	353	-	-	-
Stage 2	448	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	17	0.7	0.8	14.4
HCM LOS	C			B

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	932	-	-	370	473	938	-	-
HCM Lane V/C Ratio	0.051	-	-	0.187	0.189	0.065	-	-
HCM Control Delay (s)	9.1	-	-	17	14.4	9.1	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.7	0.2	-	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	40	387	241	27	74	110
Future Vol, veh/h	40	387	241	27	74	110
Conflicting Peds, #/hr	16	0	0	16	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	2	-	0	-
Peak Hour Factor	92	92	92	92	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	421	262	29	89	133

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	307	0	-	0	800 293
Stage 1	-	-	-	-	293 -
Stage 2	-	-	-	-	507 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1254	-	-	-	354 746
Stage 1	-	-	-	-	757 -
Stage 2	-	-	-	-	605 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1235	-	-	-	331 735
Mov Cap-2 Maneuver	-	-	-	-	431 -
Stage 1	-	-	-	-	720 -
Stage 2	-	-	-	-	596 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1235	-	-	-	431	735
HCM Lane V/C Ratio	0.035	-	-	-	0.207	0.18
HCM Control Delay (s)	8	-	-	-	15.5	11
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	0.7

Intersection

Int Delay, s/veh 13.7

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	24	21	49	851	23	48	725	6	5	100
Future Vol, veh/h	24	21	49	851	23	48	725	6	5	100
Conflicting Peds, #/hr	0	0	7	0	32	32	0	7	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	150	-	-	70	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	2	-	-	-5	-	-	5	-	-3	-
Peak Hour Factor	87	87	83	83	83	88	88	88	92	92
Heavy Vehicles, %	2	2	3	3	3	3	3	3	5	5
Mvmt Flow	28	24	59	1025	28	55	824	7	5	109

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1714	567	838	423
Stage 1	1189	-	-	-
Stage 2	525	-	-	-
Critical Hdwy	7.94	7.14	4.16	6.7
Critical Hdwy Stg 1	6.94	-	-	-
Critical Hdwy Stg 2	6.94	-	-	-
Follow-up Hdwy	3.52	3.32	2.23	3.35
Pot Cap-1 Maneuver	48	452	786	592
Stage 1	175	-	-	-
Stage 2	475	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	31	435	781	588
Mov Cap-2 Maneuver	31	-	-	-
Stage 1	157	-	-	-
Stage 2	347	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	189.5	0.5	0.7	31.9
HCM LOS	F			D

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SELn1	SBL	SBT	SBR
Capacity (veh/h)	781	-	-	104	249	614	-	-
HCM Lane V/C Ratio	0.076	-	-	1.083	0.476	0.089	-	-
HCM Control Delay (s)	10	-	-	189.5	31.9	11.4	-	-
HCM Lane LOS	A	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	7.1	2.4	0.3	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕↗
Traffic Vol, veh/h	0	61	861	0	0	850
Future Vol, veh/h	0	61	861	0	0	850
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	-	-5	-	-	8
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	66	936	0	0	924

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	468	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	542	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	542	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 542	-
HCM Lane V/C Ratio	- 0.122	-
HCM Control Delay (s)	- 12.6	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.4	-



Appendix F – SimTraffic Queuing and Blocking Report

2022 PM Peak Hour – With Site and Modified Access

Summary of All Intervals

Run Number	1	2	3	4	5		Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	7903	7996	7916	7839	7928	7939	7920
Vehs Exited	7580	7764	7734	7652	7703	7644	7678
Starting Vehs	325	390	394	353	360	326	350
Ending Vehs	648	622	576	540	585	621	596
Denied Entry Before	0	0	4	3	6	3	0
Denied Entry After	161	170	167	218	52	263	171
Travel Distance (mi)	4730	4858	4842	4756	4751	4821	4793
Travel Time (hr)	550.2	588.1	594.3	568.4	515.8	622.8	573.2
Total Delay (hr)	347.9	380.4	387.4	365.3	313.0	416.4	368.4
Total Stops	16521	16634	17083	16227	15861	17197	16581
Fuel Used (gal)	247.5	258.0	260.9	253.0	240.0	266.3	254.3

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60
Volumes adjusted by PHF, Growth Factors.	

Run Number	1	2	3	4	5		Avg
Vehs Entered	7903	7996	7916	7839	7928	7939	7920
Vehs Exited	7580	7764	7734	7652	7703	7644	7678
Starting Vehs	325	390	394	353	360	326	350
Ending Vehs	648	622	576	540	585	621	596
Denied Entry Before	0	0	4	3	6	3	0
Denied Entry After	161	170	167	218	52	263	171
Travel Distance (mi)	4730	4858	4842	4756	4751	4821	4793
Travel Time (hr)	550.2	588.1	594.3	568.4	515.8	622.8	573.2
Total Delay (hr)	347.9	380.4	387.4	365.3	313.0	416.4	368.4
Total Stops	16521	16634	17083	16227	15861	17197	16581
Fuel Used (gal)	247.5	258.0	260.9	253.0	240.0	266.3	254.3

Intersection: 1: Church Street & W. Rosemary Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	435	427	213	152
Average Queue (ft)	203	172	104	69
95th Queue (ft)	397	327	174	126
Link Distance (ft)	936	676	311	396
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: NC 86 (N. Columbia St) & W. Rosemary Street/E. Rosemary Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	124	696	175	398	93	166	177	166	204	208	197
Average Queue (ft)	121	568	142	373	34	49	74	52	128	144	115
95th Queue (ft)	140	775	227	448	72	110	126	118	197	212	194
Link Distance (ft)		676		379		275	275		186	186	186
Upstream Blk Time (%)		7		52			0	0	2	3	2
Queuing Penalty (veh)		39		204			0	0	5	10	5
Storage Bay Dist (ft)	100		150		75			150			
Storage Blk Time (%)	49	35	13	74	1	5		0	5		
Queuing Penalty (veh)	176	91	35	67	5	3		0	4		

Intersection: 5: E. Rosemary Street

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	70	81	435	198	216
Average Queue (ft)	14	9	196	106	150
95th Queue (ft)	49	83	425	229	245
Link Distance (ft)		379	434	177	177
Upstream Blk Time (%)			2	32	57
Queuing Penalty (veh)			5	0	0
Storage Bay Dist (ft)	150				
Storage Blk Time (%)		1			
Queuing Penalty (veh)		0			

Intersection: 6: Henderson Street & E. Rosemary Street

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	LTR	LTR
Maximum Queue (ft)	109	334	349	148	175
Average Queue (ft)	34	157	120	66	62
95th Queue (ft)	94	316	337	123	140
Link Distance (ft)		434	1133	287	416
Upstream Blk Time (%)		2			
Queuing Penalty (veh)		11			
Storage Bay Dist (ft)	85				
Storage Blk Time (%)	0	18			
Queuing Penalty (veh)	0	9			

Intersection: 7: Hillsborough Street & E. Rosemary Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	264	234	124	233	112	165
Average Queue (ft)	132	106	65	92	24	81
95th Queue (ft)	224	193	121	173	66	147
Link Distance (ft)	1133	493		293		697
Upstream Blk Time (%)				0		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			100		100	
Storage Blk Time (%)			2	4	0	5
Queuing Penalty (veh)			6	7	0	2

Intersection: 8: Carolina Square Driveway/Church Street & W. Franklin Street

Movement	EB	EB	WB	WB	B36	NB	NB	SB
Directions Served	L	TR	L	TR	T	LT	R	LTR
Maximum Queue (ft)	168	429	224	318	92	123	113	188
Average Queue (ft)	65	201	49	256	16	48	33	106
95th Queue (ft)	145	350	161	334	64	98	80	172
Link Distance (ft)		964		226	388	253		311
Upstream Blk Time (%)			0	14				
Queuing Penalty (veh)			0	111				
Storage Bay Dist (ft)	150		200				100	
Storage Blk Time (%)	1	13		17		2	0	
Queuing Penalty (veh)	4	9		8		1	0	

Intersection: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Movement	EB	EB	EB	B36	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	T	L	T	R	L	T	TR	L	T
Maximum Queue (ft)	274	385	341	75	150	904	876	213	314	350	146	291
Average Queue (ft)	194	216	196	5	114	782	485	75	130	174	82	138
95th Queue (ft)	296	365	306	52	179	1076	1085	154	268	313	152	271
Link Distance (ft)		388	388	226		877	877		885	885		275
Upstream Blk Time (%)		2	0	0		16	3					1
Queuing Penalty (veh)		6	0	1		61	13					2
Storage Bay Dist (ft)	250				125			475			125	
Storage Blk Time (%)	14	1			13	56			0		9	8
Queuing Penalty (veh)	34	1			81	68			0		19	6

Intersection: 9: NC 86 (S. Columbia St)/NC 86 (N. Columbia St) & W. Franklin Street/E. Franklin Street

Movement	SB
Directions Served	TR
Maximum Queue (ft)	292
Average Queue (ft)	175
95th Queue (ft)	296
Link Distance (ft)	275
Upstream Blk Time (%)	2
Queuing Penalty (veh)	7
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. Franklin Street & Henderson Street

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	254	285	556	522	290
Average Queue (ft)	139	154	254	214	164
95th Queue (ft)	228	248	552	520	297
Link Distance (ft)	877	877	1130	1130	287
Upstream Blk Time (%)					7
Queuing Penalty (veh)					15
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 11: Raleigh Street/Hillsborough Street & E. Franklin Street

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	L	TR
Maximum Queue (ft)	100	270	470	100	358	349	417	125	293
Average Queue (ft)	47	101	143	50	195	198	224	53	151
95th Queue (ft)	95	223	327	102	318	317	369	119	253
Link Distance (ft)		1130	1130		978	978	917		293
Upstream Blk Time (%)			0						1
Queuing Penalty (veh)			0						2
Storage Bay Dist (ft)	75			75				100	
Storage Blk Time (%)	5	12		5	26			0	26
Queuing Penalty (veh)	16	7		17	17			1	16

Intersection: 13: NC 86 (N. Columbia St)/NC 86 (MLK Jr. Blvd) & North Street & N. Columbia Street

Movement	WB	NB	NB	NB	SB	SB	SB	SE
Directions Served	ULR>	L	T	TR	L	T	TR	<LR
Maximum Queue (ft)	168	79	67	53	49	49	82	362
Average Queue (ft)	148	30	8	4	14	4	13	111
95th Queue (ft)	186	67	38	27	36	22	53	266
Link Distance (ft)	150		176	176		1981	1981	618
Upstream Blk Time (%)	80							
Queuing Penalty (veh)	103							
Storage Bay Dist (ft)		150			70			
Storage Blk Time (%)					0	0		
Queuing Penalty (veh)					0	0		

Intersection: 14: NC 86 (MLK Jr. Blvd) & Longview Street/Mill Creek Apts Driveway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	152	83	35	195	212	33	173	168
Average Queue (ft)	63	32	8	85	101	7	75	63
95th Queue (ft)	115	69	29	157	172	26	140	132
Link Distance (ft)	403	282		1981	1981		742	742
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			225			250		
Storage Blk Time (%)				0			0	
Queuing Penalty (veh)				0			0	

Intersection: 15: NC 86 (Pittsboro St) & W. Cameron Avenue

Movement	EB	WB	WB	WB	B30	B30
Directions Served	TR	L	L	T	T	T
Maximum Queue (ft)	370	164	153	159	92	147
Average Queue (ft)	277	98	80	85	12	25
95th Queue (ft)	393	166	151	164	57	98
Link Distance (ft)	347	76	76	76	196	196
Upstream Blk Time (%)	6	22	15	6		0
Queuing Penalty (veh)	0	76	50	21		1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 16: NC 86 (S. Columbia St) & W. Cameron Avenue/E. Cameron Avenue

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	LT	TR	L	R	R
Maximum Queue (ft)	104	162	896	831	833	842	312	537	594
Average Queue (ft)	33	46	541	468	673	650	170	348	415
95th Queue (ft)	90	118	1008	1013	971	964	358	576	627
Link Distance (ft)		196	946	791	791	791		885	885
Upstream Blk Time (%)		0	16	18	37	25			
Queuing Penalty (veh)		0	0	0	0	0			
Storage Bay Dist (ft)	100						310		
Storage Blk Time (%)	7	1					0	19	
Queuing Penalty (veh)	9	0					0	27	

Intersection: 17: Raleigh Street & E. Cameron Avenue/Country Club Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	TR	L	TR	L	TR
Maximum Queue (ft)	340	137	265	133	218	100	619
Average Queue (ft)	162	30	143	39	98	94	262
95th Queue (ft)	291	88	231	89	169	112	522
Link Distance (ft)	563		616		374		917
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		150		125		75	
Storage Blk Time (%)			8	0	4	36	23
Queuing Penalty (veh)			3	0	2	102	73

Intersection: 26: NC 86 (N. Columbia St)

Movement	WB	NB	SB	SB	SB
Directions Served	R	T	T	T	T
Maximum Queue (ft)	63	7	84	67	84
Average Queue (ft)	32	0	6	8	5
95th Queue (ft)	55	5	40	39	41
Link Distance (ft)	136	186	176	176	176
Upstream Blk Time (%)					0
Queuing Penalty (veh)					0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 31: North Street

Movement	WB
Directions Served	LT
Maximum Queue (ft)	419
Average Queue (ft)	311
95th Queue (ft)	567
Link Distance (ft)	407
Upstream Blk Time (%)	54
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1676



Appendix G – Peak Hour Signal Warrant Analysis

HCS7 Warrants Report

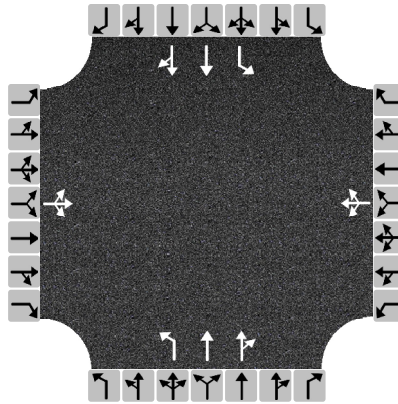
Project Information

Analyst	CRS	Date	4/18/2020
Agency	HNTB North Carolina, PC	Analysis Year	2022
Jurisdiction	Chapel Hill, NC	Time Period Analyzed	2022 Build Alternative 2 - PM Peak
Project Description	E Rosemary Parking Deck & Office Building - TIS		

General

Major Street Direction	North-South	Population < 10,000	No
Starting Time Interval	8	Coordinated Signal System	No
Median Type	Undivided	Crashes (crashes/year)	0
Major Street Speed (mi/h)	35	Adequate Trials of Crash Exp. Alt.	No
Nearest Signal (ft)	450		

Geometry and Traffic



Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Number of Lanes, N	0	1	0	0	1	0	1	2	0	1	2	0
Lane Usage		LTR			LTR		L	TR		L	TR	
Vehicle Volumes Averages (veh/h)	0	1	8	2	2	5	10	148	1	13	164	0
Pedestrian Averages (peds/h)	0			0			0			0		
Gap Averages (gaps/h)	0			0			0			0		
Delay (s/veh)	5.2			18.5			0.2			0.2		
Delay (veh-hrs)	0.1			0.6			0.0			0.0		

School Crossing and Roadway Network

Number of Students in Highest Hour	0	Two or More Major Routes	No
Number of Adequate Gaps in Period	0	Weekend Counts	No
Number of Minutes in Period	0	5-year Growth Factor (%)	0

Railroad Crossing

Grade Crossing Approach	None	Rail Traffic (trains/day)	0
Highest Volume Hour with Trains	Unknown	High Occupancy Buses (%)	0
Distance to Stop Line (ft)		Tractor-Trailer Trucks (%)	0

HCS7 Warrants Report

Volume Summary

Hour	Major Volume	Minor Volume	Total Volume	Peds/h	Gaps/h	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)	4A (100%)	4B (100%)
08 - 09	1279	35	1326	0	0	No	No	No	No	No	No	No	No	No
09 - 10	0	0	0	0	0	No	No	No	No	No	No	No	No	No
10 - 11	0	0	0	0	0	No	No	No	No	No	No	No	No	No
11 - 12	0	0	0	0	0	No	No	No	No	No	No	No	No	No
12 - 13	1105	39	1182	0	0	No	No	No	No	No	No	No	No	No
13 - 14	0	0	0	0	0	No	No	No	No	No	No	No	No	No
14 - 15	0	0	0	0	0	No	No	No	No	No	No	No	No	No
15 - 16	0	0	0	0	0	No	No	No	No	No	No	No	No	No
16 - 17	0	0	0	0	0	No	No	No	No	No	No	No	No	No
17 - 18	1688	82	1829	0	0	No	No	Yes	Yes	Yes	No	No	No	No
18 - 19	0	0	0	0	0	No	No	No	No	No	No	No	No	No
19 - 20	0	0	0	0	0	No	No	No	No	No	No	No	No	No
Total	4072	156	4337	0	0	0	0	1	1	1	0	0	0	0

Warrants

Warrant 1: Eight-Hour Vehicular Volume

A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--

B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--

80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)

Warrant 2: Four-Hour Vehicular Volume

Four-Hour Vehicular Volume (Both major approaches --and-- higher minor approach)

Warrant 3: Peak Hour

A. Peak-Hour Conditions (Minor delay -- and-- minor volume --and-- total volume) --or--

B. Peak-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)

Warrant 4: Pedestrian Volume

A. Four Hour Volumes --or--

B. One-Hour Volumes

Warrant 5: School Crossing

Gaps Same Period --and--

Student Volumes

Nearest Traffic Control Signal (optional)



Warrant 6: Coordinated Signal System

Degree of Platooning (Predominant direction or both directions)

Warrant 7: Crash Experience

A. Adequate trials of alternatives, observance and enforcement failed --and--

B. Reported crashes susceptible to correction by signal (12-month period) --and--

C. 80% Volumes for Warrants 1A, 1B, --or-- 4 are satisfied

Warrant 8: Roadway Network

A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2, or 3) --or--

B. Weekend Volume (Five hours total)

Warrant 9: Grade Crossing

A. Grade Crossing within 140 ft --and--

B. Peak-Hour Vehicular Volumes



Appendix H – Crash Data

**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
8	105373901	0.667	01/16/2018 17:10	REAR END, SLOW OR STOP	\$ 2000	0	0	0	0	1	2	1	0			
Unit	1 : 1	Alchl/Drugs:	0	Speed:	0 MPH Dir: W	Veh Mnvr/Ped Actn:				1	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH Dir: W	Veh Mnvr/Ped Actn:				4	Obj Strk:					
9	105434861	0.667	03/20/2018 15:06	SIDESWIPE, SAME DIRECTION	\$ 2900	0	0	0	0	1	1	2	0			
Unit	1 : 7	Alchl/Drugs:	0	Speed:	0 MPH Dir: E	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH Dir: E	Veh Mnvr/Ped Actn:				5	Obj Strk:					
10	105491232	0.667	05/20/2018 21:53	LEFT TURN, SAME ROADWAY	\$ 6000	0	0	0	0	1	3	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	15 MPH Dir: E	Veh Mnvr/Ped Actn:				8	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed:	20 MPH Dir: W	Veh Mnvr/Ped Actn:				4	Obj Strk:					
11	105544869	0.667	07/12/2018 10:28	REAR END, SLOW OR STOP	\$ 1000	0	0	0	0	1	1	1	1	0	3	2
Unit	1 : 1	Alchl/Drugs:	0	Speed:	5 MPH Dir: W	Veh Mnvr/Ped Actn:				11	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH Dir: W	Veh Mnvr/Ped Actn:				11	Obj Strk:					
12	105653065	0.667	10/12/2018 15:44	LEFT TURN, DIFFERENT ROADWAYS	\$ 2000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	10 MPH Dir: W	Veh Mnvr/Ped Actn:				8	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed:	20 MPH Dir: E	Veh Mnvr/Ped Actn:				4	Obj Strk:					
13	105746585	0.667	12/31/2018 21:25	ANGLE	\$ 1600	0	0	0	0	2	4	2	3	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	15 MPH Dir: S	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed:	10 MPH Dir: E	Veh Mnvr/Ped Actn:				4	Obj Strk:					
14	105792934	0.667	02/23/2019 07:51	ANGLE	\$ 2150	0	0	0	0	2	1	3	1	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	25 MPH Dir: W	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed:	15 MPH Dir: N	Veh Mnvr/Ped Actn:				4	Obj Strk:					
15	105800967	0.667	03/10/2019 00:02	PEDESTRIAN	\$ 0	0	0	1	0	1	4	2	1	12	3	1
Unit	1 : 32	Alchl/Drugs:	7	Speed:	5 MPH Dir: N	Veh Mnvr/Ped Actn:				8	Obj Strk:					
Unit	2 : 24	Alchl/Drugs:	2	Speed:	0 MPH Dir:	Veh Mnvr/Ped Actn:					Obj Strk:					
16	105824361	0.671	03/25/2019 16:44	REAR END, SLOW OR STOP	\$ 1100	0	0	0	0	2	1	3	1	0	3	2
Unit	1 : 1	Alchl/Drugs:	0	Speed:	0 MPH Dir: E	Veh Mnvr/Ped Actn:				1	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed:	5 MPH Dir: E	Veh Mnvr/Ped Actn:				4	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
17	105748774	0.673	12/29/2018 23:49	HEAD ON	\$ 9000	0	0	0	0	1	4	1	2	0	3	1
Unit	1 : 4	Alchl/Drgs:	1	Speed:	30 MPH	Dir:	E	Veh Mnvr/Ped Actn:				6	Obj Strk:			
Unit	2 : 2	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	W	Veh Mnvr/Ped Actn:				1	Obj Strk:			
Unit	3 : 1	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	E	Veh Mnvr/Ped Actn:				4	Obj Strk:			
18	105319155	0.676	12/01/2017 10:47	REAR END, SLOW OR STOP	\$ 2500	0	0	0	0	1	1	1	3	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	W	Veh Mnvr/Ped Actn:				1	Obj Strk:			
Unit	2 : 4	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	W	Veh Mnvr/Ped Actn:				4	Obj Strk:			
19	104540531	0.682	10/26/2015 14:10	REAR END, SLOW OR STOP	\$ 2750	0	0	0	0	1	1	2	1	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed:	15 MPH	Dir:	W	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 4	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	W	Veh Mnvr/Ped Actn:				5	Obj Strk:			
20	105217658	0.682	09/05/2017 19:19	LEFT TURN, SAME ROADWAY	\$ 1500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	10 MPH	Dir:	SW	Veh Mnvr/Ped Actn:				12	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	25 MPH	Dir:	SW	Veh Mnvr/Ped Actn:				4	Obj Strk:			
21	105142349	0.685	06/20/2017 13:41	REAR END, SLOW OR STOP	\$ 1900	0	0	0	0	1	1	1	3	0	3	1
Unit	1 : 2	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	W	Veh Mnvr/Ped Actn:				1	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	W	Veh Mnvr/Ped Actn:				4	Obj Strk:			
22	105103247	0.724	05/11/2017 15:47	REAR END, SLOW OR STOP	\$ 3500	0	0	0	1	1	1	1	1	0	3	2
Unit	1 : 4	Alchl/Drgs:	0	Speed:	25 MPH	Dir:	E	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	E	Veh Mnvr/Ped Actn:				1	Obj Strk:			
Unit	3 : 1	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	E	Veh Mnvr/Ped Actn:				1	Obj Strk:			
23	105296203	0.730	11/16/2017 13:02	REAR END, SLOW OR STOP	\$ 1900	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 4	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	E	Veh Mnvr/Ped Actn:				1	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	10 MPH	Dir:	E	Veh Mnvr/Ped Actn:				4	Obj Strk:			
24	104865168	0.733	09/14/2016 18:00	LEFT TURN, DIFFERENT ROADWAYS	\$ 500	0	0	0	1	1	1	1	3	0		
Unit	1 : 1	Alchl/Drgs:	0	Speed:	15 MPH	Dir:	W	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	5 MPH	Dir:	S	Veh Mnvr/Ped Actn:				8	Obj Strk:			
25	105454952	0.742	04/15/2018 06:07	FIXED OBJECT	\$ 17500	0	0	0	0	1	4	1	3	0	0	
Unit	1 : 11	Alchl/Drgs:	0	Speed:	15 MPH	Dir:	W	Veh Mnvr/Ped Actn:				4	Obj Strk: 51			

**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
26	105061193	0.752	04/03/2017 10:21	REAR END, SLOW OR STOP	\$ 4000	0	0	0	0	1	1	2	1	0		2
Unit	1 : 1	Alchl/Drgs:	0	Speed: 20 MPH Dir: E		Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed: 0 MPH Dir: E		Veh Mnvr/Ped Actn:				1	Obj Strk:					
27	105482319	0.760	04/25/2018 13:30	ANGLE	\$ 1600	0	0	0	0	1	1	2	1	0	3	1
Unit	1 : 4	Alchl/Drgs:	0	Speed: 10 MPH Dir: W		Veh Mnvr/Ped Actn:				5	Obj Strk:					
Unit	2 : 4	Alchl/Drgs:	0	Speed: 20 MPH Dir: E		Veh Mnvr/Ped Actn:				4	Obj Strk:					
28	105094221	0.800	04/06/2017 17:09	LEFT TURN, SAME ROADWAY	\$ 2000	0	0	0	0	1	1	2	1	0	1	1
Unit	1 : 1	Alchl/Drgs:	0	Speed: 8 MPH Dir: N		Veh Mnvr/Ped Actn:				8	Obj Strk:					
Unit	2 : 4	Alchl/Drgs:	0	Speed: 10 MPH Dir: E		Veh Mnvr/Ped Actn:				4	Obj Strk:					
29	104378493	0.839	05/11/2015 16:14	LEFT TURN, DIFFERENT ROADWAYS	\$ 1100	0	0	0	0	1	1	1	1	0		
Unit	1 : 1	Alchl/Drgs:	0	Speed: 10 MPH Dir: E		Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed: 5 MPH Dir: W		Veh Mnvr/Ped Actn:				8	Obj Strk:					
30	106151668	0.841	01/04/2020 18:36	REAR END, SLOW OR STOP	\$ 4000	0	0	0	0	2	4	2	1	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed: 20 MPH Dir: NE		Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 4	Alchl/Drgs:	0	Speed: 5 MPH Dir: NE		Veh Mnvr/Ped Actn:				11	Obj Strk:					
31	104494574	0.845	09/10/2015 16:47	ANGLE	\$ 5000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed: 20 MPH Dir: N		Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 4	Alchl/Drgs:	0	Speed: 20 MPH Dir: E		Veh Mnvr/Ped Actn:				4	Obj Strk:					
32	105142359	0.845	06/22/2017 15:56	ANGLE	\$ 13000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed: 15 MPH Dir: NW		Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed: 15 MPH Dir: NW		Veh Mnvr/Ped Actn:				4	Obj Strk:					
33	105472725	0.845	05/05/2018 23:56	ANGLE	\$ 1700	0	0	0	0	1	4	1	1	0	3	1
Unit	1 : 4	Alchl/Drgs:	0	Speed: 15 MPH Dir: NW		Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed: 20 MPH Dir: SW		Veh Mnvr/Ped Actn:				4	Obj Strk:					
34	106040397	0.845	10/17/2019 17:00	LEFT TURN, SAME ROADWAY	\$ 10500	0	0	0	1	1	1	1	1	0	3	1
Unit	1 : 2	Alchl/Drgs:	0	Speed: 10 MPH Dir: SW		Veh Mnvr/Ped Actn:				8	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed: 20 MPH Dir: NE		Veh Mnvr/Ped Actn:				4	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

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

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

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	34	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	5	14.71
Total Injury Crashes	5	14.71
Property Damage Only Crashes	29	85.29
Night Crashes	9	26.47
Wet Crashes	4	11.76
Alcohol/Drugs Involvement Crashes	2	5.88

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	34	100.00
Fatal Crashes	0	0.00
Class A Crashes	1	2.94
Class B Crashes	1	2.94
Class C Crashes	3	8.82
Property Damage Only Crashes	29	85.29

Vehicle Exposure Statistics

Annual ADT = 7500

Total Length = 0.178 (Miles)

0.286 (Kilometers)

Total Vehicle Exposure = 2.44 (MVMT)

3.93 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	1393.99	866.18
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	205.00	127.38
Night Crash Rate	369.00	229.28
Wet Crash Rate	164.00	101.90
EPDO Rate	5715.35	3551.35

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

Miscellaneous Statistics

Severity Index =	4.10
EPDO Crash Index =	139.40
Estimated Property Damage Total = \$	136200.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANGLE	8	23.53
FIXED OBJECT	1	2.94
HEAD ON	1	2.94
LEFT TURN, DIFFERENT ROADWAYS	3	8.82
LEFT TURN, SAME ROADWAY	5	14.71
PEDESTRIAN	1	2.94
REAR END, SLOW OR STOP	11	32.35
RIGHT TURN, DIFFERENT ROADWAYS	1	2.94
RIGHT TURN, SAME ROADWAY	2	5.88
SIDESWIPE, SAME DIRECTION	1	2.94

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	1	20.00
Class B Injuries	1	20.00
Class C Injuries	3	60.00
Total Non-Fatal Injuries	5	100.00
Total Injuries	5	100.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
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Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	3	8.82
Feb	2	5.88
Mar	4	11.76
Apr	5	14.71
May	5	14.71
Jun	2	5.88
Jul	1	2.94
Aug	0	0.00
Sep	3	8.82
Oct	3	8.82
Nov	2	5.88
Dec	4	11.76

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	6	17.65
Tue	6	17.65
Wed	2	5.88
Thu	8	23.53
Fri	3	8.82
Sat	6	17.65
Sun	3	8.82

**North Carolina Department of Transportation
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Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	1	2.94
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	1	2.94
0700-0759	1	2.94
0800-0859	0	0.00
0900-0959	1	2.94
1000-1059	3	8.82
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	3	8.82
1400-1459	2	5.88
1500-1559	4	11.76
1600-1659	5	14.71
1700-1759	3	8.82
1800-1859	3	8.82
1900-1959	1	2.94
2000-2059	0	0.00
2100-2159	3	8.82
2200-2259	0	0.00
2300-2359	3	8.82

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Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	21	2	0	23
Dark	7	2	0	9
Other	2	0	0	2
Total	30	4	0	34

Object Struck Summary

Object Type	Times Struck	Percent of Total
OVERHEAD PART UNDERPASS	1	33.33
PEDESTRIAN	2	66.67

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
COMMERCIAL BUS	2	2.86
PASSENGER CAR	45	64.29
PEDESTRIAN	2	2.86
PICKUP	4	5.71
SCHOOL BUS	1	1.43
SINGLE UNIT TRUCK (3 OR MORE AXLES)	1	1.43
SPORT UTILITY	13	18.57
UNKNOWN	2	2.86

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
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Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2015	6	0	0	6
2016	3	0	1	2
2017	10	0	2	8
2018	10	0	0	10
2019	4	0	2	2
2020	1	0	0	1
Total	34	0	5	29

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2015	0	0
2016	0	1
2017	0	2
2018	0	0
2019	0	2
2020	0	0
Total	0	5

Miscellaneous Totals

Year	Property Damage	EPDO Index
2015	\$ 27550	6.00
2016	\$ 14200	10.40
2017	\$ 31400	93.20
2018	\$ 45300	10.00
2019	\$ 13750	18.80
2020	\$ 4000	1.00
Total	\$ 136200	139.40

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2015	2	1	1	0	2	0	0
2016	1	1	1	0	0	0	0

**North Carolina Department of Transportation
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Year	Left Turn	Right Turn	Rear End	Run Off Road & Fixed Object	Angle	Side Swipe	Other
2017	2	1	5	0	2	0	0
2018	2	0	2	1	3	1	1
2019	1	0	1	0	1	0	1
2020	0	0	1	0	0	0	0
Total	8	3	11	1	8	1	2

**North Carolina Department of Transportation
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Strip Analysis Report**

Strip Diagram

Features	Milepost	Crash IDs
NC 86 COLUMBIA	0.67	104355645 104364752 104592789 104644618
		104761803 105011016 105328702 105373901
		105434861 105491232 105544869 105653065
		105746585 105792934 105800967 105824361
		105748774
	0.68	105319155 104540531 105217658
	0.69	105142349
	0.70	
	0.71	
	0.72	105103247
	0.73	105296203 104865168
	0.74	105454952
	0.75	105061193
	0.76	105482319
	0.77	
	0.78	
	0.79	
	0.80	105094221
	0.81	
	0.82	
0.83		
0.84	104378493 106151668	
HENDERSON	0.85	104494574 105142359 105472725 106040397

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

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
ROSEMARYDECKTIASTRIPTJF				76.8	8.4	7500	

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

County			Municipality			Y-Line Ft.	Begin Date	End Date	Years
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years	
ORANGE	68	7	All and Rural		0	3/1/2015	2/29/2020	5.00	

Location Text	Requestor
E. Rosemary St from NC 86 (N. Columbia St) to Henderson St	

Included Accidents	Old MP	New MP	Type
105800967		0.667	I
105454952		0.742	I
105482319		0.76	I
105094221		0.8	I

Excluded Accidents
104458325
104644616
104915606
105271558
105294540
105532154
105598098

Fiche Roads

Name	Code
ROSEMARY	50026492

Strip Road

Name	Code	Begin MP	End MP	Miles	Kilometers
ROSEMARY	50026492	0.667	0.845	0.178	0.286

**North Carolina Department of Transportation
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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
Unit	2 : 1	Alchl/Drugs:	0	Speed:	5 MPH	Dir:	S	Veh Mnvr/Ped Actn:				12	Obj Strk:			
9	105924176	1.507	06/18/2019 19:32	SIDESWIPE, SAME DIRECTION	\$ 1400	0	0	0	0	2	1	3	1	0	2	
Unit	1 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 4	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
10	105784524	1.508	02/14/2019 20:53	BACKING UP	\$ 2200	0	0	0	0	1	4	2	1	0	13	1
Unit	1 : 31	Alchl/Drugs:	0	Speed:	0 MPH	Dir:	N	Veh Mnvr/Ped Actn:				1	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				1	Obj Strk:			
11	104953103	1.518	11/28/2016 13:40	REAR END, SLOW OR STOP	\$ 4000	0	0	0	0	1	1	2	1	0	3	1
Unit	1 : 32	Alchl/Drugs:	7	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				1	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				1	Obj Strk:			
Unit	3 : 2	Alchl/Drugs:	0	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
12	104633096	1.522	01/11/2016 12:02	RIGHT TURN, SAME ROADWAY	\$ 2850	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 6	Alchl/Drugs:	0	Speed:	5 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 2	Alchl/Drugs:	0	Speed:	5 MPH	Dir:	N	Veh Mnvr/Ped Actn:				7	Obj Strk:			
13	105765170	1.522	01/30/2019 11:00	REAR END, TURN	\$ 4500	0	0	0	0	1	1	1	1	0		
Unit	1 : 2	Alchl/Drugs:	0	Speed:	25 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	N	Veh Mnvr/Ped Actn:				5	Obj Strk:			
14	105730355	1.526	12/16/2018 22:45	LEFT TURN, SAME ROADWAY	\$ 5500	0	0	0	0	1	4	1	1	0	0	2
Unit	1 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	S	Veh Mnvr/Ped Actn:				5	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
15	106175777	1.526	02/24/2020 19:18	FIXED OBJECT	\$ 1000	0	0	0	0	2	4	3	1	0	0	1
Unit	1 : 6	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	S	Veh Mnvr/Ped Actn:				5	Obj Strk: 34			
16	105366746	1.532	01/12/2018 19:05	PARKED MOTOR VEHICLE	\$ 1800	0	0	0	0	2	4	1	3	0	3	2
Unit	1 : 1	Alchl/Drugs:	7	Speed:	0 MPH	Dir:	SE	Veh Mnvr/Ped Actn:				2	Obj Strk: 20			
Unit	2 : 2	Alchl/Drugs:	0	Speed:	5 MPH	Dir:	SE	Veh Mnvr/Ped Actn:				12	Obj Strk: 20			
17	105578074	1.539	08/14/2018 12:44	LEFT TURN, SAME ROADWAY	\$ 2000	0	0	0	1	1	1	2	1	0	13	
Unit	1 : 4	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 3	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	SE	Veh Mnvr/Ped Actn:				8	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
18	105585217	1.539	08/20/2018 10:35	SIDESWIPE, SAME DIRECTION	\$ 2700	0	0	0	0	1	1	1	3	0	3	1
Unit	1 : 4	Alchl/Drugs:	0	Speed:	20 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 10	Alchl/Drugs:	0	Speed:	20 MPH	Dir:	N	Veh Mnvr/Ped Actn:				5	Obj Strk:			
19	105399729	1.540	02/16/2018 14:39	ANGLE	\$ 5000	0	0	0	0	1	1	1	2	0	0	2
Unit	1 : 1	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	N	Veh Mnvr/Ped Actn:				8	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
20	104534816	1.556	10/23/2015 13:29	ANGLE	\$ 1300	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	S	Veh Mnvr/Ped Actn:				5	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
21	105156327	1.556	06/29/2017 22:50	SIDESWIPE, SAME DIRECTION	\$ 2700	0	0	0	0	1	4	1	1	0		2
Unit	1 : 2	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	S	Veh Mnvr/Ped Actn:				16	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
22	105931072	1.558	06/14/2019 17:46	REAR END, SLOW OR STOP	\$ 8000	0	0	0	2	1	1	1	1	0	3	2
Unit	1 : 1	Alchl/Drugs:	0	Speed:	30 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH	Dir:	N	Veh Mnvr/Ped Actn:				1	Obj Strk:			
23	105800704	1.561	03/02/2019 13:20	ANGLE	\$ 2000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	5 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	5 MPH	Dir:	S	Veh Mnvr/Ped Actn:				5	Obj Strk:			
24	106129994	1.561	12/15/2019 14:40	SIDESWIPE, SAME DIRECTION	\$ 5000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 4	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	N	Veh Mnvr/Ped Actn:				5	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
25	106175778	1.562	02/24/2020 07:41	PARKED MOTOR VEHICLE	\$ 3200	0	0	0	0	1	1	2	1	0		0
Unit	1 : 14	Alchl/Drugs:	7	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				1	Obj Strk: 20			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk: 20			
26	104724760	1.565	04/18/2016 14:06	LEFT TURN, SAME ROADWAY	\$ 2000	0	0	0	0	1	1	1	3	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	S	Veh Mnvr/Ped Actn:				8	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH	Dir:	NW	Veh Mnvr/Ped Actn:				8	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
27	105271558	1.565	10/24/2017 09:41	REAR END, SLOW OR STOP	\$ 1800	0	0	0	0	1	1	2	1	0	3	1
Unit	1 : 4	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 4	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	S	Veh Mnvr/Ped Actn:				5	Obj Strk:			
28	105294540	1.565	11/07/2017 19:51	REAR END, SLOW OR STOP	\$ 1500	0	0	0	0	2	4	3	3	0		2
Unit	1 : 1	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				11	Obj Strk:			
29	105286130	1.568	11/04/2017 16:11	REAR END, SLOW OR STOP	\$ 400	0	0	0	0	1	1	2	1	0	0	2
Unit	1 : 1	Alchl/Drugs:	0	Speed:	5 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	0 MPH	Dir:	N	Veh Mnvr/Ped Actn:				1	Obj Strk:			
30	104355645	1.575	03/13/2015 21:00	ANGLE	\$ 6000	0	0	0	0	1	4	1	1	0	3	3
Unit	1 : 1	Alchl/Drugs:	7	Speed:	10 MPH	Dir:	E	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 32	Alchl/Drugs:	7	Speed:	30 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
31	104364752	1.575	04/28/2015 16:51	RIGHT TURN, SAME ROADWAY	\$ 11500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	10 MPH	Dir:	SW	Veh Mnvr/Ped Actn:				3	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	E	Veh Mnvr/Ped Actn:				4	Obj Strk:			
32	104458325	1.575	08/05/2015 09:05	SIDESWIPE, SAME DIRECTION	\$ 1100	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 12	Alchl/Drugs:	7	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				3	Obj Strk: 20			
Unit	2 : 10	Alchl/Drugs:	0	Speed:	3 MPH	Dir:	S	Veh Mnvr/Ped Actn:				12	Obj Strk:			
33	104592789	1.575	11/14/2015 14:36	LEFT TURN, SAME ROADWAY	\$ 1200	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 6	Alchl/Drugs:	0	Speed:	5 MPH	Dir:	S	Veh Mnvr/Ped Actn:				8	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	0	Speed:	2 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
34	104761803	1.575	05/16/2016 16:45	RIGHT TURN, SAME ROADWAY	\$ 4500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	E	Veh Mnvr/Ped Actn:				7	Obj Strk:			
Unit	2 : 6	Alchl/Drugs:	0	Speed:	20 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
35	105011016	1.575	02/04/2017 18:24	ANGLE	\$ 1100	0	0	0	0	1	4	1	1	0	3	
Unit	1 : 1	Alchl/Drugs:	0	Speed:	15 MPH	Dir:	NE	Veh Mnvr/Ped Actn:				8	Obj Strk:			
Unit	2 : 1	Alchl/Drugs:	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
36	105328702	1.575	12/05/2017 09:10	RIGHT TURN, DIFFERENT ROADWAYS	\$ 0	0	1	0	0	1	1	1	1	0	3	1
Unit	1 : 2	Alchl/Drgs:	0	Speed:	3 MPH	Dir:	E	Veh Mnvr/Ped Actn:				7	Obj Strk:		14	
Unit	2 : 24	Alchl/Drgs:	0	Speed:	0 MPH	Dir:		Veh Mnvr/Ped Actn:					Obj Strk:		14	
37	105434861	1.575	03/20/2018 15:06	SIDESWIPE, SAME DIRECTION	\$ 2900	0	0	0	0	1	1	2		0		
Unit	1 : 7	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	E	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	E	Veh Mnvr/Ped Actn:				5	Obj Strk:			
38	105532154	1.575	06/29/2018 17:28	SIDESWIPE, SAME DIRECTION	\$ 1250	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 6	Alchl/Drgs:	0	Speed:	15 MPH	Dir:	S	Veh Mnvr/Ped Actn:				12	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	5 MPH	Dir:	S	Veh Mnvr/Ped Actn:				7	Obj Strk:			
39	105653065	1.575	10/12/2018 15:44	LEFT TURN, DIFFERENT ROADWAYS	\$ 2000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	10 MPH	Dir:	W	Veh Mnvr/Ped Actn:				8	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	E	Veh Mnvr/Ped Actn:				4	Obj Strk:			
40	105746585	1.575	12/31/2018 21:25	ANGLE	\$ 1600	0	0	0	0	2	4	2	3	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	15 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	10 MPH	Dir:	E	Veh Mnvr/Ped Actn:				4	Obj Strk:			
41	105792934	1.575	02/23/2019 07:51	ANGLE	\$ 2150	0	0	0	0	2	1	3	1	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	25 MPH	Dir:	W	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	15 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4	Obj Strk:			
42	105647287	1.580	10/05/2018 08:49	SIDESWIPE, SAME DIRECTION	\$ 5000	0	0	0	0	1	1	1	2	0	3	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	30 MPH	Dir:	SE	Veh Mnvr/Ped Actn:				4	Obj Strk:			
Unit	2 : 3	Alchl/Drgs:	0	Speed:	30 MPH	Dir:	SE	Veh Mnvr/Ped Actn:				5	Obj Strk:			
43	105339138	1.581	12/14/2017 19:04	SIDESWIPE, SAME DIRECTION	\$ 1500	0	0	0	0	1	4	1		0		
Unit	1 : 1	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				5	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	S	Veh Mnvr/Ped Actn:				1	Obj Strk:			
44	105045734	1.583	03/16/2017 14:05	RIGHT TURN, SAME ROADWAY	\$ 7000	0	0	0	0	1	1	1	2	0	3	1
Unit	1 : 16	Alchl/Drgs:	0	Speed:	30 MPH	Dir:	S	Veh Mnvr/Ped Actn:				7	Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed:	30 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
45	104396203	1.600	05/27/2015 09:43	LEFT TURN, SAME ROADWAY	\$ 2000	0	0	1	0	1	1	1	3	0	3	1
Unit	1 : 22	Alchl/Drgs:	0	Speed:	0 MPH	Dir:		Veh Mnvr/Ped Actn:				Obj Strk:				
Unit	2 : 4	Alchl/Drgs:	0	Speed:	0 MPH	Dir:	SE	Veh Mnvr/Ped Actn:				8 Obj Strk:				
46	104355983	1.605	04/08/2015 09:11	REAR END, SLOW OR STOP	\$ 200	0	0	1	0	1	1	1	2	0		
Unit	1 : 1	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	N	Veh Mnvr/Ped Actn:				11 Obj Strk:				
Unit	2 : 21	Alchl/Drgs:	0	Speed:	0 MPH	Dir:		Veh Mnvr/Ped Actn:				Obj Strk:				
47	105078986	1.611	04/21/2017 10:39	LEFT TURN, SAME ROADWAY	\$ 8050	0	0	0	0	1	1	1	3	0	13	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4 Obj Strk:				
Unit	2 : 4	Alchl/Drgs:	0	Speed:	10 MPH	Dir:	S	Veh Mnvr/Ped Actn:				8 Obj Strk:				
48	104865088	1.652	09/05/2016 18:20	RAN OFF ROAD - RIGHT	\$ 3500	0	0	0	0	1	1	1	7	0	0	
Unit	1 : 4	Alchl/Drgs:	0	Speed:	40 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4 Obj Strk: 34				
49	104355631	1.653	03/06/2015 16:33	SIDESWIPE, SAME DIRECTION	\$ 7000	0	0	0	0	1	1	1	7	0	0	
Unit	1 : 2	Alchl/Drgs:	0	Speed:	25 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:				
50	105886399	1.656	05/14/2019 16:00	SIDESWIPE, SAME DIRECTION	\$ 7000	0	0	0	1	1	1	1	6	0	0	
Unit	1 : 4	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4 Obj Strk:				
Unit	2 : 1	Alchl/Drgs:	0	Speed:	25 MPH	Dir:	SE	Veh Mnvr/Ped Actn:				5 Obj Strk:				
51	105271555	1.657	04/12/2017 03:11	RAN OFF ROAD - RIGHT	\$ 20000	0	0	1	0	1	4	1	3	0		
Unit	1 : 1	Alchl/Drgs:	1	Speed:	35 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4 Obj Strk: 18				
52	105603620	1.665	09/05/2018 08:49	REAR END, SLOW OR STOP	\$ 2500	0	0	0	0	1	1	1	6	0	1	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	20 MPH	Dir:	S	Veh Mnvr/Ped Actn:				11 Obj Strk:				
Unit	2 : 4	Alchl/Drgs:	0	Speed:	25 MPH	Dir:	S	Veh Mnvr/Ped Actn:				11 Obj Strk:				
53	105904023	1.665	05/28/2019 14:38	HEAD ON	\$ 15800	0	0	0	1	1	1	1	7	0	13	1
Unit	1 : 4	Alchl/Drgs:	0	Speed:	30 MPH	Dir:	S	Veh Mnvr/Ped Actn:				4 Obj Strk:				
Unit	2 : 1	Alchl/Drgs:	0	Speed:	25 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4 Obj Strk:				
54	105359959	1.684	12/30/2017 22:43	RAN OFF ROAD - RIGHT	\$ 5300	0	0	0	0	1	4	1	7	0		
Unit	1 : 1	Alchl/Drgs:	1	Speed:	50 MPH	Dir:	N	Veh Mnvr/Ped Actn:				4 Obj Strk: 64				

**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
55	106042066	1.730	10/21/2019 15:11	REAR END, SLOW OR STOP	\$ 2000	0	0	0	0	1	1	1	1	0	14	1
Unit	1 : 1	Alchl/Drugs:	0	Speed: 25 MPH Dir: N		Veh Mnvr/Ped Actn:				11	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed: 0 MPH Dir: N		Veh Mnvr/Ped Actn:				11	Obj Strk:					
56	104576019	1.750	11/09/2015 17:47	PEDESTRIAN	\$ 3000	0	0	1	0	2	4	3	3	0	14	1
Unit	1 : 1	Alchl/Drugs:	0	Speed: 40 MPH Dir: S		Veh Mnvr/Ped Actn:				4	Obj Strk:		14			
Unit	2 : 24	Alchl/Drugs:	0	Speed: 0 MPH Dir:		Veh Mnvr/Ped Actn:					Obj Strk:		14			
57	104945696	1.750	11/11/2016 17:40	REAR END, SLOW OR STOP	\$ 7000	0	0	0	1	1	1	1	3	0	14	1
Unit	1 : 4	Alchl/Drugs:	0	Speed: 0 MPH Dir: N		Veh Mnvr/Ped Actn:				11	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed: 35 MPH Dir: N		Veh Mnvr/Ped Actn:				11	Obj Strk:					
58	105236012	1.750	09/21/2017 16:47	REAR END, SLOW OR STOP	\$ 10000	0	0	0	0	1	1	2	3	0	9	1
Unit	1 : 4	Alchl/Drugs:	0	Speed: 30 MPH Dir: S		Veh Mnvr/Ped Actn:				11	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed: 35 MPH Dir: S		Veh Mnvr/Ped Actn:				11	Obj Strk:					
59	105310538	1.750	11/25/2017 16:23	RAN OFF ROAD - LEFT	\$ 8150	0	0	0	0	1	1	1	3	0	14	1
Unit	1 : 1	Alchl/Drugs:	0	Speed: 35 MPH Dir: N		Veh Mnvr/Ped Actn:				4	Obj Strk:		48			
60	105258315	1.837	10/05/2017 20:00	LEFT TURN, DIFFERENT ROADWAYS	\$ 5000	0	0	0	0	1	4	1	3	0	1	1
Unit	1 : 1	Alchl/Drugs:	0	Speed: 5 MPH Dir: NE		Veh Mnvr/Ped Actn:				8	Obj Strk:					
Unit	2 : 1	Alchl/Drugs:	0	Speed: 20 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/Drugs - Alcohol Drugs Suspected
 Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
 Obj Strk - Object Struck

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

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	60	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	11	18.33
Total Injury Crashes	11	18.33
Property Damage Only Crashes	49	81.67
Night Crashes	16	26.67
Wet Crashes	10	16.67
Alcohol/Drugs Involvement Crashes	2	3.33

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	60	100.00
Fatal Crashes	0	0.00
Class A Crashes	1	1.67
Class B Crashes	5	8.33
Class C Crashes	5	8.33
Property Damage Only Crashes	49	81.67

Vehicle Exposure Statistics

Annual ADT = 17000

Total Length = 0.334 (Miles)

0.538 (Kilometers)

Total Vehicle Exposure = 10.37 (MVMT)

16.69 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	578.39	359.39
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	106.04	65.89
Night Crash Rate	154.24	95.84
Wet Crash Rate	96.40	59.90
EPDO Rate	2022.42	1256.67

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

Miscellaneous Statistics

Severity Index =	3.50
EPDO Crash Index =	209.80
Estimated Property Damage Total = \$	225800.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANGLE	7	11.67
BACKING UP	1	1.67
FIXED OBJECT	1	1.67
HEAD ON	1	1.67
LEFT TURN, DIFFERENT ROADWAYS	2	3.33
LEFT TURN, SAME ROADWAY	6	10.00
PARKED MOTOR VEHICLE	2	3.33
PEDALCYCLIST	1	1.67
PEDESTRIAN	1	1.67
RAN OFF ROAD - LEFT	1	1.67
RAN OFF ROAD - RIGHT	3	5.00
REAR END, SLOW OR STOP	13	21.67
REAR END, TURN	1	1.67
RIGHT TURN, DIFFERENT ROADWAYS	1	1.67
RIGHT TURN, SAME ROADWAY	5	8.33
SIDESWIPE, SAME DIRECTION	14	23.33

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	1	8.33
Class B Injuries	5	41.67
Class C Injuries	6	50.00
Total Non-Fatal Injuries	12	100.00
Total Injuries	12	100.00

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

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	4	6.67
Feb	6	10.00
Mar	5	8.33
Apr	5	8.33
May	4	6.67
Jun	6	10.00
Jul	0	0.00
Aug	3	5.00
Sep	4	6.67
Oct	9	15.00
Nov	7	11.67
Dec	7	11.67

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	11	18.33
Tue	11	18.33
Wed	6	10.00
Thu	9	15.00
Fri	13	21.67
Sat	8	13.33
Sun	2	3.33

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

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	1	1.67
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	2	3.33
0800-0859	2	3.33
0900-0959	5	8.33
1000-1059	3	5.00
1100-1159	1	1.67
1200-1259	2	3.33
1300-1359	5	8.33
1400-1459	7	11.67
1500-1559	3	5.00
1600-1659	8	13.33
1700-1759	5	8.33
1800-1859	2	3.33
1900-1959	6	10.00
2000-2059	2	3.33
2100-2159	3	5.00
2200-2259	3	5.00
2300-2359	0	0.00

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

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	40	3	0	43
Dark	10	6	0	16
Other	0	1	0	1
Total	50	10	0	60

Object Struck Summary

Object Type	Times Struck	Percent of Total
MEDIAN BARRIER FACE	1	6.25
MOVABLE OBJECT	1	6.25
OTHER FIXED OBJECT	1	6.25
PARKED MOTOR VEHICLE	5	31.25
PEDALCYCLIST	2	12.50
PEDESTRIAN	4	25.00
UTILITY POLE	2	12.50

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
COMMERCIAL BUS	7	6.03
LIGHT TRUCK (MINI-VAN, PANEL)	2	1.72
MOPED	1	0.86
MOTOR SCOOTER OR MOTOR BIKE	1	0.86
PASSENGER CAR	65	56.03
PEDALCYCLE	1	0.86
PEDESTRIAN	2	1.72
PICKUP	8	6.90
POLICE	1	0.86
SCHOOL BUS	1	0.86
SINGLE UNIT TRUCK (2-AXLE, 6-TIRE)	2	1.72
SPORT UTILITY	18	15.52
TRACTOR/SEMI-TRAILER	1	0.86
TRUCK/TRAILER	1	0.86
UNKNOWN	3	2.59
UNKNOWN HEAVY TRUCK	1	0.86
VAN	1	0.86

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

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2015	10	0	3	7
2016	6	0	1	5
2017	17	0	3	14
2018	12	0	1	11
2019	13	0	3	10
2020	2	0	0	2
Total	60	0	11	49

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2015	0	3
2016	0	1
2017	0	3
2018	0	1
2019	0	4
2020	0	0
Total	0	12

Miscellaneous Totals

Year	Property Damage	EPDO Index
2015	\$ 35900	32.20
2016	\$ 23850	13.40
2017	\$ 76250	107.60
2018	\$ 33550	19.40
2019	\$ 52050	35.20
2020	\$ 4200	2.00
Total	\$ 225800	209.80

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2015	2	1	2	0	2	2	1
2016	1	2	2	1	0	0	0

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

Year	Left Turn	Right Turn	Rear End	Run Off Road & Fixed Object	Angle	Side Swipe	Other
2017	2	2	5	3	1	3	1
2018	3	0	1	0	2	5	1
2019	0	1	4	0	2	4	2
2020	0	0	0	1	0	0	1
Total	8	6	14	5	7	14	6

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

Strip Diagram

Features	Milepost	Crash IDs	
SR 1010 FRANKLIN	1.50	104638171 105258275 105277830 105621408 105762508 105924164 106093058 105137204	
	1.51	105924176 105784524	
	1.52	104953103 104633096 105765170	
	1.53	105730355 106175777 105366746	
	1.54	105578074 105585217 105399729	
	1.55		
	1.56	104534816 105156327 105931072 105800704 106129994 106175778	
	1.57	104724760 105271558 105294540 105286130	
	ROSEMARY	1.58	104355645 104364752 104458325 104592789 104761803 105011016 105328702 105434861 105532154 105653065 105746585 105792934 105647287 105339138 105045734
		1.59	
		1.60	104396203
		1.61	104355983 105078986
		1.62	
		1.63	
		1.64	
1.65		104865088 104355631	
COLUMBIA NORTH		1.66	105886399 105271555 105603620 105904023
		1.67	
	1.68	105359959	
	1.69		
	1.70		
	1.71		
	1.72		
	1.73	106042066	
	1.74		
	1.75	104576019 104945696 105236012 105310538	
1.76			
1.77			
1.78			
1.79			
1.80			
1.81			
1.82			
1.83			
STEPHEN	1.84	105258315	

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

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
ROSEMARYDECKTIANC86STRIPTJF				76.8	8.4	17000	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	3/1/2015	2/29/2020	5.00	

Location Text	Requestor
NC 86 (Martin Luther King Jr. Blvd/Columbia St) from SR 1010 (Franklin St) to Stephens St	

Included Accidents	Old MP	New MP	Type
105137204		1.505	I
106129994		1.561	I
105800704		1.561	I
105271555		1.657	I
104576019		1.75	I
105294540		1.565	I
105271558		1.565	I
105647287		1.58	I
104396203		1.6	I
104945696		1.75	I
105236012		1.75	I
105310538		1.75	I

Excluded Accidents
104355919
104413584
104459365
104644616
104644618
104654588
104915606
104986156
105307127
105318882
105373901
105383108

**North Carolina Department of Transportation
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Strip Analysis Report**

Excluded Accidents

105491232
105532135
105544869
105598098
105987043
106184244

Fiche Roads

Name	Code
NC 86	30000086
MARTIN LUTHER KING	50019060
COLUMBIA	50006670

Strip Road

Name	Code	Begin MP	End MP	Miles	Kilometers
NC 86	30000086	1.503	1.837	0.334	0.538

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
9	105603620	09/05/2018 08:49	REAR END, SLOW OR STOP	\$ 2500	0	0	0	0	1	1	1	6	0	1	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 20 MPH	Dir: S	Veh Mnvr / Ped Actn:				11	Obj Strk:					
Unit	2 : 4	Alchl/Drgs: 0	Speed: 25 MPH	Dir: S	Veh Mnvr / Ped Actn:				11	Obj Strk:					

10	105886399	05/14/2019 16:00	SIDESWIPE, SAME DIRECTION	\$ 7000	0	0	0	1	1	1	1	6	0	0	
Unit	1 : 4	Alchl/Drgs: 0	Speed: 20 MPH	Dir: S	Veh Mnvr / Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs: 0	Speed: 25 MPH	Dir: SE	Veh Mnvr / Ped Actn:				5	Obj Strk:					

11	105904023	05/28/2019 14:38	HEAD ON	\$ 15800	0	0	0	1	1	1	1	7	0	13	1
Unit	1 : 4	Alchl/Drgs: 0	Speed: 30 MPH	Dir: S	Veh Mnvr / Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs: 0	Speed: 25 MPH	Dir: N	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

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	11	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	4	36.36
Total Injury Crashes	4	36.36
Property Damage Only Crashes	7	63.64
Night Crashes	2	18.18
Wet Crashes	0	0.00
Alcohol/Drugs Involvement Crashes	2	18.18

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	11	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	1	9.09
Class C Crashes	3	27.27
Property Damage Only Crashes	7	63.64

Vehicle Exposure Statistics

Annual ADT = 19000

Total Vehicle Exposure = 34.71 (MEV)

Crash Rate	Crashes Per 100 Million Vehicles Entered
Total Crash Rate	31.69
Fatal Crash Rate	0.00
Non Fatal Crash Rate	11.52
Night Crash Rate	5.76
Wet Crash Rate	0.00
EPDO Rate	116.96

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
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Miscellaneous Statistics

Severity Index =	3.69
EPDO Crash Index =	40.60
Estimated Property Damage Total = \$	74301.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANGLE	1	9.09
HEAD ON	1	9.09
RAN OFF ROAD - RIGHT	3	27.27
REAR END, SLOW OR STOP	4	36.36
SIDESWIPE, SAME DIRECTION	2	18.18

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	1	25.00
Class C Injuries	3	75.00
Total Non-Fatal Injuries	4	100.00
Total Injuries	4	100.00

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Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	0	0.00
Feb	0	0.00
Mar	1	9.09
Apr	1	9.09
May	2	18.18
Jun	1	9.09
Jul	2	18.18
Aug	0	0.00
Sep	2	18.18
Oct	0	0.00
Nov	0	0.00
Dec	2	18.18

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	1	9.09
Tue	3	27.27
Wed	4	36.36
Thu	0	0.00
Fri	1	9.09
Sat	1	9.09
Sun	1	9.09

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Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	1	9.09
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	1	9.09
0800-0859	1	9.09
0900-0959	0	0.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	1	9.09
1300-1359	0	0.00
1400-1459	2	18.18
1500-1559	0	0.00
1600-1659	3	27.27
1700-1759	0	0.00
1800-1859	1	9.09
1900-1959	0	0.00
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	1	9.09
2300-2359	0	0.00

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Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	9	0	0	9
Dark	2	0	0	2
Other	0	0	0	0
Total	11	0	0	11

Object Struck Summary

Object Type	Times Struck	Percent of Total
MOVABLE OBJECT	1	33.33
OTHER FIXED OBJECT	1	33.33
UTILITY POLE	1	33.33

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	10	52.63
PICKUP	2	10.53
SPORT UTILITY	7	36.84

**North Carolina Department of Transportation
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Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2015	2	0	0	2
2016	1	0	0	1
2017	4	0	2	2
2018	2	0	0	2
2019	2	0	2	0
2020	0	0	0	0
Total	11	0	4	7

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2015	0	0
2016	0	0
2017	0	2
2018	0	0
2019	0	2
2020	0	0
Total	0	4

Miscellaneous Totals

Year	Property Damage	EPDO Index
2015	\$ 11000	2.00
2016	\$ 3500	1.00
2017	\$ 33000	18.80
2018	\$ 4001	2.00
2019	\$ 22800	16.80
2020	\$ 0	0.00
Total	\$ 74301	40.60

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &				Other
				Fixed Object	Angle	Side Swipe		
2015	0	0	1	0	0	1	0	
2016	0	0	0	1	0	0	0	

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Year	Run Off Road &						
	Left Turn	Right Turn	Rear End	Fixed Object	Angle	Side Swipe	Other
2017	0	0	1	2	1	0	0
2018	0	0	2	0	0	0	0
2019	0	0	0	0	0	1	1
2020	0	0	0	0	0	0	0
Total	0	0	4	3	1	2	1

**North Carolina Department of Transportation
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Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
ROSEMARYDECKTIAINT1TJF				76.8	8.4	19000	

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

County			Municipality			Y-Line Ft.	Begin Date	End Date	Years
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years	
ORANGE	68	7	All and Rural		150	3/1/2015	2/29/2020	5.00	

Location Text	Requestor
NC 86 (Martin Luther King Blvd) at Columbia St/North St	

Included Accidents
105550231

Excluded Accidents
105383108

Fiche Roads

Name	Code
NC 86	30000086
MARTIN LUTHER KING	50019060
COLUMBIA	50006670
NORTH	50021532

Intersection Road Combinations

Name	Code	Code	Name
NC 86	30000086	50006670	COLUMBIA
NC 86	30000086	50021532	NORTH
MARTIN LUTHER KING	50019060	50006670	COLUMBIA
MARTIN LUTHER KING	50019060	50021532	NORTH
COLUMBIA	50006670	50021532	NORTH

**North Carolina Department of Transportation
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Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
Unit	2 : 4	Alchl/Drgs: 0	Speed: 0 MPH Dir: W	Veh Mnvr / Ped Actn:	3	Obj Strk:									
Unit	3 : 4	Alchl/Drgs: 0	Speed: 0 MPH Dir: W	Veh Mnvr / Ped Actn:	3	Obj Strk:									
9	104724760	04/18/2016 14:06	LEFT TURN, SAME ROADWAY	\$ 2000	0	0	0	0	1	1	1	3	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: S	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: NW	Veh Mnvr / Ped Actn:	8	Obj Strk:									
10	104761803	05/16/2016 16:45	RIGHT TURN, SAME ROADWAY	\$ 4500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 15 MPH Dir: E	Veh Mnvr / Ped Actn:	7	Obj Strk:									
Unit	2 : 6	Alchl/Drgs: 0	Speed: 20 MPH Dir: N	Veh Mnvr / Ped Actn:	4	Obj Strk:									
11	104915606	10/28/2016 18:25	SIDESWIPE, OPPOSITE DIRECTION	\$ 1000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 12	Alchl/Drgs: 0	Speed: 5 MPH Dir: S	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn:	1	Obj Strk:									
12	105011016	02/04/2017 18:24	ANGLE	\$ 1100	0	0	0	0	1	4	1	1	0	3	
Unit	1 : 1	Alchl/Drgs: 0	Speed: 15 MPH Dir: NE	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: S	Veh Mnvr / Ped Actn:	1	Obj Strk:									
13	105045734	03/16/2017 14:05	RIGHT TURN, SAME ROADWAY	\$ 7000	0	0	0	0	1	1	1	2	0	3	1
Unit	1 : 16	Alchl/Drgs: 0	Speed: 30 MPH Dir: S	Veh Mnvr / Ped Actn:	7	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: S	Veh Mnvr / Ped Actn:	1	Obj Strk:									
14	105076551	04/10/2017 14:46	REAR END, SLOW OR STOP	\$ 1500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: E	Veh Mnvr / Ped Actn:	12	Obj Strk:									
Unit	2 : 4	Alchl/Drgs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn:	1	Obj Strk:									
15	105095484	05/04/2017 09:04	REAR END, SLOW OR STOP	\$ 1200	0	0	0	0	1	1	1	1	0	3	2
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn:	1	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: E	Veh Mnvr / Ped Actn:	12	Obj Strk:									
16	105142349	06/20/2017 13:41	REAR END, SLOW OR STOP	\$ 1900	0	0	0	0	1	1	1	3	0	3	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 20 MPH Dir: W	Veh Mnvr / Ped Actn:	1	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: W	Veh Mnvr / Ped Actn:	4	Obj Strk:									
17	105156327	06/29/2017 22:50	SIDESWIPE, SAME DIRECTION	\$ 2700	0	0	0	0	1	4	1	1	0		2
Unit	1 : 2	Alchl/Drgs: 0	Speed: 10 MPH Dir: S	Veh Mnvr / Ped Actn:	16	Obj Strk:									

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Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
Unit	2 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: S		Veh Mnvr / Ped Actn:				4	Obj Strk:					
18	105187671	08/06/2017 15:22	REAR END, SLOW OR STOP	\$ 300	0	0	0	4	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: E		Veh Mnvr / Ped Actn:				11	Obj Strk:					
Unit	2 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: E		Veh Mnvr / Ped Actn:				12	Obj Strk:					
19	105217658	09/05/2017 19:19	LEFT TURN, SAME ROADWAY	\$ 1500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: SW		Veh Mnvr / Ped Actn:				12	Obj Strk:					
Unit	2 : 1	Alchl/Drgs: 0	Speed: 25 MPH Dir: SW		Veh Mnvr / Ped Actn:				4	Obj Strk:					
20	105271558	10/24/2017 09:41	REAR END, SLOW OR STOP	\$ 1800	0	0	0	0	1	1	2	1	0	3	1
Unit	1 : 4	Alchl/Drgs: 0	Speed: 15 MPH Dir: S		Veh Mnvr / Ped Actn:				4	Obj Strk:					
Unit	2 : 4	Alchl/Drgs: 0	Speed: 10 MPH Dir: S		Veh Mnvr / Ped Actn:				5	Obj Strk:					
21	105286130	11/04/2017 16:11	REAR END, SLOW OR STOP	\$ 400	0	0	0	0	1	1	2	1	0	0	2
Unit	1 : 1	Alchl/Drgs: 0	Speed: 5 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:					
22	105294540	11/07/2017 19:51	REAR END, SLOW OR STOP	\$ 1500	0	0	0	0	2	4	3	3	0		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:				11	Obj Strk:					
23	105319155	12/01/2017 10:47	REAR END, SLOW OR STOP	\$ 2500	0	0	0	0	1	1	1	3	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: W		Veh Mnvr / Ped Actn:				1	Obj Strk:					
Unit	2 : 4	Alchl/Drgs: 0	Speed: 20 MPH Dir: W		Veh Mnvr / Ped Actn:				4	Obj Strk:					
24	105328702	12/05/2017 09:10	RIGHT TURN, DIFFERENT ROADWAYS	\$ 0	0	1	0	0	1	1	1	1	0	3	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 3 MPH Dir: E		Veh Mnvr / Ped Actn:				7	Obj Strk: 14					
Unit	2 : 24	Alchl/Drgs: 0	Speed: 0 MPH Dir:		Veh Mnvr / Ped Actn:					Obj Strk: 14					
25	105339138	12/14/2017 19:04	SIDESWIPE, SAME DIRECTION	\$ 1500	0	0	0	0	1	4	1		0		
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: S		Veh Mnvr / Ped Actn:				5	Obj Strk:					
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: S		Veh Mnvr / Ped Actn:				1	Obj Strk:					
26	105373901	01/16/2018 17:10	REAR END, SLOW OR STOP	\$ 2000	0	0	0	0	1	2	1		0		
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: W		Veh Mnvr / Ped Actn:				1	Obj Strk:					
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: W		Veh Mnvr / Ped Actn:				4	Obj Strk:					

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Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
27	105434861	03/20/2018 15:06	SIDESWIPE, SAME DIRECTION	\$ 2900	0	0	0	0	1	1	2	0			
Unit	1 : 7	Alchl/Drugs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn: 4				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn: 5				Obj Strk:							
28	105491232	05/20/2018 21:53	LEFT TURN, SAME ROADWAY	\$ 6000	0	0	0	0	1	3	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs: 0	Speed: 15 MPH Dir: E	Veh Mnvr / Ped Actn: 8				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 20 MPH Dir: W	Veh Mnvr / Ped Actn: 4				Obj Strk:							
29	105532154	06/29/2018 17:28	SIDESWIPE, SAME DIRECTION	\$ 1250	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 6	Alchl/Drugs: 0	Speed: 15 MPH Dir: S	Veh Mnvr / Ped Actn: 12				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 5 MPH Dir: S	Veh Mnvr / Ped Actn: 7				Obj Strk:							
30	105544869	07/12/2018 10:28	REAR END, SLOW OR STOP	\$ 1000	0	0	0	0	1	1	1	1	0	3	2
Unit	1 : 1	Alchl/Drugs: 0	Speed: 5 MPH Dir: W	Veh Mnvr / Ped Actn: 11				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 0 MPH Dir: W	Veh Mnvr / Ped Actn: 11				Obj Strk:							
31	105598098	07/31/2018 11:15	BACKING UP	\$ 1000	0	0	0	0	10	1	9	1	0	3	3
Unit	1 : 2	Alchl/Drugs: 7	Speed: 10 MPH Dir: W	Veh Mnvr / Ped Actn: 10				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn: 1				Obj Strk:							
32	105647287	10/05/2018 08:49	SIDESWIPE, SAME DIRECTION	\$ 5000	0	0	0	0	1	1	1	2	0	3	1
Unit	1 : 1	Alchl/Drugs: 0	Speed: 30 MPH Dir: SE	Veh Mnvr / Ped Actn: 4				Obj Strk:							
Unit	2 : 3	Alchl/Drugs: 0	Speed: 30 MPH Dir: SE	Veh Mnvr / Ped Actn: 5				Obj Strk:							
33	105653065	10/12/2018 15:44	LEFT TURN, DIFFERENT ROADWAYS	\$ 2000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs: 0	Speed: 10 MPH Dir: W	Veh Mnvr / Ped Actn: 8				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 20 MPH Dir: E	Veh Mnvr / Ped Actn: 4				Obj Strk:							
34	105748774	12/29/2018 23:49	HEAD ON	\$ 9000	0	0	0	0	1	4	1	2	0	3	1
Unit	1 : 4	Alchl/Drugs: 1	Speed: 30 MPH Dir: E	Veh Mnvr / Ped Actn: 6				Obj Strk:							
Unit	2 : 2	Alchl/Drugs: 0	Speed: 0 MPH Dir: W	Veh Mnvr / Ped Actn: 1				Obj Strk:							
Unit	3 : 1	Alchl/Drugs: 0	Speed: 20 MPH Dir: E	Veh Mnvr / Ped Actn: 4				Obj Strk:							
35	105746585	12/31/2018 21:25	ANGLE	\$ 1600	0	0	0	0	2	4	2	3	0	3	1
Unit	1 : 1	Alchl/Drugs: 0	Speed: 15 MPH Dir: S	Veh Mnvr / Ped Actn: 4				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 10 MPH Dir: E	Veh Mnvr / Ped Actn: 4				Obj Strk:							

**North Carolina Department of Transportation
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Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
36	105792934	02/23/2019 07:51	ANGLE	\$ 2150	0	0	0	0	2	1	3	1	0	3	1
Unit	1 : 1	Alchl/Drugs: 0	Speed: 25 MPH Dir: W	Veh Mnvr / Ped Actn: 4				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 15 MPH Dir: N	Veh Mnvr / Ped Actn: 4				Obj Strk:							
37	105800704	03/02/2019 13:20	ANGLE	\$ 2000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drugs: 0	Speed: 5 MPH Dir: S	Veh Mnvr / Ped Actn: 4				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 5 MPH Dir: S	Veh Mnvr / Ped Actn: 5				Obj Strk:							
38	105800967	03/10/2019 00:02	PEDESTRIAN	\$ 0	0	0	1	0	1	4	2	1	12	3	1
Unit	1 : 32	Alchl/Drugs: 7	Speed: 5 MPH Dir: N	Veh Mnvr / Ped Actn: 8				Obj Strk:							
Unit	2 : 24	Alchl/Drugs: 2	Speed: 0 MPH Dir:	Veh Mnvr / Ped Actn:				Obj Strk:							
39	105824361	03/25/2019 16:44	REAR END, SLOW OR STOP	\$ 1100	0	0	0	0	2	1	3	1	0	3	2
Unit	1 : 1	Alchl/Drugs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn: 1				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 5 MPH Dir: E	Veh Mnvr / Ped Actn: 4				Obj Strk:							
40	105931072	06/14/2019 17:46	REAR END, SLOW OR STOP	\$ 8000	0	0	0	2	1	1	1	1	0	3	2
Unit	1 : 1	Alchl/Drugs: 0	Speed: 30 MPH Dir: N	Veh Mnvr / Ped Actn: 4				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 0 MPH Dir: N	Veh Mnvr / Ped Actn: 1				Obj Strk:							
41	106129994	12/15/2019 14:40	SIDESWIPE, SAME DIRECTION	\$ 5000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 4	Alchl/Drugs: 0	Speed: 15 MPH Dir: N	Veh Mnvr / Ped Actn: 5				Obj Strk:							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 15 MPH Dir: N	Veh Mnvr / Ped Actn: 4				Obj Strk:							
42	106175778	02/24/2020 07:41	PARKED MOTOR VEHICLE	\$ 3200	0	0	0	0	1	1	2	1	0	0	
Unit	1 : 14	Alchl/Drugs: 7	Speed: 0 MPH Dir: S	Veh Mnvr / Ped Actn: 1				Obj Strk: 20							
Unit	2 : 1	Alchl/Drugs: 0	Speed: 10 MPH Dir: S	Veh Mnvr / Ped Actn: 4				Obj Strk: 20							

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/Drugs - Alcohol Drugs Suspected
 Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
 Obj Strk - Object Struck

**North Carolina Department of Transportation
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Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	42	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	5	11.90
Total Injury Crashes	5	11.90
Property Damage Only Crashes	37	88.10
Night Crashes	9	21.43
Wet Crashes	4	9.52
Alcohol/Drugs Involvement Crashes	2	4.76

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	42	100.00
Fatal Crashes	0	0.00
Class A Crashes	1	2.38
Class B Crashes	2	4.76
Class C Crashes	2	4.76
Property Damage Only Crashes	37	88.10

Vehicle Exposure Statistics

Annual ADT = 24500

Total Vehicle Exposure = 44.76 (MEV)

Crash Rate	Crashes Per 100 Million Vehicles Entered
Total Crash Rate	93.83
Fatal Crash Rate	0.00
Non Fatal Crash Rate	11.17
Night Crash Rate	20.11
Wet Crash Rate	8.94
EPDO Rate	329.30

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
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Miscellaneous Statistics

Severity Index =	3.51
EPDO Crash Index =	147.40
Estimated Property Damage Total = \$	120650.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANGLE	6	14.29
BACKING UP	1	2.38
HEAD ON	1	2.38
LEFT TURN, DIFFERENT ROADWAYS	1	2.38
LEFT TURN, SAME ROADWAY	5	11.90
PARKED MOTOR VEHICLE	1	2.38
PEDESTRIAN	1	2.38
REAR END, SLOW OR STOP	14	33.33
RIGHT TURN, DIFFERENT ROADWAYS	1	2.38
RIGHT TURN, SAME ROADWAY	3	7.14
SIDESWIPE, OPPOSITE DIRECTION	1	2.38
SIDESWIPE, SAME DIRECTION	7	16.67

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	1	11.11
Class B Injuries	2	22.22
Class C Injuries	6	66.67
Total Non-Fatal Injuries	9	100.00
Total Injuries	9	100.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	2	4.76
Feb	3	7.14
Mar	6	14.29
Apr	3	7.14
May	4	9.52
Jun	4	9.52
Jul	2	4.76
Aug	2	4.76
Sep	1	2.38
Oct	6	14.29
Nov	3	7.14
Dec	6	14.29

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	7	16.67
Tue	9	21.43
Wed	2	4.76
Thu	6	14.29
Fri	8	19.05
Sat	6	14.29
Sun	4	9.52

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	1	2.38
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	2	4.76
0800-0859	1	2.38
0900-0959	5	11.90
1000-1059	2	4.76
1100-1159	1	2.38
1200-1259	0	0.00
1300-1359	3	7.14
1400-1459	6	14.29
1500-1559	3	7.14
1600-1659	4	9.52
1700-1759	3	7.14
1800-1859	2	4.76
1900-1959	3	7.14
2000-2059	0	0.00
2100-2159	3	7.14
2200-2259	1	2.38
2300-2359	2	4.76

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	28	2	1	31
Dark	7	2	0	9
Other	2	0	0	2
Total	37	4	1	42

Object Struck Summary

Object Type	Times Struck	Percent of Total
PARKED MOTOR VEHICLE	3	60.00
PEDESTRIAN	2	40.00

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
COMMERCIAL BUS	3	3.49
LIGHT TRUCK (MINI-VAN, PANEL)	1	1.16
MOTOR SCOOTER OR MOTOR BIKE	1	1.16
PASSENGER CAR	56	65.12
PEDESTRIAN	2	2.33
PICKUP	5	5.81
SCHOOL BUS	1	1.16
SINGLE UNIT TRUCK (2-AXLE, 6-TIRE)	1	1.16
SPORT UTILITY	10	11.63
TRACTOR/SEMI-TRAILER	1	1.16
TRUCK/TRAILER	2	2.33
UNKNOWN	2	2.33
UNKNOWN HEAVY TRUCK	1	1.16

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2015	7	0	1	6
2016	4	0	0	4
2017	14	0	2	12
2018	10	0	0	10
2019	6	0	2	4
2020	1	0	0	1
Total	42	0	5	37

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2015	0	1
2016	0	0
2017	0	5
2018	0	0
2019	0	3
2020	0	0
Total	0	9

Miscellaneous Totals

Year	Property Damage	EPDO Index
2015	\$ 25850	14.40
2016	\$ 16700	4.00
2017	\$ 24900	97.20
2018	\$ 31750	10.00
2019	\$ 18250	20.80
2020	\$ 3200	1.00
Total	\$ 120650	147.40

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2015	2	1	1	0	2	1	0
2016	1	1	1	0	0	1	0

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Year	Run Off Road &						
	Left Turn	Right Turn	Rear End	Fixed Object	Angle	Side Swipe	Other
2017	1	2	8	0	1	2	0
2018	2	0	2	0	1	3	2
2019	0	0	2	0	2	1	1
2020	0	0	0	0	0	0	1
Total	6	4	14	0	6	8	4

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
ROSEMARYDECKTIAINT2TJF				76.8	8.4	24500	

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

County			Municipality			Y-Line Ft.	Begin Date	End Date	Years
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years	
ORANGE	68	7	All and Rural		150	3/1/2015	2/29/2020	5.00	

Location Text	Requestor
NC 86 (N. Columbia St) at Rosemary St	

Included Accidents
105800967
106129994
105800704
105931072
104396203

Excluded Accidents
104644616

Fiche Roads

Name	Code
NC 86	30000086
COLUMBIA	50006670
ROSEMARY	50026492

Intersection Road Combinations

Name	Code	Code	Name
NC 86	30000086	50026492	ROSEMARY
COLUMBIA	50006670	50026492	ROSEMARY

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
Unit	2 : 1	Alchl/Drgs: 7	Speed: 0 MPH Dir: N	Veh Mnvr / Ped Actn:	2	Obj Strk:									
9	106001910	09/15/2019 19:03	REAR END, SLOW OR STOP	\$ 2500	0	0	0	0	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 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: N	Veh Mnvr / Ped Actn:	4	Obj Strk:									
10	106040397	10/17/2019 17:00	LEFT TURN, SAME ROADWAY	\$ 10500	0	0	0	1	1	1	1	1	0	3	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 10 MPH Dir: SW	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: NE	Veh Mnvr / Ped Actn:	4	Obj Strk:									
11	106151668	01/04/2020 18:36	REAR END, SLOW OR STOP	\$ 4000	0	0	0	0	2	4	2	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: NE	Veh Mnvr / Ped Actn:	4	Obj Strk:									
Unit	2 : 4	Alchl/Drgs: 0	Speed: 5 MPH Dir: NE	Veh Mnvr / Ped Actn:	11	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

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	11	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	1	9.09
Total Injury Crashes	1	9.09
Property Damage Only Crashes	10	90.91
Night Crashes	3	27.27
Wet Crashes	2	18.18
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	11	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	0	0.00
Class C Crashes	1	9.09
Property Damage Only Crashes	10	90.91

Vehicle Exposure Statistics

Annual ADT = 8500

Total Vehicle Exposure = 15.53 (MEV)

Crash Rate	Crashes Per 100 Million Vehicles Entered
Total Crash Rate	70.83
Fatal Crash Rate	0.00
Non Fatal Crash Rate	6.44
Night Crash Rate	19.32
Wet Crash Rate	12.88
EPDO Rate	118.48

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Miscellaneous Statistics

Severity Index =	1.67
EPDO Crash Index =	18.40
Estimated Property Damage Total = \$	42900.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANGLE	3	27.27
BACKING UP	1	9.09
LEFT TURN, DIFFERENT ROADWAYS	1	9.09
LEFT TURN, SAME ROADWAY	1	9.09
PARKED MOTOR VEHICLE	1	9.09
REAR END, SLOW OR STOP	4	36.36

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	0	0.00
Class C Injuries	1	100.00
Total Non-Fatal Injuries	1	100.00
Total Injuries	1	100.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	1	9.09
Feb	0	0.00
Mar	0	0.00
Apr	1	9.09
May	2	18.18
Jun	2	18.18
Jul	0	0.00
Aug	1	9.09
Sep	2	18.18
Oct	1	9.09
Nov	0	0.00
Dec	1	9.09

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	2	18.18
Tue	0	0.00
Wed	1	9.09
Thu	3	27.27
Fri	1	9.09
Sat	2	18.18
Sun	2	18.18

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	0	0.00
0900-0959	0	0.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	1	9.09
1300-1359	0	0.00
1400-1459	0	0.00
1500-1559	2	18.18
1600-1659	3	27.27
1700-1759	1	9.09
1800-1859	2	18.18
1900-1959	1	9.09
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	1	9.09

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	8	0	0	8
Dark	1	2	0	3
Other	0	0	0	0
Total	9	2	0	11

Object Struck Summary

Object Type	Times Struck	Percent of Total
PARKED MOTOR VEHICLE	2	100.00

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	15	68.18
PICKUP	1	4.55
SCHOOL BUS	1	4.55
SPORT UTILITY	4	18.18
UNKNOWN	1	4.55

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2015	2	0	0	2
2016	0	0	0	0
2017	4	0	0	4
2018	1	0	0	1
2019	3	0	1	2
2020	1	0	0	1
Total	11	0	1	10

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2015	0	0
2016	0	0
2017	0	0
2018	0	0
2019	0	1
2020	0	0
Total	0	1

Miscellaneous Totals

Year	Property Damage	EPDO Index
2015	\$ 6100	2.00
2016	\$ 0	0.00
2017	\$ 17100	4.00
2018	\$ 1700	1.00
2019	\$ 14000	10.40
2020	\$ 4000	1.00
Total	\$ 42900	18.40

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2015	1	0	0	0	1	0	0
2016	0	0	0	0	0	0	0

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Year	Run Off Road &						
	Left Turn	Right Turn	Rear End	Fixed Object	Angle	Side Swipe	Other
2017	0	0	1	0	1	0	2
2018	0	0	0	0	1	0	0
2019	1	0	2	0	0	0	0
2020	0	0	1	0	0	0	0
Total	2	0	4	0	3	0	2

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
ROSEMARYDECKTIAINT3TJF				76.8	8.4	8500	

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

County			Municipality			Y-Line Ft.	Begin Date	End Date	Years
Name	Code	Div.	Name	Code					
ORANGE	68	7	All and Rural		150	3/1/2015	2/29/2020	5.00	

Location Text	Requestor
Rosemary St at Henderson St	

Fiche Roads

Name	Code
ROSEMARY	50026492
HENDERSON	50013670

Intersection Road Combinations

Name	Code	Code	Name
HENDERSON	50013670	50026492	ROSEMARY